EADS astrium

Procedure

Herschel

Title: **Herschel IST Test Case 'Test of Instrument FDIR OBCP'**

CI-No:

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Distribution: See Distribution List (last page)

Issue	Date	Sheet	Description of Change	Release

Issue	Date	Sheet	Description of Change	Release
1	13.12.2007		Initial version	

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1 Scope

1.1 Objective

This Procedure represents the instruments FDIR part of the S/C IST Test in the debugging phase. In the formal run, this simulates the triggering of some specific FDIR actions during the operation day of each of the three instruments after S/C turn ON and initialisation at RMS start date. During debugging it has been decided to keep the date of the CCS to the current UTC and compact the three instruments during only one session.

After successful debugging, this procedure will be integrated into the overall S/C IST Test Procedure.

According to the IST specifications, the following OBCPs will be tested:

HIFI OBCP (refer to chapter 7.3)	APID	TM	Event ID	type	Comment
DB_OBCP_H_HIFI_RESET	16	5,x	151	DLL FDIR	

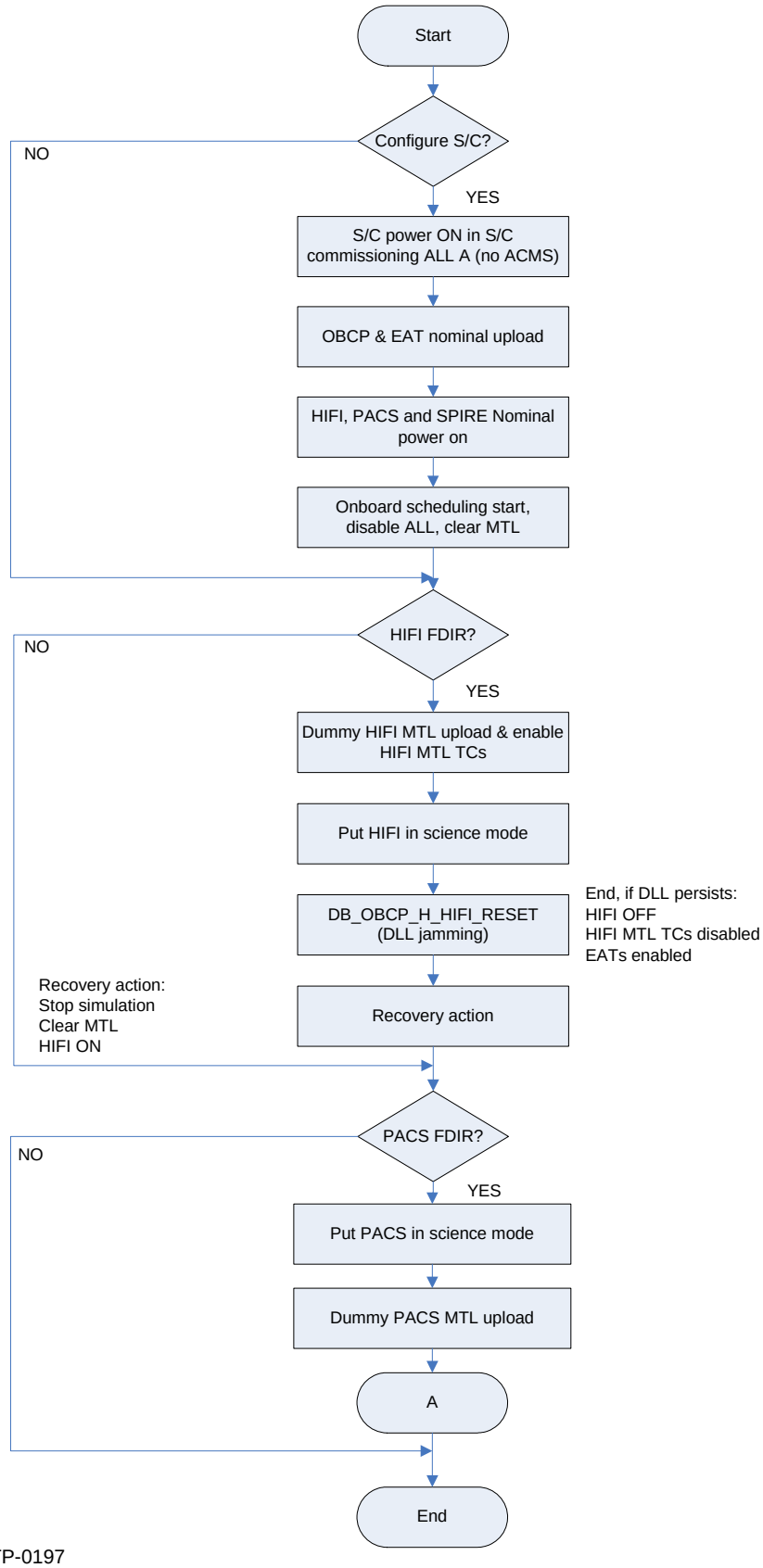
PACS OBCPs (refer to chapter 7.4)	APID	TM	Event ID	type	Comment
DB_OBCP_H_PACS_ SAFE	1152/1153	5,2	4		Done in instrument commissioning See PACS-ME-TP-021 §11,1,3 (autonomous SAFE)
DB_OBCP_H_PACS_BOLC_OFF	1152/1153	5,2	5		To be tested with start command [no TC available to generate TM(5,2)]
DB_OBCP_H_PACS_POWER_CYCLE	1152/1153	5,2	6		To be tested with start command [no TC available to generate TM(5,2)]
DB_OBCP_H_PACS_NORMAL_OFF	1152/1153	5,2	25		TFL done in instr. commissioning See TP-021 §11,1.4 (autonomous OFF mode HK loss)

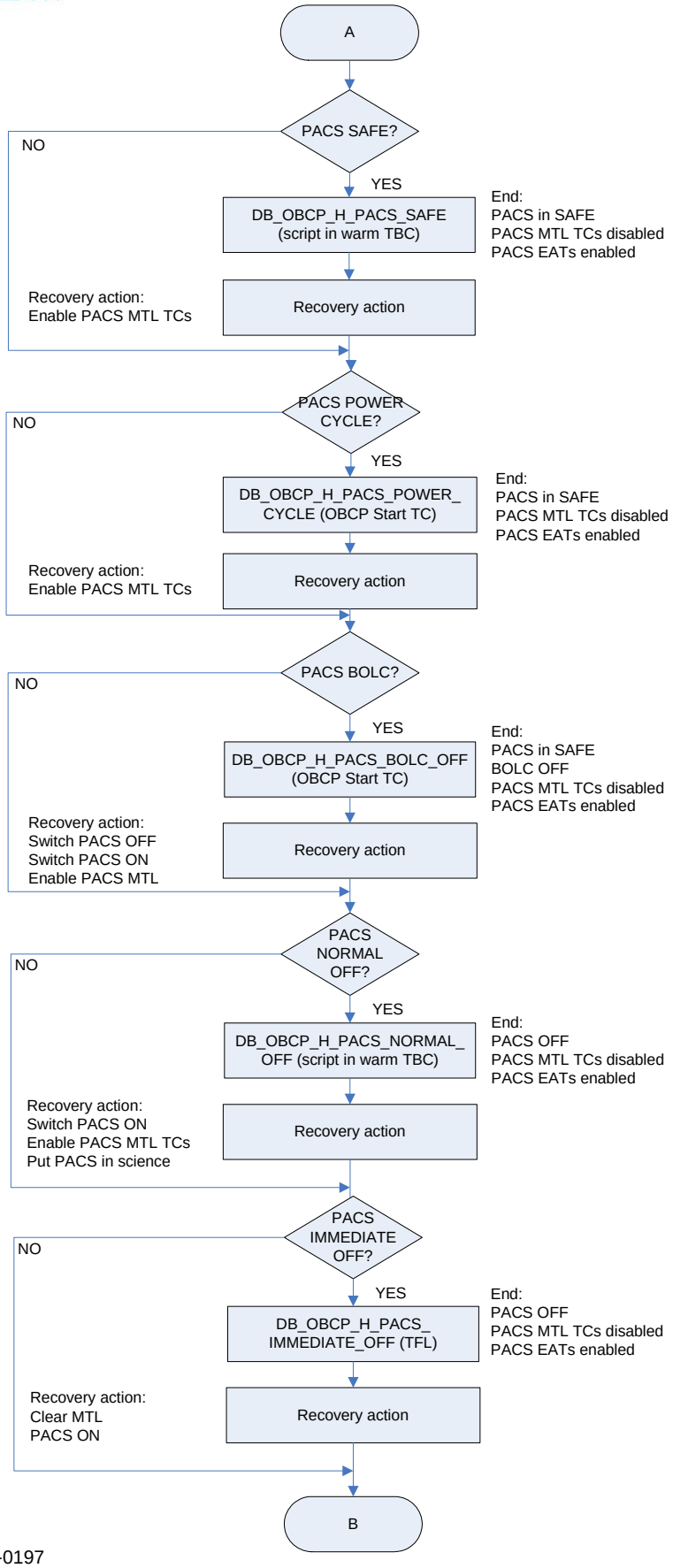
PACS OBCPs (refer to chapter 7.4)	APID	TM	Event ID	type	Comment
DB_OBCP_H_PACS_IMMEDIATE_OFF	16	5,x	153 → replaced by 186	DLL FDIR → replaced by TFL TM FDIR	TFL done in instr. commissioning See TP-021 §11,1.6 (autonomous OFF modeHK loss)

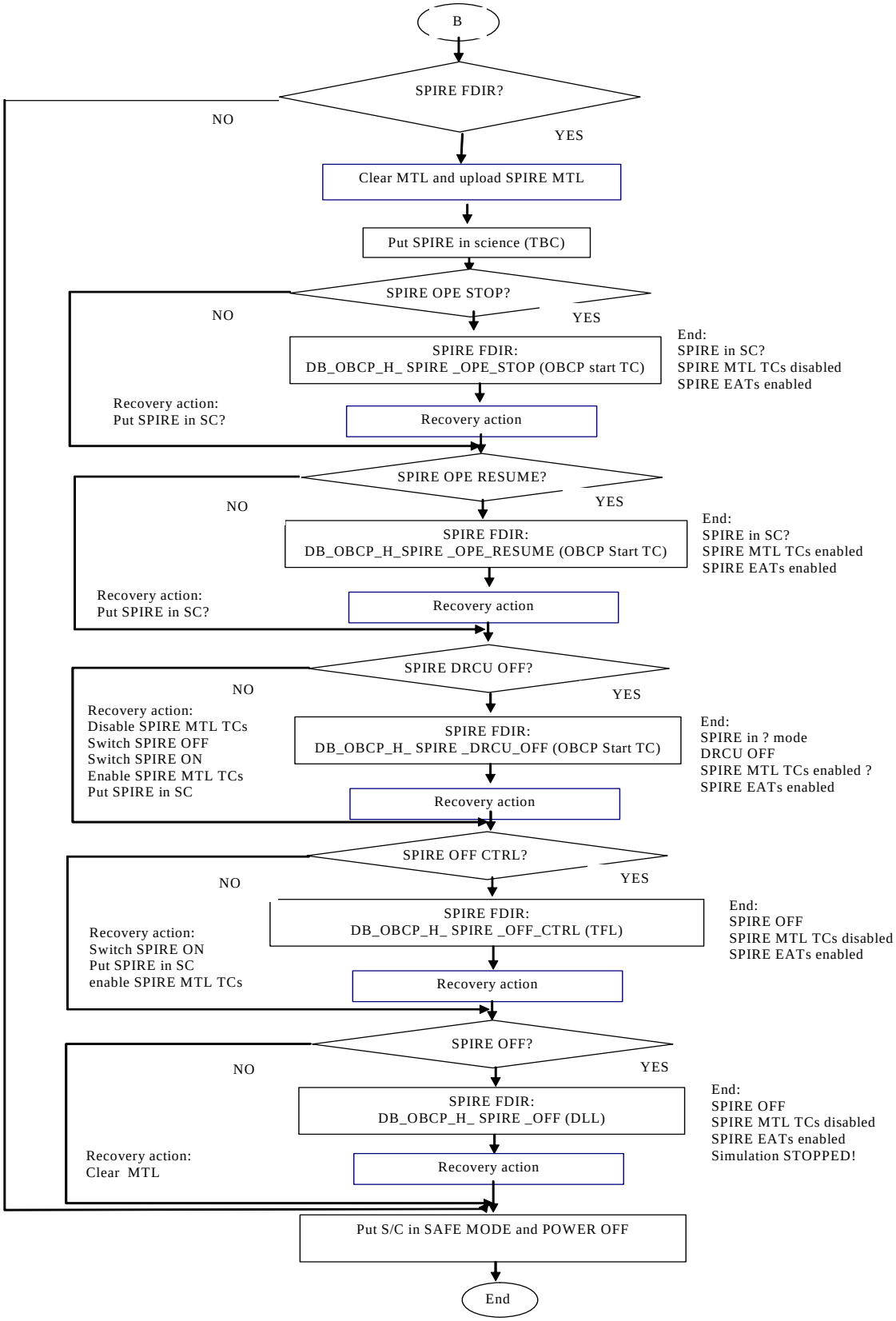
SPIRE OBCPs (refer to chapter 7.5)	APID	TM	Event ID	type	Comment
DB_OBCP_H_SPIRE_DRCU_OFF	1280/1281	5,2	xC000	Test TC allow stimulation	Not before end of Nov 2007
DB_OBCP_H_SPIRE_OPE_STOP	1280/1281	5,2	xC100	Test TC allow stimulation	Not before end of Nov 2007
DB_OBCP_H_SPIRE_OPE_RESUME	1280/1281	5,2	xC110	Test TC allow stimulation	Not before end of Nov 2007
DB_OBCP_H_SPIRE_OFF	16	5,x	152	DLL FDIR	
DB_OBCP_H_SPIRE_OFF_CTRL	16	5,x	185	TFL TM FDIR	

1.2 Operational Flow

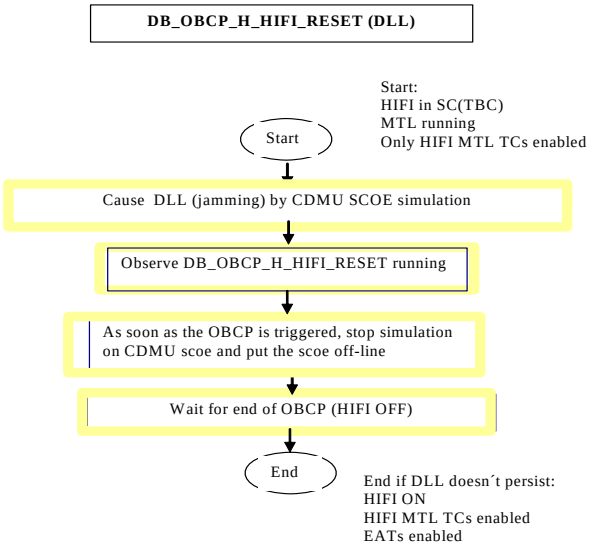
The overall flow of the Instruments FDIR is providedin the schemas of the following pages.


Start
Configure S/C?
NO
YES
S/C power ON in S/C commissioning ALL A (no ACMS)
OBCP & EAT nominal upload
HIFI, PACS and SPIRE Nominal power on
Onboard scheduling start, disable ALL, clear MTL
HIFI FDIR?
NO
YES
Dummy HIFI MTL upload & enable HIFI MTL TCs
Put HIFI in science mode
DB_OBCP_H_HIFI_RESET (DLL jamming)
End, if DLL persists:
HIFI OFF
HIFI MTL TCs disabled
EATs enabled
Recovery action:
Stop simulation
Clear MTL
HIFI ON
Recovery action
PACS FDIR?
NO
YES
Put PACS in science mode
Dummy PACS MTL upload
A
End

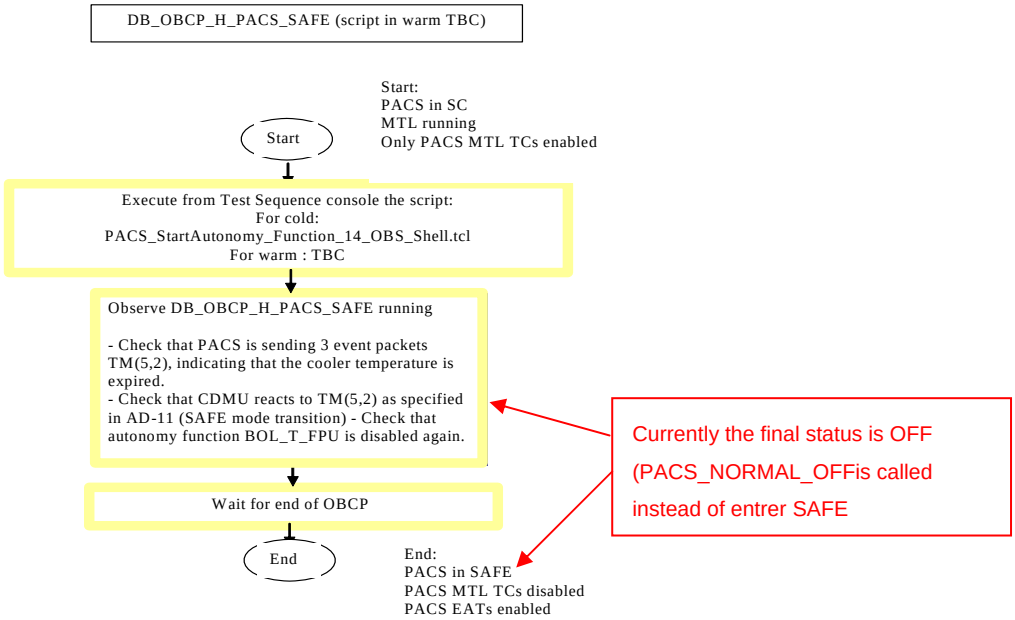

A
PACS SAFE?
NO
YES
DB_OBCP_H_PACS_SAFE (script in warm TBC)
End: PACS in SAFE PACS MTL TCs disabled PACS EATs enabled
Recovery action: Enable PACS MTL TCs
Recovery action
PACS POWER CYCLE?
NO
YES
DB_OBCP_H_PACS_POWER_ CYCLE (OBCP Start TC)
End: PACS in SAFE PACS MTL TCs disabled PACS EATs enabled
Recovery action: Enable PACS MTL TCs
Recovery action
PACS BOLC?
NO
YES
DB_OBCP_H_PACS_BOLC_OFF (OBCP Start TC)
End: PACS in SAFE BOLC OFF PACS MTL TCs disabled PACS EATs enabled
Recovery action: Switch PACS OFF Switch PACS ON Enable PACS MTL
Recovery action
PACS NORMAL OFF?
NO
YES
DB_OBCP_H_PACS_NORMAL_ OFF (script in warm TBC)
End: PACS OFF PACS MTL TCs disabled PACS EATs enabled
Recovery action: Switch PACS ON Enable PACS MTL TCs Put PACS in science
Recovery action
PACS IMMEDIATE OFF?
NO
YES
DB_OBCP_H_PACS_ IMMEDIATE_OFF (TFL)
End: PACS OFF PACS MTL TCs disabled PACS EATs enabled
Recovery action: Clear MTL PACS ON
Recovery action
B


B
SPIRE FDIR?
NO
YES
Clear MTL and upload SPIRE MTL
Put SPIRE in science (TBC)
SPIRE OPE STOP?
NO
YES
SPIRE FDIR:
DB_OBCP_H_ SPIRE _OPE_STOP (OBCP start TC)
End:
SPIRE in SC?
SPIRE MTL TCs disabled
SPIRE EATs enabled
Recovery action:
Put SPIRE in SC?
Recovery action
SPIRE OPE RESUME?
NO
YES
SPIRE FDIR:
DB_OBCP_H_SPIRE _OPE_RESUME (OBCP Start TC)
End:
SPIRE in SC?
SPIRE MTL TCs enabled
SPIRE EATs enabled
Recovery action:
Put SPIRE in SC?
Recovery action
SPIRE DRCU OFF?
NO
YES
Recovery action:
Disable SPIRE MTL TCs
Switch SPIRE OFF
Switch SPIRE ON
Enable SPIRE MTL TCs
Put SPIRE in SC
SPIRE FDIR:
DB_OBCP_H_ SPIRE _DRCU_OFF (OBCP Start TC)
End:
SPIRE in ? mode
DRCU OFF
SPIRE MTL TCs enabled ?
SPIRE EATs enabled
Recovery action
SPIRE OFF CTRL?
NO
YES
SPIRE FDIR:
DB_OBCP_H_ SPIRE _OFF_CTRL (TFL)
End:
SPIRE OFF
SPIRE MTL TCs disabled
SPIRE EATs enabled
Recovery action:
Switch SPIRE ON
Put SPIRE in SC
enable SPIRE MTL TCs
Recovery action
SPIRE OFF?
NO
YES
SPIRE FDIR:
DB_OBCP_H_ SPIRE _OFF (DLL)
End:
SPIRE OFF
SPIRE MTL TCs disabled
SPIRE EATs enabled
Simulation STOPPED!
Recovery action:
Clear MTL
Recovery action
Put S/C in SAFE MODE and POWER OFF
End

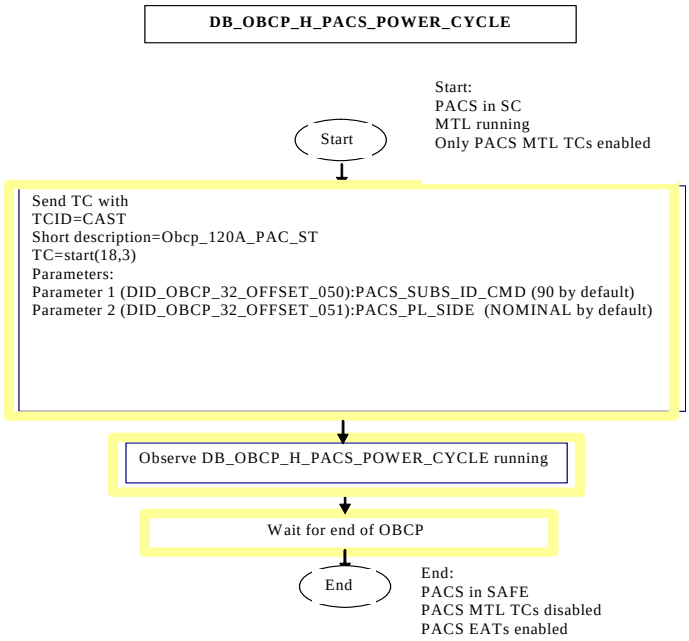
DB_OBCP_H_HIFI_RESET



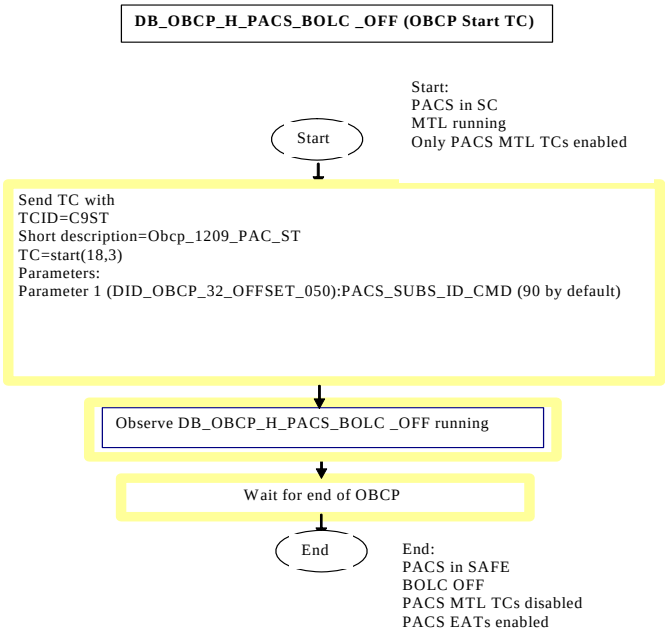
DB_OBCP_H_PACS_SAFE (script in warm TBC)



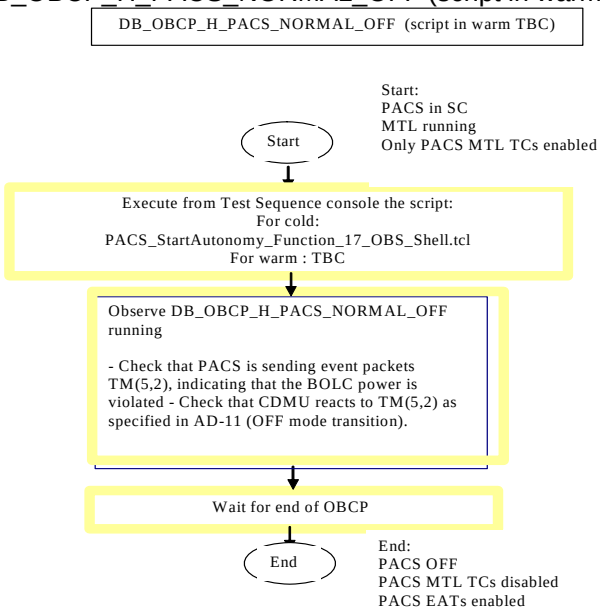
DB_OBCP_H_PACS_POWER_CYCLE (OBCP Start TC)



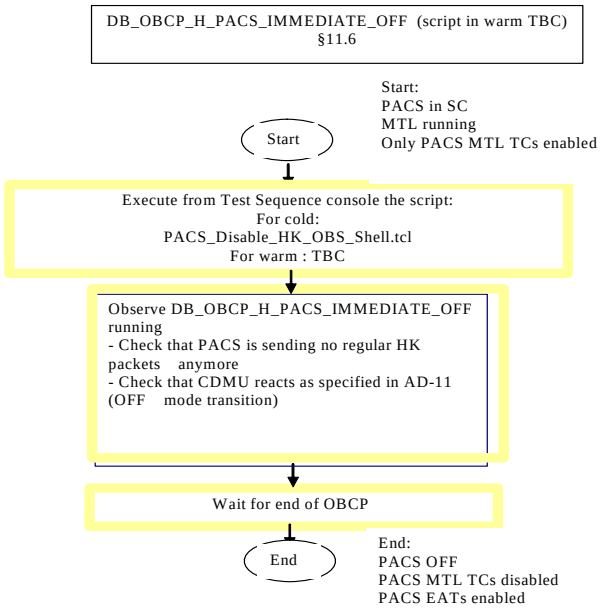
DB_OBCP_H_PACS_BOLC _OFF (OBCP Start TC)



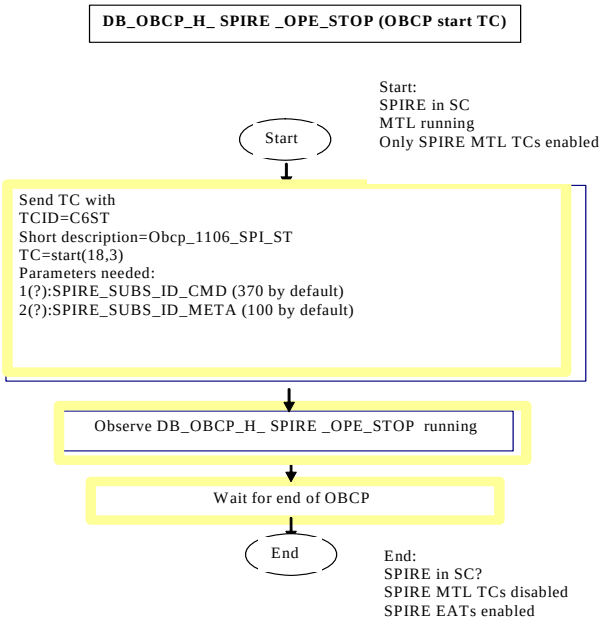
DB_OBCP_H_PACS_NORMAL_OFF (script in warm TBC)



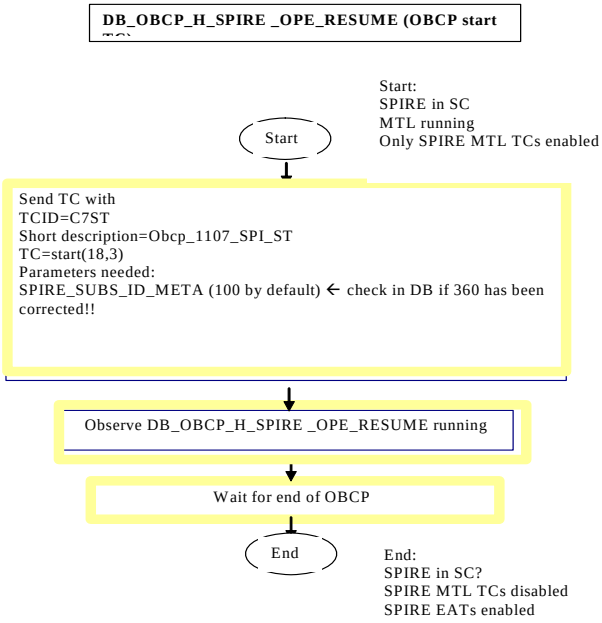
DB_OBCP_H_PACS_IMMEDIATE _OFF (TFL)



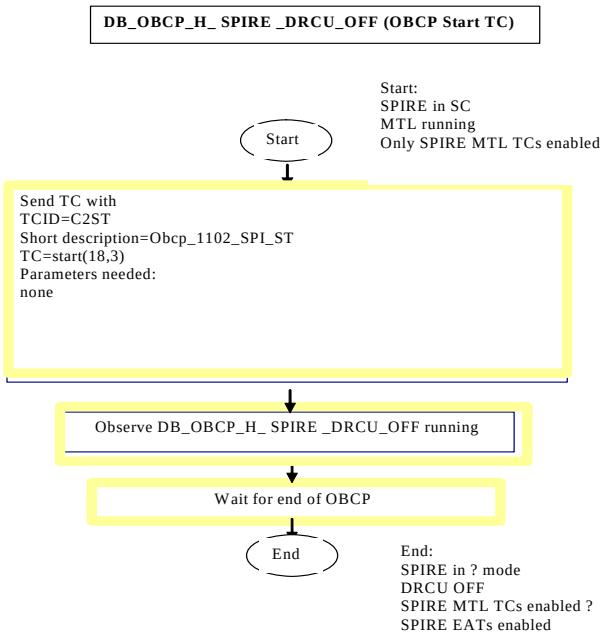
DB_OBCP_H_ SPIRE _OPE_STOP (OBCP start TC)



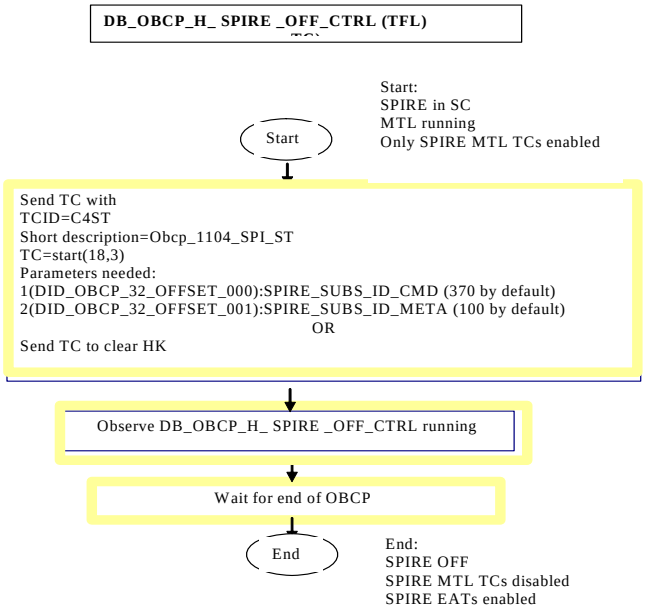
DB_OBCP_H_SPIRE _OPE_RESUME (OBCP Start TC)



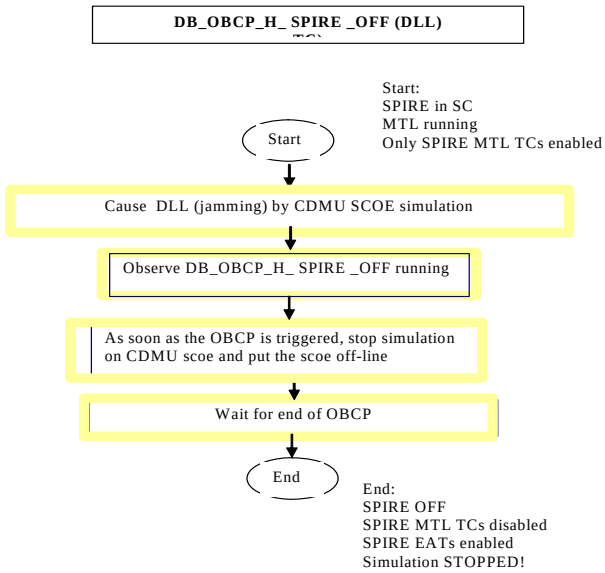
DB_OBCP_H_ SPIRE _DRCU_OFF (OBCP Start TC)



DB_OBCP_H_ SPIRE _OFF_CTRL (TFL)



DB_OBCP_H_ SPIRE _OFF (DLL)



Alternatively:

Send TC with
TCID=C3ST
Short description=Obcp_1103_SPI_ST
TC=start(18,3)
Parameters needed:
1(DID_OBCP_32_OFFSET_000):SPIRE_SUBS_ID_CMD (370 by default)
2(DID_OBCP_32_OFFSET_001):SPIRE_SUBS_ID_META (100 by default)

Note:

The detailed step-by-step test procedure is provided in chapter 7.

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 Integrated Satellite Test Specification
H-P-2-ASP-SP-0939, Issue 4

AD-2 S/C I.S.T. Routine Mission Scenario – Operation day framework
ASP-06-AIT-AVIO-PL-008030, Issue 2

AD-3 Test Specification for Herschel Instruments AVM and FM Tests performed at Satellite Level
HP-2-ASP-TS-1083_1_0

AD-4 Leading Procedure for Herschel Integrated Satellite Test 'IST'
HP-2-ASED-TP-0134

2.2 Reference Documents

RD-1 Herschel SVM User Manual
H-P-MA-AI-0001

RD-2 Reference Mission Scenario, Herschel / Planck project
SCI-PT / 12759, Issue 3.1, 06/08/2004

RD-3 Herschel/Planck List of Acronyms
H-P-ASP-LI-0077

RD-4 Herschel Instruments power ON-OFF and Mode Switching Procedure for functional Testing
HP-2-ASED-TP-0206 issue 1.

2.3 Other Documents

None

2.4 Acronyms

Acronyms are specified in RD-3 and are therefore not listed in this document.

3 Requirements to be verified

The requirements of AD-1, chapter 5.8.13 "TEST OF INSTRUMENT FDIR", are to be verified.

4 Configuration

4.1 Herschel S/C Configuration

Refer to AD-4

4.1.1 Hardware Configuration

Refer to AD-4

4.1.2 Software Configuration

Refer to AD-4

4.1.3 Test Configuration

Refer to AD-4

4.1.4 Simulated Equipments

Refer to AD-4

4.2 Set-up

Refer to AD-4

5 Conditions

5.1 Personnel

Refer to AD-4

5.2 Environmental

Refer to AD-4

5.3 General Precautions and Safety

Refer to AD-4

5.3.1 General Safety Requirements, Precautions

Refer to AD-4

5.3.2 ESD constraints

Refer to AD-4

5.3.3 Special QA Requirements

Refer to AD-4

5.4 GSE

Refer to AD-4

5.4.1 MGSE

Refer to AD-4

5.4.2 CVSE

Refer to AD-4

5.4.3 EGSE

5.4.3.1 EGSE Hardware Configuration

Refer to AD-4

5.4.3.2 EGSE User Software

Refer to AD-4

5.4.3.3 Grounding Configuration

Refer to AD-4

5.4.3.4 Test Equipment

Refer to AD-4

5.4.3.5 Data Acquisition System

Refer to AD-4

5.4.4 OGSE

Refer to AD-4

5.4.5 Special Equipment

Refer to AD-4

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 specification [AD-1];
- Fulfilment of test results with respect to required data;
- Verification that all the TM parameters used to monitor the SVM 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 Test Execution Step-by-Step Procedure

7.1 S/C Initialization

Follow the steps in the power ON procedure of AD-4, selecting the Test Case Instruments FDIR (5.8.13).

If the test case is run after the CDMS management (5.8.7):

- on the master GUI, select Test Case Instruments FDIR (5.8.13)
- SKIP the IST_START
- Call the master Z010999MCVT131_IST_INSTR_FDIR

NOTE: In this sequence, SKIP the step “Configure for Instrument FDIR test”

If the test case is run stand-alone (e.g. during debugging),:

- on the master GUI, select Test Case Instruments FDIR (5.8.13)
- PERFORM the IST_START (during debugging SKIP steps for ACMS on)
- Call the master Z010999MCVT131_IST_INSTR_FDIR

NOTE: In this sequence, PERFORM the step “Configure for Instrument FDIR test”

7.2 Test Specific Initialization

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1.	*In the CCS Test Console* *Callasync Z010999MCVT131_IST_INSTR_FDIR.tcl*						
2.	*During Z010999MCVT131_IST_INSTR_FDIR.tcl* *START HERSCHEL INSTRUMENTS FDIR, SECTION 5.8.13* *Click button YES to proceed*						
3.	*During Z010999MCVT131_IST_INSTR_FDIR.tcl* *Configure for Instruments FDIR test?* *Click button YES to proceed*						
4.	*During Z010999MCVT131_IST_INSTR_FDIR* *"CDMS setting for separation"* *Click the button Confirm to proceed*						

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
5.	*During …* *D103159SCVT138_IST_LAUNCH_SUNACQ* *Wait, go to script …ACMS_CONFIG25 and enter option 2*				*Pending SEPARATION to be executed from … ACMS_CONFIG25*		
6.	*During A102109SPVT103_ACMS_CONFIG25* *(1,6,4,5,20,99,88)* *SEPARATION (open separation straps)* *Main Menu 3.0: option 2* *Click the button OK* *Click the button Continue*						
7.	*During Z010999MCVT089_ACMS_SAM_MON* *Do you want to continue to monitor SAM Sun Pointing mode?* *Enter your choice: no*						
9.	*At end of* *Z010999MCVT089_IST_LAUNCH_SUNACQ* *Click the button "End TS!" to proceed*						
10.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *Transition to Nominal* *Click the button Confirm to proceed*						

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
11.	*During Z010999MCVT089_SUNACQ_NOMINAL* *Click the button "End TS!" to proceed*						
12.	*During Z010999MCVT131_IST_INSTR_FDIR* *At the prompt "Command ACMS (via OCM/Earth) to SCM/Earth"* *Press "OK" to proceed*						
13.	*During A102109SPVT103_ACMS_CONFIG25* *Select Transition to OCM.* *Main Menu 4.0 SAM Phase: Option 6* *Click the button OK to proceed* *Click the button Continue to proceed*						
14.	*During A102109SPVT036_ACMS_STR_ON* *Do you want to change the current STR in use ?: Answer no* *Click the button OK to proceed*						

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
15.	*During A102109SPVT043_TRANSITION_TO_OCM* *Only for info:* *Verify after ca.7 min if ACMS mode is = OCM point fine (Earth pointing)* *Verify in AND: ZAA00999 if Est Attitude Q1..Q4 is close to Cur Target Q1/Q3 = 0, Q2=0.6 / Q4= 0.79* *Verify AESM3002 = OCM point fine or in synoptic SAT – ACMS – ACC – Mode Nominal*						
16.	*During A102109SPVT043_TRANSITION_TO_OCM* *SUSPEND* *click on script name in Test Console* *Click the button RESUME to proceed*				FCV duty cycle fail		
17.	*During A102109SPVT103_ACMS_CONFIG25* *Select Transition to SCM (Science mode).* *Main Menu 7.0: Option 3* *Click the button OK to proceed* *Click the button Continue to proceed*						

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
18.	*During 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 ?*						
19.	*During A102109SPVT042_RWL_SPINUP* *"Change actual Angular Momentum (initial values)?"* *Option: no* *Wait for ca. 10 min*						
20.	*Only for info:* *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)*						

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
21.	*Only for info:* *Verify 4x RWL momentum parameters* *AEWMA002 = 11.0 (RWL1 momentum)* *AEWMB002 = - 9.4 (RWL2 momentum)* *AEWMC002 = 0.0 (RWL3 momentum)* *AEWMD002 = - 8.5 (RWL4 momentum)* *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 !!!*						
22.	*At end of A102109SPVT103_ACMS_CONFIG25* *Click the button "End TS!" to proceed*						
23.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"Transition from SAS 900W and BS 24V to SAS 1475W and BS full charged"* *Click the button Confirm to proceed*						

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
24.	*During Z010999MCVT131_IST_INSTR_FDIR* *"Switch on SREM and start acquisition service"* *Click the YES Confirm*						
25.	*During A102109SPVT103_ACMS_CONFIG25* *Initial S/C status check* *(acc. table in 5.8.3.4) except for:* *SCBP = 5, ACMS mode = SAM, STRs & RWs = OFF !!!* *Click the button Confirm*				Could be done earlier, as asynchronous		
26.	*During A102109SPVT103_ACMS_CONFIG25* *Click the YES to Confirm*				Could be done earlier, as asynchronous		
27.	*At end of A102109SPVT103_ACMS_CONFIG25* *Click the button "End TS!" to proceed*				Could be done earlier, as asynchronous		
28.	*During Z010999MCVT131_IST_INSTR_FDIR* *"POWER ON HIFI PRIMARY"* *Click the YES Confirm*						

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
29.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"POWER ON PACS PRIMARY"* *Click the YES Confirm*						
30.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"POWER ON SPIRE PRIMARY"* *Click the YES Confirm*						
31.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"SAVING ORIGINAL SCBP"* *Click the YES Confirm*						
32.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"UPLOAD OBCP and EAT for PRIMARY"* *Click the YES Confirm*						

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
33.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"Please upload only the EAT entries for PRIMARY"* *Click the OK to Confirm*						
34.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"Clear MTL and start ON BOARD SCHEDULING?" to proceed* *Click YES Confirm*						
	During *Z010999MCVT131_IST_INSTR_FDIR* *"Check actual deletion of MTL content"* *Press OK to continue*						
	During *Z010999MCVT131_IST_INSTR_FDIR* *"Check that at subschedules from 1 to 256, plus the 370 are enabled"* *Press OK to continue*						

Step nr.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
35.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"Start the instrument specific FDIR sequence""* *Callasync the specific instrument FDIR sequence from test console and at the end of it click OK.*				For HIFI continue from chapter 7.3 For PACS 7.4 For SPIRE 7.5 Also one after the other.		
36.	*During* *D102159SCVT192_GET_EAT_REPORT* *"???????????""*						
37.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"Check that all EATs are enabled"* *Perform activity and then press OK*						
38.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"Start up instrument specific sequence and Select OK to switch off"* *Call the specific instrument FDIR sequence and at the end of it click OK.*						

7.3 HIFI

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
39.	*Callasync* *Z010999MCVT134_IST_HIFI_FDIR* *to perform the HIFI related part of the Instruments FDIR IST*						
40.	*During* *Z010999MCVT134_IST_HIFI_FDIR* *"Perform HIFI FDIR PRIMARY?"* *Click the YES to Confirm*				If NO, it exits script		
41.	*During* *Z010999MCVT134_IST_HIFI_FDIR* *"Please check that all instruments are in standby. If not put them in standby"* *Click the YES Confirm*				RD-4 for details.		
42.	*During* *Z010999MCVT134_IST_HIFI_FDIR* *"INITIAL S/C STATUS CHECK"* *Click the YES Confirm*	5.8.13					

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
43.	*During Z010999MCVT134_IST_HIFI_FDIR* *"Set SCBP to HIFI Prime (2)"* *Click the YES Confirm*						
44.	*During Z010999MCVT134_IST_HIFI_FDIR* *"upload dummy MTL with HIFI connection test in subschedule 70"* *Click the YES Confirm*						
45.	*During Z010999MCVT134_IST_HIFI_FDIR* *"Check that the MTL contains one HC176289 (HIFI_connection_test) every 5 minutes for 10 hours in subshcedule 70"* *Click the YES Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
46.	*During Z010999MCVT134_IST_HIFI_FDIR* *"Check that subschedule 60 (meta-HIFI) is disabled and 70 (HIFI TCs) is ena bled, then press OK"* *Perform activitythen press OK*						
47.	*During Z010999MCVT134_IST_HIFI_FDIR* *"Wait for execution of the first command, then press OK"* *Click the YES Confirm*						
48.	*During Z010999MCVT134_IST_HIFI_FDIR* *"Put HIFI Primary in science mode"* *Click the YES Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
50.	*During Z010999MCVT134_IST_HIFI_FDIR* *"Perform HIFI RESET OBCP (DLL)?"* *Click the YES Confirm*	If skipped goes to 75.			According to E-mail from Simon Hamer on 5.12.2007 to noam.lebonnois@external.thalesaleniaspace.com the 1 second wait between switching off/on HIFI ICU is too short. SRON requires 4 minutes and 20 seconds. This might be a blocking problem (NCR is not yet raised).		
51.	*During Z010999MCVT134_IST_HIFI_FDIR* *"HIFI RESET DLL FDIR triggering"* *Click the YES Confirm*						
52.	*During Z010999MCVT134_IST_HIFI_FDIR* *"start the HIFI (RT 16) simulation on the CDMU SCOE to create jamming"* *Press OK*						
53.	*On CDMS SCOE* *Double-click on the link "StartSCOE.bat" on the desktopto start CDMU SCOE application.*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
54.	*On CDMS SCOE* *Select Menu:* *Mode→ Local Mode* *Password: H-P*						
55.	*On CDMS SCOE* *Select from menu:* *Setup→RTSim Configuration*						
56.	*On CDMS SCOE* *Select file:* *R:\(192.168.90.32)\Herschel.rtc* *And press OK*						
57.	*On CDMS SCOE* *Select from menu:* *Mode→ On Line*						
58.	*On CDMS SCOE* *Select from menu:* *Control→TM Generation*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
59.	*On CDMS SCOE* *In TM Generation tab press button "Load List"* *Then browse to:* *Herschel_PACS_BURST_5_7_2007.pkt*						
60.	*On CDMS SCOE* *In window: "RT TM Generation Control"* - *Delete PACS and SPIRE* - *Select "Continuous Run" in Run Specifications frame* - *Select "Sequence Count", "SCET","CRC" in Automatic Packet Updates* - *Confirm the dialog box, to recalculate the packet*						
61.	*On CDMS SCOE* *In window: "RT TM Generation Control"* *Check that the generation time is fixed to 50/30 ms (check 25 with Piero)*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
62.	*On CDMS SCOE* *In window: "System Control/RT controls"* *Press the Enable button for:* - *control* - *TM queue* - *TC queue* - *Burst mode*						
63.	*On CDMS SCOE* *In window: "RT TM Generation Control"* *Press "Run"*				Check that in marter log windows there are not too many errors. Otherwise press "Stop" and reconfigure the generation time to a higher value.		
64.	*During* *Z010999MCVT134_IST_HIFI_FDIR* *"Please press OK when CDMU SCOE has been configured for jamming"* *Press OK*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
65.	*During Z010999MCVT134_IST_HIFI_FDIR* *"check that OBCP HIFI_RESET has been triggered (e.g. events, commands directed to HIFI are being sent and HIFI is going off)"* *Perform activity then press OK*	Check for TM(5,4) with Event ID = 0x3001, SID = 0 Check for TM(5,4) with *Event ID = 0x3002, SID = 0 OR Event ID = 0x3000, SID = 0*					
66.	*During Z010999MCVT134_IST_HIFI_FDIR* *"Wait until the end of the OBCP, when HIFI is OFF"* *Click the YES Confirm*	Event TM(5,1,107) OBCP Ended with ProcedureID 0x130D					
67.	*During Z010999MCVT134_IST_HIFI_FDIR* *"RECOVERY ACTION"* *Click the YES to Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
68.	*During Z010999MCVT134_IST_HIFI_FDIR* *"please check that HIFI is OFF and INVALID and no HK is being received"* *Perform activity and press OK Confirm*	WM52K565 = OFF WM52D565 = OFF					
69.	*During Z010999MCVT134_IST_HIFI_FDIR* *"please check that the MTL commands of the subschedule 70 have been disabled"* *Perform activity and press OK Confirm*						
70.	*During Z010999MCVT134_IST_HIFI_FDIR* *"please check subschedules 60 and 70 have been disabled"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
71.	*During* *Z010999MCVT134_IST_HIFI_FDIR* *"Stop the simulation on the CDMU scoe and set the scoe OFF LINE"* *Press OK*						
72.	*On CDMS SCOE* *In window: "RT TM Generation Control"* *Press "Stop"*				.		
73.	*On CDMS SCOE* *Select from menu:* *Mode → Off Line*						
74.	*During* *Z010999MCVT134_IST_HIFI_FDIR* *"End of HIFI RESET OBCP (DLL)"* *"check that all EATs are enabled"* *Perform activity and press OK to Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
75.	*During* *Z010999MCVT134_IST_HIFI_FDIR* *"RESET starting conditions"* *Click the YES to Confirm*						
	During *Z010999MCVT131_IST_INSTR_FDIR* *"Check actual deletion of MTL content"* *Press OK to continue*						
	During *Z010999MCVT131_IST_INSTR_FDIR* *"Check that at subschedules from 1 to 256, plus the 370 are enabled"* *Press OK to continue*						
76.	*During* *Z010999MCVT134_IST_HIFI_FDIR* *"Please clear the MTL"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
77.	*During* *Z010999MCVT134_IST_HIFI_FDIR* *"check that all EATs are enabled"* *Perform activity and press OK Confirm*						
78.	*At end of* *Z010999MCVT134_IST_HIFI_FDIR* *Click the button "End TS!" to proceed*						

7.4 PACS

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
79.	*Call* *Z010999MCVT135_IST_PACS_FDIR* *to perform the PACS related part of the Instruments FDIR IST*						
80.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"PERFORM PACS FDIR TEST (PRIMARY)?"* *Click the YES Confirm*	If NO, exits script					
	During *Z010999MCVT135_IST_PACS_FDIR* *"Please check that all instruments are in standby. If not put them in standby"* *Click the YES Confirm RD-4 for details.*				RD-4 for details.		
	During *Z010999MCVT135_IST_PACS_FDIR* *"INITIAL S/C STATUS CHECK"* *Click the YES Confirm*	5.8.13					

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
	During *Z010999MCVT135_IST_PACS_FDIR* *"Set SCBP to PACS Prime (4)"* *Click the YES Confirm*						
	During *Z010999MCVT135_IST_PACS_FDIR* *"upload dummy MTL with PACS connection test in subschedule 90"* *Click the YES Confirm*						
	During *Z010999MCVT135_IST_PACS_FDIR* *"Check that the MTL contains one PC023280 (DPU_TEST_CONN) every 5 minutes for 10 hours in subshcedule 90"* *Click the YES Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
	During *Z010999MCVT135_IST_PACS_FDIR* *"Check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is ena bled, then press OK"* *Perform activitythen press OK*						
	During *Z010999MCVT135_IST_PACS_FDIR* *"Wait for execution of the first command, then press OK"* *Click the YES Confirm*						
81.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Insert call to PACS PING MTL upload"* *Click the YES Confirm*						
82.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Wait for execution of the first command, then press OK"* *Click the YES Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
83.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Set SCBP to PACS Prime (4)"* *Click the YES Confirm*						
84.	*Z010999MCVT135_IST_PACS_FDIR* *"INITIAL S/C STATUS CHECK"* *Click the YES Confirm*	5.8.13.7					
85.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Put PACS in SCIENCE"* *Click the YES Confirm*						
86.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"TEST the PACS SAFE FDIR?"* *Click the YES Confirm*	If skipped goes to step 98.			Open NCR's for the PACS SAFE OBCP: **NC-3510** **NC-3780**		

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
87.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Execute PACS SCRIPT FOR AUTONOMY FUNCTION 14?"* *Click the YES Confirm*						
	During *Z010999MCVT135_IST_PACS_FDIR* *"Filter a TMPKT history for TM(5,2) and one for TM(5,1)"* *Check script name and press OK Confirm*						
88.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Executing in parallel script PACS_StartAutonomy_Function_14_OBS_Shell.tcl"* *Check script name and press OK Confirm*	If not correct Abort test sequence					
89.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that PACS is sending 3 event packets TM(5,2) -cooler recycling temp expired"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
90.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that OBCP PACS_SAFE has been triggered – TM(5,1) with SPID 40148170 prodID 0x1208"* *Perform activity and press OK Confirm*						
91.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that CDMU reacts as in SAFE MODE transition"* *Click the YES Confirm*						
92.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that BOL_T_FPU is disabled again"* *Perform activity and press OK Confirm*	**PM165380** (DP_EV_BOL_T_FPU) = Disabled					
93.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Wait until the end of the OBCP TM(5,1) with SPID 40145170 procID 0x1208"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
94.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"please check that PACS is in SAFE mode and that its MTL commands have been disabled"* *Perform activity and press OK Confirm*	**P380402380** (TM RATE) = SAFE					
95.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"RECOVERY ACTION"* *Press YES to Confirm*						
96.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"If still running, please terminate the sequence that keeps PACS in SCIENCE"* *Perform activity and press OK Confirm*						
	During *Z010999MCVT135_IST_PACS_FDIR* *"Check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is ena bled, then press OK"* *Perform activitythen press OK*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
97.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"End of PACS SAFE OBCP TEST"* *"check that all EATs are enabled"* *Perform activity and press OK Confirm*						
98.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"TEST the PACS POWER CYCLE OBCP?"* *Click the YES Confirm*	If NO, it jumps to step 107.					
99.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"TRIGGER OBCP WITH START TC"* *Click the YES Confirm*						
	Z010999MCVT135_IST_PACS_FDIR *"Filter a TMPKT history for TM(5,1)"* *Check script name and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
100.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"sending EGSE_tcsend_CEV DCAST185 { DPV32185 90 } { DPV32185 0}"* *Perform activity and press OK to Confirm*						
101.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that OBCP PACS_POWER_CYCLE has been triggered– TM(5,1) with SPID 40148170 procID 0x120A"* *Click the YES Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
102.	*During* *Z010999MCVT135_IST_PACS_FDIR* *" Wait until the end of the OBCP TM(5,1) with SPID 40145170 procID 0x120A"* *Perform activity and then Press OK (there will be another wait of 5 mins for safety)*				Check for TM(5,4) with Event ID = 0x2001, SID = 0 (as a result of the called-up "PACS normal off" OBCP) Check for TM(5,4) with Event ID = 0x2000, SID = 0 (as a result of the called-up "PACS normal off" OBCP) Check for TM(5,4) with Event ID = 0x2002, SID = 0		
	During *Z010999MCVT135_IST_PACS_FDIR* *"please check that PACS is in SAFE mode and that its MTL commands have been disabled"* *Perform activity and press OK Confirm*	**P380402380** (TM RATE) = SAFE					

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
103.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"RECOVERY ACTION"* *Click the YES Confirm*						
104.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"if still running, please terminate the sequence that keeps PACS in SCIENCE"* *Perform activity and press OK Confirm*						
105.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is ena bled, then press OK"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
106.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"End of PACS POWER CYCLE TEST.* *check that all EATs are enabled"* *Perform activity and press OK Confirm*						
107.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"TEST PACS BOLC OFF OBCP?"* *Click the YES Confirm*	If No, it jumps to step 118.					
108.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"TRIGGER OBCP WITH START TC"* *Click YES Confirm*						
	Z010999MCVT135_IST_PACS_FDIR *"Filter a TMPKT history for TM(5,1)"* *Check script name and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
109.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Sending EGSE_tcsend_CEV DC9ST185 { DPV32185 90 }"* *Perform activity and press OK Confirm*						
110.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that OBCP PACS BOLC OFF has been triggered– TM(5,1) with SPID 40148170 proID 0x1209 "* *Perform activity and press OK Confirm*						
111.	*During* *Z010999MCVT135_IST_PACS_FDIR* *" Wait until the end of the OBCP TM(5,1) with SPID 40145170 procID 0x1209"* *Perform activity and then Press OK*	**DEL54171** (PacsBolc1FunctSt) = OFF **P380402380** (TM RATE) = SAFE					

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
112.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"RECOVERY ACTION"* *Perform activity and press OK Confirm*						
113.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"please check that PACS is in SAFE mode and that its MTL commands have been disabled"* *Perform activity and press OK Confirm*						
114.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"if still running, please terminate the sequence that keeps PACS in SCIENCE"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
115.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is ena bled, then press OK"* *Perform activity and press OK Confirm*						
116.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Please run in parallel the sequence to put PACS in SCIENCE for 1h"* *Perform activity and press OK Confirm*						
117.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"End of PACS BOLC OFF TEST* *check that all EATs are enabled"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
118.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"PACS NORMAL OFF OBCP"* *Click the YES Confirm*	If NO, it jumps to step 131.					
119.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Execute PACS SCRIPT FOR AUTONOMY FUNCTION 17?"* *Click the YES Confirm*						
120.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Calling script PACS_StartAutonomy_Function_17_OBS_Shell.tcl"* *Perform activity and press OK to Confirm*	If script is not correct abort test sequence.					
121.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that OBCP PACS_NORMAL_OFF has been triggered"* *Click the YES Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
122.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that PACS is sending event packets TM(5,2) - BOLC power violated"* *Perform activity and press OK Confirm*	Check for TM(5,4) with Event ID = 0x2001, SID = 0 Check for TM(5,4) with Event ID = 0x2000, SID = 0					
123.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that CDMU reacts as in OFF MODE transition"* *Click the YES Confirm*						
124.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Wait until the end of the OBCP (PACS OFF mode and MTL TCs disabled)"* *Perform activity and press OK Confirm*						
125.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"RECOVERY ACTION"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
126.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Check that PACS is OFF and MTL TCs are disabled"* *Perform activity and press OK Confirm*						
127.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"If still running, please terminate the sequence to keep PACS in SCIENCE"* *Perform activity and press OK Confirm*						
128.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Please check that only the PACS TCs Release is enabled!"* *Perform activity and press OK Confirm*						
129.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Please run in parallel the sequence to put PACS in SCIENCE for 1h"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
130.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"End of PACS NORMAL OFF TEST.* *Check that all EATs are enabled"* *Perform activity and press OK Confirm*						
131.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"PACS IMMEDIATE OFF OBCP?"* *Click the YES Confirm*	If skipped it jumps to step **Error! Reference source not found.**			Open NCR's for the PACS IMMEDIATE OFF OBCP: HP-130000-ASED-NC-3509		
	During *Z010999MCVT135_IST_PACS_FDIR* *"Execute PACS script for clearing HK (warm TBC)?"* *Perform activity and press OK Confirm*						
132.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Calling script PACS_Disable_HK_OBS_Shell.tcl"* *Perform activity and press OK Confirm*	If it is not the correct script, abort test sequence					

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
133.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that OBCP PACS IMMEDIATE OFF has been triggered"* *Perform activity and press OK Confirm*						
134.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that PACS is sending no regular packets any more"* *Perform activity and press OK Confirm*						
135.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"check that CDMU reacts as in OFF MODE transition"* *Perform activity and press OK Confirm*						
136.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Wait until the end of the OBCP (PACS OFF mode and MTL TCs disabled)"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
137.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"RECOVERY ACTION"* *Perform activity and press OK Confirm*						
138.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"Check that PACS is OFF and MTL TCs are disabled"* *Perform activity and press OK Confirm*						
139.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"If still running, please terminate the sequence to keep PACS in SCIENCE"* *Perform activity and press OK Confirm*						
140.	*During* *Z010999MCVT135_IST_PACS_FDIR* *"End of PACS IMMEDIATE OFF TEST* *check that all EATs are enabled"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
141.	*During Z010999MCVT135_IST_PACS_FDIR* *"End of PACS FDIR TEST (PRIMARY) check that all EATs are enabled"* *Perform activity and press OK Confirm*						
142.	*During Z010999MCVT135_IST_PACS_FDIR* *"RESET the starting condition"* *Click YES to Confirm*						
143.	*During Z010999MCVT135_IST_PACS_FDIR* *"Please clear the MTL"* *Click YES to Confirm*						
144.	*At end of Z010999MCVT135_IST_PACS_FDIR* *Click the button "End TS!" to proceed*						

7.5 SPIRE

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
145.	*Call* *Z010999MCVT136_IST_SPIRE_FDIR* *to perform the SPIRE related part of the Instruments FDIR IST*						
146.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"PERFORM SPIRE FDIR TEST (PRIMARY)?"* *Click the YES Confirm*	If NO, exits script			Open NCR's for the SPIRE FDIR OBCP Tests: HP-460000-ASED-NC-3836 (no packet defined for TMs of SPIRE LCLs current)		
147.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"upload dummy MTL with SPIRE connection test in subschedule 370"* *Click the YES Confirm*	Check that OBQ reflects the content of the MTL. 1 ping to SPIRE every 5 minutes for 10 hours. All enabled and running.					
148.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Insert call to SPIRE PING MTL upload"* *Click the YES Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
149.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Please check that SPIRE TCs Release is enabled!"* *Click the YES Confirm*						
150.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Wait for execution of the first command, then press OK"* *Click the YES Confirm*						
151.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Set SCBP to SPIRE Prime (3)"* *Click the YES Confirm*						
152.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"INITIAL S/C STATUS CHECK"* *Click the YES Confirm*	`5.8.13.8`					

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
153.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Put SPIRE Primary in science mode"* *Click the YES Confirm*						
154.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"TEST the SPIRE OPE STOP FDIR?"* *Click the YES Confirm*	If skipped goes to step **Error! Reference source not found.**					
155.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"TRIGGER OBCP WITH START TC"* *Click the YES Confirm*						
156.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"sending EGSE_tcsend_CEV DC4ST185 { DPV32185 370 } { DPV32185 100 }"* *Click the OK to Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
157.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"check that OBCP SPIRE OPE STOP has been triggered"* *Perform activity and press OK Confirm*						
158.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Wait until the end of the OBCP (SPIRE is in SCIENCE mode and MTL TCs disabled)"* *Click the OK to Confirm*						
159.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"RECOVERY ACTION"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
160.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"please check that SPIRE is in SCIENCE mode and MTL TCs disabled"* *Click the OK to Confirm*						
161.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Please run the sequence to put SPIRE in SCIENCE (if science interrupted...) then press OK"* *Click the OK to Confirm*						
162.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"End of SPIRE OPE STOP TEST"* *"check that all EATs are enabled"* *Click the OK to Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
163.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"TEST the SPIRE OPE RESUME FDIR?"* *Click the YES Confirm*	If skipped goes to step 172.					
164.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"TRIGGER OBCP WITH START TC"* *Click the YES Confirm*						
165.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Sending EGSE_tcsend_CEV DC7ST185 { DPV32185 100 }"* *Click the OK to Confirm*						
166.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"check that OBCP SPIRE OPE RESUME has been triggered"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
167.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Wait until the end of the OBCP (SPIRE is in SCIENCE mode and MTL TCs enabled)"* *Click the OK to Confirm*						
168.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"RECOVERY ACTION"* *Perform activity and press OK Confirm*						
169.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"please check that SPIRE is in SCIENCE mode and MTL TCs enabled"* *Click the OK to Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
170.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Please run the sequence to put SPIRE in SCIENCE (if science interrupted...) then press OK"* *Click the OK to Confirm*						
171.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"End of SPIRE OPE STOP TEST"* *"check that all EATs are enabled"* *Click the OK to Confirm*						
172.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"TEST the SPIRE DRCU OFF OBCP?"* *Click the YES Confirm*	If skipped goes to step 180.			Open NCR's for the SPIRE DRCU OFF OBCP: HP-460000-ASED-NC-3835		

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
173.	*During Z010999MCVT136_IST_SPIRE_FDIR* *"TRIGGER OBCP WITH START TC"* *Click the YES Confirm*						
174.	*During Z010999MCVT136_IST_SPIRE_FDIR* *"Sending TC DC2ST185 to start the SPIRE DRCU OFF OBCP"* *Click the OK to Confirm*						
175.	*During Z010999MCVT136_IST_SPIRE_FDIR* *"check that OBCP SPIRE DRCU OFF has been triggered"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
176.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Wait until the end of the OBCP (SPIRE is in SCIENCE mode, DRCU OFF and MTL TCs disabled)"* *Click the OK to Confirm*						
177.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"RECOVERY ACTION"* *Click the YES to Confirm*						
178.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Please check that the SPIRE TCs Release is enabled"* *Click the OK to Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
179.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"End of SPIRE DRCU OFF TEST"* *"check that all EATs are enabled"* *Click the OK to Confirm*						
180.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"TEST the SPIRE OFF CONTROLLED OBCP?"* *Click the YES Confirm*	If skipped goes to step 189.					
181.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"TRIGGER OBCP WITH START TC"* *Click the YES Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
182.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"This OBCP is a TFL, but the command to clear the HK is not given yet, so it will be started by the start cmd"* *Click the YES Confirm*						
183.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Sending TC DC4ST185 {DPV32185 370} {DPV32185 100} to start the SPIRE OFF CTRL OBCP"* *Click the OK to Confirm*						
184.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"check that OBCP SPIRE OFF CONTROLLED has been triggered"* *Perform activity and press OK Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
185.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Wait until the end of the OBCP (SPIRE is OFF and MTL TCs disabled)"* *Click the OK to Confirm*						
186.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"RECOVERY ACTION"* *Click the YES to Confirm*						
187.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Please check that the SPIRE TCs Release is enabled!"* *Click the OK to Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
188.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"End of SPIRE OFF CONTROLLED TEST"* *"check that all EATs are enabled"* *Click the OK to Confirm*						
189.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"TEST the SPIRE OFF DLL OBCP?"* *Click the YES Confirm*	If skipped goes to step					
190.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"SPIRE OFF DLL FDIR triggering* *Click the YES Confirm*						
191.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"please start the SPIRE (RT XX) simulation on the CDMU SCOE to create jamming"* *Click the YES Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
192.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"check that OBCP SPIRE OFF has been triggered (e.g. events, commands directed to SPIRE are being sent and SPIRE is going off)"* *Click the OK to Confirm*						
193.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Wait until the end of the OBCP, when SPIRE is OFF"* *Perform activity and press OK Confirm*						
194.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Wait until the end of the OBCP (SPIRE is OFF and MTL TCs disabled"* *Click the OK to Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
195.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"RECOVERY ACTION"* *Click the YES to Confirm*						
196.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"please check that SPIRE is OFF and INVALID and no HK is being received"* *Click the OK to Confirm*						
197.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"please check that its MTL commands have been disabled"* *Click the OK to Confirm*						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
198.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"Stop the simulation on the CDMU scoe and set the scoe OFF LINE"* *Click the OK to Confirm*						
199.	*During* *Z010999MCVT136_IST_SPIRE_FDIR* *"End of SPIRE OFF CONTROLLED TEST"* *"check that all EATs are enabled"* *Click the OK to Confirm*						
200.	*At end of* *Z010999MCVT136_IST_SPIRE_FDIR* *Click the button "End TS!" to proceed*						

7.6 Specific Post-Test Activities

Step-No.	*Test-Step-Description*	*Nominal Value*	*Tolerance*	*Actual Value*	*Remarks*	*P*	*N*
10.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"RESET to the original SCBP?"* Click the YES to Confirm						
20.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"DUMP CEL CONTENT?"* *Click the YES to Confirm*						
30.	*During* *Z010999MCVT131_IST_INSTR_FDIR* *"Bring the S/C into a SAFE mode and switch OFF"* Click the YES to Confirm	IST_END script is running. This is going to give user dialogs in case services are not properly stopped. Confirm the suggested corrective actions					
40.	**IN PARALLEL:** **A102109SPVT003_ACMS_CONFIG25** At prompt:	2 Continue					

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
	HERSCHEL/PLANCK - MAIN MENU 5.0 - SCM PHASE select option 2. Transition to OCM						
50.	**A102109SPVT003_ACMS_CONFIG25** Click the button “CONTINUE” to proceed	OK					
60.	**A102109SPVT003_ACMS_CONFIG25** At prompt: HERSCHEL/PLANCK - MAIN MENU 7.0 - OCM PHASE select option 5. RWL Spin Down to 0 Nms in OCM (BiasHold)	5 continue					
70.	**A102109SPVT003_ACMS_CONFIG25** Click the button “CONTINUE” to proceed	OK					
80.	**A102109SPVT003_ACMS_CONFIG25** At prompt: HERSCHEL/PLANCK - MAIN MENU 7.0 - OCM PHASE select option 99 Terminate ACMS_CONFIG	99 continue					

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
90.	**A102109SPVT003_ACMS_CONFIG25** Click the button “CONTINUE” to proceed	OK					
100.	**A102109SPVT003_ACMS_CONFIG25** At prompt: HERSCHEL/PLANCK - MAIN MENU 9.0 - ACMS OFF PHASE Select option 1. Switch Off ACMS	1 continue					
110.	**A102109SPVT003_ACMS_CONFIG25** Click the button “CONTINUE” to proceed	OK					

7.7 S/C Power OFF

Follow the steps in the power OFF procedure of AD-4.

8 ANNEX

8.1 Master Tcl script

```
######################################################################
# File: $Id: Z010999MCVT131_IST_INSTR_FDIR.tcl,v 1.4 2007/11/26 10:18:41 hercdmu Exp $
#
# Description:
#
# Uwe Klenke on 2007/12/06: Master script for the Instruments FDIR IST
#                           It switches the S/C and instruments ON and OFF
#
#
# Last edited by: $Author: hercdmu $ on $Date: 2007/11/26 10:18:41 $.
#
#
######################################################################

# automatically set the revision. do not edit this
setrevision {$Id: Z010999MCVT131_IST_INSTR_FDIR.tcl,v 1.4 2007/11/26 10:18:41 hercdmu Exp $}

######################################################################
# start of test sequence
######################################################################




EGSE_init

global ambient
global user_gen
global sequence_to_manage
global sequence_success
global sequence_not_found
global sequence_to_manage
```

```
set local_script_name "Z010999MCVT131_IST_INSTR_FDIR"
set logfile $env(HPCCSTESTRES)/USER/[gettime]_Z010999MCVT094_IST_DTCP_CDMS_MANAGM

# TCL SEQUENCE DEFINITION...

setup_win
logm "************************************************************"
yesorno "START HERSCHEL INSTRUMENTS FDIR, SECTION 5.8.13 "
logm "************************************************************"
waittime 00.00.01.0000

if { $user_gen == 5 } {
} elseif { $user_gen == 4 } {
        waittime 00.00.02.0000
        exit
}


logm "*****************************************************************************"
logm "* Start of the section 5.8.13 - INSTRUMENTS FDIR"
logm "*****************************************************************************"


newTest_gen "POWER ON S/C and configure for ALL A)? - (SKIP if S/C already on and configured by CMDS MGMNT"
menuTB
if { $user_gen == 8 } {


# ********************************************************************************************
        newTest_gen "POWER ON S/C AND BRING THE S/C TO END OF LAUNCH"
        menuTB
        if { $user_gen == 8 } {
                call Z010999MCVT003_IST_START 5.8.13.6
                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

# ********************************************************************************************
        newTest_gen "CDMS SETTING FOR SEPARATION"
        menuTB
```

```
        if { $user_gen == 8 } {
        #commented out only for DEBUG, since ACMS will be off:      callasync A102109SPVT202_ACMS_STATUS_H
                call D102159SCVT138_IST_LAUNCH_SUNACQ
                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

# ********************************************************************************************
        newTest_gen "TRANSITION TO NOMINAL"
        menuTB
        if { $user_gen == 8 } {
                call D102159SCVT137_IST_SUNACQ_NOM
                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }


# ********************************************************************************************
        newTest_gen "TRANSITION FROM SAS 900W AND BS 24V TO SAS 1475W AND BS FULL CHARGED"
        menuTB
        if { $user_gen == 8 } {

                call W102584SPVT101_PCDU_TRANSITION_FDIR 1
                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

# ********************************************************************************************
        newTest_gen "SWITCH ON SREM AND START ACQUISITION SERVICE"
        menuTB
        if { $user_gen == 8 } {
                call Z102999SCVT001_SREM_ON  60
                waittime 00.02.00

        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
```

```
                exit
        }


# ********************************************************************************************
        logm "End of SKIPPABLE S/C configuration for the Instruments FDIR test"
        waittime 00.02.00
} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}

# ********************************************************************************************

logm "*****************************************************************"
logm "Start of Instruments FDIR specific configuration"
logm "*****************************************************************"

        newTest_gen "SAVING ORIGINAL SCBP"
        menuTB
        if { $user_gen == 8 } {

        set FirstBP [ getrawvalue [fetch DEF5F160 ] ]
        logm "Saving current bus profile $FirstBP to variable FirstBP"

        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

# ********************************************************************************************
        newTest_gen "UPLOAD OBCP and EAT for PRIMARY"
        menuTB
        if { $user_gen == 8 } {


                logm " "
                logm " Calling external sequence to Upload OBCP and EAT "
                logm " "
                call D102159SCVT193_IST_UPLOAD_OBCP
```

```
                infom "Please upload only the EAT entries for PRIMARY"
                call D102159SCVT192_IST_UPLOAD_EAT
                waittime 00.02.00

        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }
# ********************************************************************************************
        newTest_gen "Clear MTL and start ON BOARD SCHEDULING?"
        menuTB
        if { $user_gen == 8 } {

        infom "If MTL already filled in by previous tests, please clear it, then press OK!!!!!"

       logm "Check the following TM : - MtlSts = Stopped "
       if { [ getengvalue [ fetch DEH26170] ] == "Stopped" } then {

                 logm "Sending Telecommand DC90F170 Description: StartOnBoardSched"
                 EGSE_tcsend_CEV DC90F170 checks { SPTV DPTV CEV }  ack { ACCEPT COMPLETE  }
                 waittime +00.00.01.000000

        } else {

        logm "MtlSts is already running"

        }

                logm " "
                logm " Disabling Release of All SubSched TCs"
                logm " "
                EGSE_tcsend_CEV DC76F170


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

# ********************************************************************************************
                  newTest_gen "POWER ON HIFI PRIMARY"
```

```
                menuTB
                if { $user_gen == 8 } {

                        call Z102999SCVT014_ASDGEN_HIFIPWRON_P
                        waittime 00.00.02.0000

                        waittime 00.02.00
                } elseif { $user_gen == 10 } {
                        waittime 00.00.01.0000
                        exit
                }

# ********************************************************************************************


        newTest_gen "POWER ON PACS PRIMARY"
        menuTB
        if { $user_gen == 8 } {

                logm " "
                call Z102999SCVT010_ASDGEN_PACSPWRON_P
                waittime 00.00.02.0000

        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

# ********************************************************************************************


        newTest_gen "POWER ON SPIRE PRIMARY"
        menuTB
        if { $user_gen == 8 } {

                logm " "
                call Z102999SCVT004_ASDGEN_SPIREPWRON_P
                waittime 00.00.02.0000

        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
```

```
        }

logm "*****************************************************************"
logm "End of Instruments FDIR specific configuration"
logm "*****************************************************************"



# ***********************************************************************************************

        infom "Select OK to switch off when FDIR OBCP activities are complete"


# ***********************************************************************************************

 logm "***********************************************************************************************"
 logm "End of INSTRUMENTS FDIR TESTS"
 infom "check that all EATs are enabled"
 logm "***********************************************************************************************"

  waittime 00.00.02.0000

# ***********************************************************************************************
  newTest_gen "RESET to the original SCBP?"
  menuTB
        if { $user_gen == 8 } {

                logm "Set bus profile back to original setting"
                EGSE_trace_TC DC819160
                tcsend DC819160 [list DH049160 $FirstBP]
                waittime 1

                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                  waittime 00.00.01.0000
                  exit
        }


# ***********************************************************************************************
        newTest_gen "DUMP CEL CONTENT?"
```

```
	menuTB
	if { $user_gen == 8 } {

		infom "call the CEL downlink sequence"

		waittime 00.02.00
	} elseif { $user_gen == 10 } {
		waittime 00.00.01.0000
		exit
	}

# ********************************************************************************************
	newTest_gen "BRING THE S/C INTO A SAFE MODE AND SWITCH OFF"
	menuTB
	if { $user_gen == 8 } {
		call Z010999MCVT004_IST_END
		waittime 00.02.00
	} elseif { $user_gen == 10 } {
		waittime 00.00.01.0000
		exit
	}

# ********************************************************************************************

finish_TS

EGSE_finish

#####################################################################
# end of test sequence
#####################################################################
# Changes:
# $Log: Z010999MCVT131_IST_INSTR_FDIR.tcl,v $
# Revision 1.4  2007/11/26 10:18:41  hercdmu
# reorganised the sequence of the test steps
#
# Revision 1.3  2007/10/26 14:05:18  hercdmu
# still to clarify TCs to start obcps and end/final state of instruments in some cases"
#
# Revision 1.2  2007/10/19 11:59:20  hercdmu
# hifi fdir
#
```

```
# Revision 1.1  2007/10/15 09:24:52  hercdmu
# initial version
#
#
######################################################################
```

8.2 HIFI Tcl script

```
######################################################################
# File: $Id: Z010999MCVT134_IST_HIFI_FDIR.tcl,v 1.1 2007/12/06 02:39:09 hercdmu Exp $
#
# Description:
#
# Uwe Klenke 2007/12/06: performs the HIFI part of the Instruments FDIR IST
#
#
# Last edited by: $Author: hercdmu $ on $Date: 2007/12/06 02:39:09 $.
#
#
######################################################################

# automatically set the revision. do not edit this
setrevision {$Id: Z010999MCVT134_IST_HIFI_FDIR.tcl,v 1.1 2007/12/06 02:39:09 hercdmu Exp $}

######################################################################
# start of test sequence
######################################################################


EGSE_init

global ambient
global user_gen
global sequence_to_manage
global sequence_success
global sequence_not_found
global sequence_to_manage

set local_script_name "Z010999MCVT134_IST_HIFI_FDIR"
set logfile $env(HPCCSTESTRES)/USER/[gettime]_Z010999MCVT094_IST_DTCP_CDMS_MANAGM

# TCL SEQUENCE DEFINITION...

setup_win

# ********************************************************************************
```

```
newTest_gen "Perform HIFI FDIR PRIMARY?"
menuTB
if { $user_gen == 8 } {

	# ********************************************************************************************
		newTest_gen "upload dummy MTL with HIFI connection test in subschedule 70"
		menuTB
		if { $user_gen == 8 } {

			logm "Uploading MTL for pinging HIFI subschedule ID 70"
			infom "Insert call to HIFI PING MTL upload"

			logm "Enabling HIFI subchedule ID in MTL"
			EGSE_tcsend_CEV DC63F159

			infom "Wait for execution of the first command, then press OK"
			waittime 00.02.00
		} elseif { $user_gen == 10 } {
			waittime 00.00.01.0000
			exit
		}
	# ********************************************************************************************
		newTest_gen "Set SCBP to HIFI Prime (2)"
		menuTB
		if { $user_gen == 8 } {

			logm "Changing SCBP to HIFI prime (2)"
			set EGSE_trace_TC DC819160
			tcsend DC819160 { DH049160 2 }
			ver_send_raw " " "DEF5F160" "2" "2" "FALSE" " "
			waittime 00.02.00
		} elseif { $user_gen == 10 } {
			waittime 00.00.01.0000
			exit
		}

	# ********************************************************************************************
		newTest_gen "INITIAL S/C STATUS CHECK"
		menuTB
	if { $user_gen == 8 } {
		call Z010999MCVT153_IST_STATUS 5.8.13.6
```

```
        waittime 00.02.00
} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}

# ********************************************************************************************
          newTest_gen "Put HIFI Primary in science mode "
          menuTB
          if { $user_gen == 8 } {

                  logm "Putting HIFI in science mode"
                  infom "Insert call to science mode sequence"

                  waittime 00.02.00
          } elseif { $user_gen == 10 } {
                  waittime 00.00.01.0000
                  exit
          }

# ********************************************************************************************

newTest_gen "Perform HIFI RESET OBCP (DLL)?"
menuTB
if { $user_gen == 8 } {


        # ********************************************************************************************
                newTest_gen "HIFI RESET DLL FDIR triggering"
                menuTB
                if { $user_gen == 8 } {


                  infom "please start the HIFI (RT XX) simulation on the CDMU SCOE to create jamming"
                  infom "check that OBCP HIFI_RESET has been triggered (e.g. events, commands directed to HIFI are being sent and HIFI is going
off)"
                  infom "Wait until the end of the OBCP, when HIFI is OFF"

                  waittime 00.00.02.0000

                  waittime 00.02.00
                } elseif { $user_gen == 10 } {
```

```
              waittime 00.00.01.0000
              exit
            }


        # ********************************************************************************************
            newTest_gen "RECOVERY ACTION"
            menuTB
            if { $user_gen == 8 } {


              infom "please check that HIFI is OFF and INVALID and no HK is being received"
              waittime 00.00.02.0000
              infom "please check that the MTL commands of the corresponding subschedule have been disabled"
              waittime 00.00.02.0000
              infom "Stop the simulation on the CDMU scoe and set the scoe OFF LINE"
              waittime 00.00.02.0000

              waittime 00.02.00
            } elseif { $user_gen == 10 } {
              waittime 00.00.01.0000
              exit
            }


# ********************************************************************************************

logm "********************************************************************************************"
logm "End of HIFI RESET OBCP (DLL)"
infom "check that all EATs are enabled"
logm "********************************************************************************************"

# ********************************************************************************************

       waittime 00.02.00
} elseif { $user_gen == 10 } {
       waittime 00.00.01.0000
       exit
}

newTest_gen "RESET starting conditions"
menuTB
```

```
        if { $user_gen == 8 } {

                infom "Please clear the MTL"
                waittime 00.00.02.0000
                logm " "

                logm " "
                logm " Disabling Release of All SubSched TCs"
                logm " "
                EGSE_tcsend_CEV DC76F170

                logm "HIFI is being turned on again"
                call Z102999SCVT014_ASDGEN_HIFIPWRON_P
                waittime 00.00.02.0000


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

logm "*********************************************************************************"
logm "End of HIFI FDIR TEST"
infom "check that all EATs are enabled"
logm "*********************************************************************************"



        waittime 00.02.00
} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}
# ***************************************************************************************************
# ***************************************************************************************************
# ******************************** - END OF HIFI FDIR - ***********************************
# ***************************************************************************************************
# ***************************************************************************************************
# ***************************************************************************************************
```

```
finish_TS

EGSE_finish


#####################################################################
# end of test sequence
#####################################################################
# Changes:
# $Log: Z010999MCVT134_IST_HIFI_FDIR.tcl,v $
# Revision 1.1  2007/12/06 02:39:09  hercdmu
# initial version
#
#
#####################################################################
```

8.3 PACS Tcl script

```
######################################################################
# File: $Id: Z010999MCVT135_IST_PACS_FDIR.tcl,v 1.1 2007/12/06 02:40:14 hercdmu Exp $
#
# Description:
#
# Uwe Klenke 2007/12/06: performs the PACS part of the Instruments FDIR IST
#
#
# Last edited by: $Author: hercdmu $ on $Date: 2007/12/06 02:40:14 $.
#
#
######################################################################

# automatically set the revision. do not edit this
setrevision {$Id: Z010999MCVT135_IST_PACS_FDIR.tcl,v 1.1 2007/12/06 02:40:14 hercdmu Exp $}

######################################################################
# start of test sequence
######################################################################


EGSE_init

global ambient
global user_gen
global sequence_to_manage
global sequence_success
global sequence_not_found
global sequence_to_manage

set local_script_name "Z010999MCVT135_IST_PACS_FDIR"
set logfile $env(HPCCSTESTRES)/USER/[gettime]_Z010999MCVT094_IST_DTCP_CDMS_MANAGM

# TCL SEQUENCE DEFINITION...

setup_win
```

```
# ********************************************************************************************
# ********************************************************************************************
# ****************************** - START OF PACS FDIR - ***************************************
# ********************************************************************************************
# ********************************************************************************************
# ********************************************************************************************


# ********************************************************************************************
newTest_gen "PERFORM PACS FDIR TEST (PRIMARY)?"
menuTB
if { $user_gen == 8 } {


        # ********************************************************************************************
        newTest_gen "upload and enable dummy MTL with PACS connection test in subschedule 90"
        menuTB
        if { $user_gen == 8 } {

                logm "Uploading MTL for pinging PACS subschedule ID 90"
                infom "Insert call to PACS PING MTL upload"

                logm "Enabling Release of PACS MTL TCs"
                EGSE_tcsend_CEV DC65F159

                infom "Wait for execution of the first command, then press OK"
                waittime 00.02.00

        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

        # ********************************************************************************************
        newTest_gen "Set SCBP to PACS Prime (4)"
        menuTB
        if { $user_gen == 8 } {

                logm "Changing SCBP to PACS Prime (4)"
                set EGSE_trace_TC DC819160
                tcsend DC819160 { DH049160 4 }
```

```
        ver_send_raw " " "DEF5F160" "4" "4" "FALSE" " "
        waittime 00.02.00
} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}

# ********************************************************************************************
newTest_gen "INITIAL S/C STATUS CHECK"
menuTB
if { $user_gen == 8 } {
        call Z010999MCVT153_IST_STATUS 5.8.13.7
        waittime 00.02.00
} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}


# ********************************************************************************************

newTest_gen "PUT PACS IN SCIENCE"
menuTB
if { $user_gen == 8 } {

      logm " "
        infom "Please run in parallel the sequence to put PACS in SCIENCE for 1h"

        waittime 00.00.02.0000
} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}

# ********************************************************************************************
newTest_gen "TEST the PACS SAFE FDIR?"
menuTB
if { $user_gen == 8 } {


        # ********************************************************************************************
                newTest_gen "Execute PACS SCRIPT FOR AUTONOMY FUNCTION 14?"
```

```
	menuTB
	if { $user_gen == 8 } {

		infom "Calling script PACS_StartAutonomy_Function_14_OBS_Shell.tcl"
		callasync PACS_StartAutonomy_Function_14_OBS_Shell

		infom "check that OBCP PACS_SAFE has been triggered"
		waittime 00.00.02.0000
		infom "check that PACS is sending 3 event packets TM(5,2) -cooler recycling temp expired"
		waittime 00.00.02.0000
		infom "check that CDMU reacts as in SAFE MODE transition"
		waittime 00.00.02.0000
		infom "check that BOL_T_FPU is disabled again"
		waittime 00.00.02.0000
		infom "Wait until the end of the OBCP (PACS is in SAFE mode and MTL TCs disabled)"

		waittime 00.00.02.0000

		waittime 00.02.00
	} elseif { $user_gen == 10 } {
		waittime 00.00.01.0000
		exit
	}


# ********************************************************************************************
	newTest_gen "RECOVERY ACTION"
	menuTB
	if { $user_gen == 8 } {


		infom "please check that PACS is in SAFE mode and that its MTL commands have been disabled"
		waittime 00.00.02.0000
		infom "If still running, please terminate the sequence to keep PACS in SCIENCE"
		logm "Enabling Release of PACS MTL TCs"
		EGSE_tcsend_CEV DC65F159
		waittime 00.00.02.0000
		infom "Please check that PACS TCs Release is enabled!"
		waittime 00.02.00

		logm " "
		logm "Changing SCBP to PACS Prime (4)"
```

```
                set EGSE_trace_TC DC819160
                tcsend DC819160 { DH049160 4 }
                ver_send_raw " " "DEF5F160" "4" "4" "FALSE" " "
                waittime 00.02.00

                infom "Please run in parallel the sequence to put PACS in SCIENCE for 1h"
                waittime 00.00.02.0000


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }


        # ********************************************************************************************

        logm "********************************************************************************************"
        logm "End of PACS SAFE OBCP TEST"
        infom "check that all EATs are enabled"
        logm "********************************************************************************************"


        waittime 00.02.00
} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}

# ********************************************************************************************
# ********************************************************************************************
# ******************************** - END OF PACS SAFE OBCP - *********************************
# ********************************************************************************************
# ********************************************************************************************



# ********************************************************************************************
newTest_gen "TEST the PACS POWER CYCLE OBCP?"
menuTB
if { $user_gen == 8 } {
```

```
waittime 00.02.00

# ********************************************************************************************
        newTest_gen "TRIGGER OBCP WITH START TC"
        menuTB
        if { $user_gen == 8 } {

                logm "Sending TC DCAST185 to start the PACS_POWER_CYCLE_OBCP"
                infom "sending EGSE_tcsend_CEV DCAST185 { DPV32185 90 } { DPV32185 'NOMINAL' ENG}"
                EGSE_tcsend_CEV DCAST185 { DPV32185 90 } { DPV32185 "NOMINAL" ENG}
                waittime 00.00.02.0000


                infom "check that OBCP PACS_POWER_CYCLE has been triggered"
                waittime 00.00.02.0000
                infom "Wait until the end of the OBCP (PACS is in SAFE mode and MTL TCs disabled)"


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }


# ********************************************************************************************
        newTest_gen "RECOVERY ACTION"
        menuTB
        if { $user_gen == 8 } {


                infom "please check that PACS is in SAFE mode and that its MTL commands have been disabled"
                waittime 00.00.02.0000
                infom "if still running, please terminate the sequence to keep PACS in SCIENCE"
                logm "Enabling Release of PACS MTL TCs"
                waittime 00.00.02.0000
                EGSE_tcsend_CEV DC65F159
                waittime 00.00.02.0000
                infom "Please check that the PACS TCs Release is enabled!"
                waittime 00.02.00
```

```
                logm " "
                logm "Changing SCBP to PACS Prime (4)"
                set EGSE_trace_TC DC819160
                tcsend DC819160 { DH049160 4 }
                ver_send_raw " " "DEF5F160" "4" "4" "FALSE" " "
                waittime 00.02.00


                logm " "
                infom "Please run in parallel the sequence to put PACS in SCIENCE for 1h"
                waittime 00.00.02.0000


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }


        # ********************************************************************************************

        logm "********************************************************************************************"
        logm "End of PACS POWER CYCLE TEST"
        infom "check that all EATs are enabled"
        logm "********************************************************************************************"

        waittime 00.00.02.0000

# ************************************************************************************************

} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}


# ************************************************************************************************
# ************************************************************************************************
# ****************************** - END OF PACS POWER CYCLE OBCP - ***************************
# ************************************************************************************************
# ************************************************************************************************
```

```
# ********************************************************************************************
newTest_gen "TEST PACS BOLC OFF OBCP?"
menuTB
if { $user_gen == 8 } {

        waittime 00.02.00


        # ********************************************************************************************
                newTest_gen "TRIGGER OBCP WITH START TC"
                menuTB
                if { $user_gen == 8 } {


                        logm "Sending TC DC9ST185 to start the PACS_BOLC_OFF OBCP"
                        infom "Sending EGSE_tcsend_CEV DC9ST185 { DPV32185 90 }"
                        EGSE_tcsend_CEV DC9ST185 { DPV32185 90 }
                        waittime 00.00.02.0000


                        infom "check that OBCP PACS BOLC OFF has been triggered"
                        waittime 00.00.02.0000
                        infom "Wait until the end of the OBCP (PACS is in SAFE mode and MTL TCs disabled)"

                        waittime 00.00.02.0000

                        waittime 00.02.00
                } elseif { $user_gen == 10 } {
                        waittime 00.00.01.0000
                        exit
                }


        # ********************************************************************************************
                newTest_gen "RECOVERY ACTION"
                menuTB
                if { $user_gen == 8 } {
```

```
        infom "please check that PACS is in SAFE mode and that its MTL commands have been disabled"
        waittime 00.00.02.0000
        infom "If still running, please terminate the sequence to keep PACS in SCIENCE"
        logm "Enabling Release of PACS MTL TCs"

        logm " "
        logm "switching PACS OFF"
        call Z102999SCVT011_ASDGEN_PACSPWROFF_P
        waittime 00.00.02.0000

        logm " "
        logm "switching PACS ON"
        call Z102999SCVT010_ASDGEN_PACSPWRON_P

        logm "Enabling Release of PACS MTL TCs"
        EGSE_tcsend_CEV DC65F159
        waittime 00.00.02.0000
        infom "Please check that only the PACS TCs Release is enabled!"
        waittime 00.02.00

        logm " "
        logm "Changing SCBP to PACS Prime (4)"
        set EGSE_trace_TC DC819160
        tcsend DC819160 { DH049160 4 }
        ver_send_raw " " "DEF5F160" "4" "4" "FALSE" " "
        waittime 00.02.00


        logm " "
        infom "Please run in parallel the sequence to put PACS in SCIENCE for 1h"
        waittime 00.00.02.0000


        waittime 00.02.00
} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}
```

```
		# ********************************************************************************************

		logm "********************************************************************************************"
		logm "End of PACS BOLC OFF TEST"
		infom "check that all EATs are enabled"
		logm "********************************************************************************************"

		waittime 00.00.02.0000

	} elseif { $user_gen == 10 } {
		waittime 00.00.01.0000
		exit
	}


# ********************************************************************************************
# ********************************************************************************************
# ****************************** - END OF PACS BOLC OFF OBCP - ******************************
# ********************************************************************************************
# ********************************************************************************************

	# ********************************************************************************************
	newTest_gen "PACS NORMAL OFF OBCP"
	menuTB
	if { $user_gen == 8 } {

		waittime 00.02.00


		# ********************************************************************************************
			newTest_gen "Execute PACS SCRIPT FOR AUTONOMY FUNCTION 17?"
			menuTB
			if { $user_gen == 8 } {

				infom "Calling script PACS_StartAutonomy_Function_17_OBS_Shell.tcl"
				waittime 00.00.02.0000

				callasync PACS_StartAutonomy_Function_17_OBS_Shell
				waittime 00.00.02.0000

				infom "check that OBCP PACS_NORMAL_OFF has been triggered"
```

```
            waittime 00.00.02.0000
            infom "check that PACS is sending event packets TM(5,2) - BOLC power violated"
            waittime 00.00.02.0000
            infom "check that CDMU reacts as in OFF MODE transition"
            waittime 00.00.02.0000
            infom "Wait until the end of the OBCP (PACS OFF mode and MTL TCs disabled)"
            waittime 00.00.02.0000

            waittime 00.02.00
        } elseif { $user_gen == 10 } {
            waittime 00.00.01.0000
            exit
        }


# ********************************************************************************************
        newTest_gen "RECOVERY ACTION"
        menuTB
        if { $user_gen == 8 } {

            infom "Check that PACS is OFF and MTL TCs are disabled"
            waittime 00.00.02.0000

            infom "If still running, please terminate the sequence to keep PACS in SCIENCE"
            logm "Enabling Release of PACS MTL TCs"

            logm " "
            logm "switching PACS ON"
            call Z102999SCVT010_ASDGEN_PACSPWRON_P

            logm "Enabling Release of PACS MTL TCs"
            EGSE_tcsend_CEV DC65F159
            waittime 00.00.02.0000
            infom "Please check that only the PACS TCs Release is enabled!"
            waittime 00.02.00

            logm " "
            logm "Changing SCBP to PACS Prime (4)"
            set EGSE_trace_TC DC819160
            tcsend DC819160 { DH049160 4 }
            ver_send_raw " " "DEF5F160" "4" "4" "FALSE" " "
            waittime 00.02.00
```

```
                logm " "
                infom "Please run in parallel the sequence to put PACS in SCIENCE for 1h"
                waittime 00.00.02.0000


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }


# ********************************************************************************************

        logm "********************************************************************************************"
        logm "End of PACS NORMAL OFF TEST"
        infom "check that all EATs are enabled"
        logm "********************************************************************************************"

   waittime 00.00.02.0000



} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}



# ********************************************************************************************
# ********************************************************************************************
# ******************************** - END OF PACS NORMAL OFF OBCP - ****************************
# ********************************************************************************************
# ********************************************************************************************
```

```
# ***********************************************************************************************
newTest_gen "PACS IMMEDIATE OFF OBCP?"
menuTB
if { $user_gen == 8 } {

        waittime 00.02.00

        # ***********************************************************************************************
                newTest_gen "Execute PACS SCRIPT FOR CLEARING HK (WARM TBC)?"
                menuTB
                if { $user_gen == 8 } {

                        infom "Calling script PACS_Disable_HK_OBS_Shell.tcl"
                        callasync PACS_Disable_HK_OBS_Shell
                        waittime 00.00.02.0000

                        infom "check that OBCP PACS IMMEDIATE OFF has been triggered"
                        waittime 00.00.02.0000
                        infom "check that PACS is sending no regular packets any more"
                        waittime 00.00.02.0000
                        infom "check that CDMU reacts as in OFF MODE transition"
                        waittime 00.00.02.0000
                        infom "Wait until the end of the OBCP (PACS OFF mode and MTL TCs disabled)"

                        waittime 00.00.02.0000

                        waittime 00.02.00
                } elseif { $user_gen == 10 } {
                        waittime 00.00.01.0000
                        exit
                }


        # ***********************************************************************************************
                newTest_gen "RECOVERY ACTION"
                menuTB
                if { $user_gen == 8 } {

                        infom "Check that PACS is OFF and MTL TCs are disabled"
                        waittime 00.00.02.0000
                        infom "If still running, please terminate the sequence to keep PACS in SCIENCE"
```

```
                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }



        # ********************************************************************************************

        logm "********************************************************************************************"
        logm "End of PACS IMMEDIATE OFF TEST"
        infom "check that all EATs are enabled"
        logm "********************************************************************************************"

        waittime 00.00.02.0000


} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}



# ********************************************************************************************
# ********************************************************************************************
# ******************************** - END OF PACS IMMEDIATE OFF OBCP - ************************
# ********************************************************************************************
# ********************************************************************************************

logm "********************************************************************************************"
logm "End of PACS FDIR TEST (PRIMARY)"
infom "check that all EATs are enabled"
logm "********************************************************************************************"

waittime 00.00.02.0000
```

```
        # ********************************************************************************************
        newTest_gen "RESET the starting condition"
        menuTB
        if { $user_gen == 8 } {

                infom "Please clear the MTL"
                waittime 00.00.02.0000

                logm " "
                logm " Disabling Release of All SubSched TCs"
                logm " "
                EGSE_tcsend_CEV DC76F170

                logm " "
                logm "PACS is being turned on again"
                call Z102999SCVT010_ASDGEN_PACSPWRON_P
                waittime 00.00.02.0000

                logm " "
                logm "switching PACS ON"
                call Z102999SCVT010_ASDGEN_PACSPWRON_P
                waittime 00.00.02.0000


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }
        # ********************************************************************************************

} elseif { $user_gen == 10 } {
  waittime 00.00.01.0000
  exit
}


# ********************************************************************************************
# ********************************************************************************************
# ******************************** -        END OF PACS FDIR        - ************************
# ********************************************************************************************
# ********************************************************************************************
```

```
# ***************************************************************************************************
# ***************************************************************************************************


finish_TS

EGSE_finish



#####################################################################
# end of test sequence
#####################################################################
# Changes:
# $Log: Z010999MCVT135_IST_PACS_FDIR.tcl,v $
# Revision 1.1  2007/12/06 02:40:14  hercdmu
# initial version
#
#
#####################################################################
```

8.4 SPIRE Tcl script

```
######################################################################
# File: $Id: Z010999MCVT136_IST_SPIRE_FDIR.tcl,v 1.1 2007/12/06 02:41:55 hercdmu Exp $
#
# Description:
#
# Uwe Klenke 2007/12/06: performs the SPIRE part of the Instruments FDIR IST
#
#
# Last edited by: $Author: hercdmu $ on $Date: 2007/12/06 02:41:55 $.
#
#
######################################################################

# automatically set the revision. do not edit this
setrevision {$Id: Z010999MCVT136_IST_SPIRE_FDIR.tcl,v 1.1 2007/12/06 02:41:55 hercdmu Exp $}

######################################################################
# start of test sequence
######################################################################


EGSE_init

global ambient
global user_gen
global sequence_to_manage
global sequence_success
global sequence_not_found
global sequence_to_manage

set local_script_name "Z010999MCVT136_IST_SPIRE_FDIR"
set logfile $env(HPCCSTESTRES)/USER/[gettime]_Z010999MCVT094_IST_DTCP_CDMS_MANAGM

# TCL SEQUENCE DEFINITION...

setup_win

# ********************************************************************************************
```

```
# ********************************************************************************************
# ******************************** -       START OF SPIRE FDIR        - ***********************
# ********************************************************************************************
# ********************************************************************************************
# ********************************************************************************************
# ********************************************************************************************

newTest_gen "PERFORM SPIRE FDIR TEST (PRIMARY)?"
menuTB
if { $user_gen == 8 } {


        # ********************************************************************************************
        newTest_gen "upload and enable dummy MTL with SPIRE connection test in subschedule 370"
        menuTB
        if { $user_gen == 8 } {

                logm "Uploading MTL for pinging SPIRE subschedule ID 370"
                infom "Insert call to SPIRE PING MTL upload"

                logm "Enabling Release of SPIRE MTL TCs"
                EGSE_tcsend_CEV DC67F159
                waittime 00.00.02.0000
                infom "Please check that SPIRE TCs Release is enabled!"

                infom "Wait for execution of the first command, then press OK"
                waittime 00.02.00

        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

        # ********************************************************************************************
        newTest_gen "Set SCBP to SPIRE Prime (3)"
        menuTB
        if { $user_gen == 8 } {

                logm "Changing SCBP to PACS Prime (3)"
                set EGSE_trace_TC DC819160
                tcsend DC819160 { DH049160 3 }
```

```
        ver_send_raw " " "DEF5F160" "3" "3" "FALSE" " "
        waittime 00.02.00

} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}

# ********************************************************************************************
newTest_gen "INITIAL S/C STATUS CHECK"
menuTB
if { $user_gen == 8 } {
        call Z010999MCVT153_IST_STATUS 5.8.13.8
        waittime 00.02.00
} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}


# ********************************************************************************************

newTest_gen "PUT SPIRE IN SCIENCE"
menuTB
if { $user_gen == 8 } {

        logm " "
        infom "Calling the sequence to put SPIRE in SCIENCE"
        call S102999SCVT015_ASDISTSPIR_STBY2PHOT
        waittime 00.00.02.0000

} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}


# ********************************************************************************************
newTest_gen "TEST the SPIRE OPE STOP FDIR?"
menuTB
if { $user_gen == 8 } {
```

```
# ********************************************************************************************
        newTest_gen "TRIGGER OBCP WITH START TC"
        menuTB
        if { $user_gen == 8 } {
                infom "sending EGSE_tcsend_CEV DC4ST185 { DPV32185 370 } { DPV32185 100 }"
                logm "Sending TC DCAST185 to start the SPIRE OPE STOP OBCP"
                EGSE_tcsend_CEV DC4ST185 { DPV32185 370 } { DPV32185 100 }
                waittime 00.00.02.0000

                infom "check that OBCP SPIRE OPE STOP  has been triggered"
                waittime 00.00.02.0000
                infom "Wait until the end of the OBCP (SPIRE is in SCIENCE mode and MTL TCs disabled)"

                waittime 00.00.02.0000

                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }


# ********************************************************************************************
        newTest_gen "RECOVERY ACTION"
        menuTB
        if { $user_gen == 8 } {


                infom "please check that SPIRE is in SCIENCE mode and MTL TCs disabled"
                waittime 00.00.02.0000

                logm " "
                infom "Please run the sequence to put SPIRE in SCIENCE (if science interrupted...) then press OK"


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }
```

```
		# ********************************************************************************************

		logm "********************************************************************************************"
		logm "End of SPIRE OPE STOP TEST"
		infom "check that all EATs are enabled"
		logm "********************************************************************************************"

		waittime 00.00.02.0000

	# ********************************************************************************************

	} elseif { $user_gen == 10 } {
		waittime 00.00.01.0000
		exit
	}


# ********************************************************************************************
# ********************************************************************************************
# ****************************** - END OF SPIRE OPE STOP OBCP - ************************
# ********************************************************************************************
# ********************************************************************************************


	# ********************************************************************************************
	newTest_gen "TEST SPIRE OPE RESUME OBCP?"
	menuTB
	if { $user_gen == 8 } {

		waittime 00.02.00


		# ********************************************************************************************
			newTest_gen "TRIGGER OBCP WITH START TC"
			menuTB
			if { $user_gen == 8 } {

				infom "Sending EGSE_tcsend_CEV DC7ST185 { DPV32185 100 }"
				logm "Sending TC DC7ST185 to start the SPIRE OPE RESUME OBCP"
				EGSE_tcsend_CEV DC7ST185 { DPV32185 100 }
```

```
                waittime 00.00.02.0000

                infom "check that OBCP SPIRE OPE RESUME has been triggered"
                waittime 00.00.02.0000
                infom "Wait until the end of the OBCP (SPIRE is in SCIENCE mode and MTL TCs enabled)"

                waittime 00.00.02.0000

                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }

# ********************************************************************************************
        newTest_gen "RECOVERY ACTION"
        menuTB
        if { $user_gen == 8 } {

                infom "please check that SPIRE is in SCIENCE mode and MTL TCs enabled"
                waittime 00.00.02.0000

                logm " "
                infom "Please run the sequence to put SPIRE in SCIENCE (if science interrupted) then press OK"
                waittime 00.00.02.0000


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }



# ********************************************************************************************

        logm "********************************************************************************************"
        logm "End of SPIRE OPE RESUME TEST"
        infom "check that all EATs are enabled"
```

```
            logm "*****************************************************************************************"

         waittime 00.00.02.0000

      } elseif { $user_gen == 10 } {
            waittime 00.00.01.0000
            exit
      }


# ********************************************************************************************
# ********************************************************************************************
# ****************************** - END OF SPIRE OPE RESUME OBCP - ******************************
# ********************************************************************************************
# ********************************************************************************************

      # ***************************************************************************************
      newTest_gen "SPIRE DRCU OFF OBCP"
      menuTB
      if { $user_gen == 8 } {

            waittime 00.02.00


            # ***************************************************************************************
                  newTest_gen "TRIGGER OBCP WITH START TC"
                  menuTB
                  if { $user_gen == 8 } {

                        infom "Sending TC DC2ST185 to start the SPIRE DRCU OFF OBCP"
                        EGSE_tcsend_CEV DC2ST185

                        waittime 00.00.02.0000

                        infom "check that OBCP SPIRE DRCU OFF has been triggered"
                        infom "Wait until the end of the OBCP (SPIRE is in SCIENCE mode, DRCU OFF and MTL TCs disabled)"


                        waittime 00.02.00
                  } elseif { $user_gen == 10 } {
                        waittime 00.00.01.0000
```

```
                exit
        }

# ********************************************************************************************
        newTest_gen "RECOVERY ACTION"
        menuTB
        if { $user_gen == 8 } {

                logm " "
                logm " Disabling Release of SPIRE  MTL TCs"
                logm " "
                EGSE_tcsend_CEV DC68F159

                logm " "
                logm "switching SPIRE OFF"
                call Z102999SCVT005_ASDGEN_SPIREPWROFF_P
                waittime 00.00.02.0000

                logm " "
                logm "switching SPIRE ON"
                call Z102999SCVT004_ASDGEN_SPIREPWRON_P
                waittime 00.00.02.0000

                logm "Enabling Release of SPIRE MTL TCs"
                EGSE_tcsend_CEV DC67F159
                infom "Please check that the SPIRE TCs Release is enabled"
                waittime 00.02.00

                logm " "
                logm "Calling sequence to put SPIRE in SCIENCE"
                call S102999SCVT015_ASDISTSPIR_STBY2PHOT
                waittime 00.00.02.0000


                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }
```

```
        # ********************************************************************************************

        logm "********************************************************************************************"
        logm "End of SPIRE DRCU OFF TEST"
        infom "check that all EATs are enabled"
        logm "********************************************************************************************"

   waittime 00.00.02.0000


} elseif { $user_gen == 10 } {
        waittime 00.00.01.0000
        exit
}



# ********************************************************************************************
# ********************************************************************************************
# ****************************** - END OF SPIRE DRCU OFF OBCP - ***************************
# ********************************************************************************************
# ********************************************************************************************


# ********************************************************************************************
newTest_gen "SPIRE OFF CTRL OBCP"
menuTB
if { $user_gen == 8 } {

        waittime 00.02.00


        # ********************************************************************************************
                newTest_gen "TRIGGER OBCP WITH START TC"
                menuTB
                if { $user_gen == 8 } {

                        infom "This OBCP is a TFL, but the command to clear the HK is not given yet, so it will be started by the start cmd"
                        waittime 00.00.02.0000
```

```
            infom "Sending TC DC4ST185 {DPV32185 370 } {DPV32185 100}to start the SPIRE OFF CTRL OBCP"
            waittime 00.00.02.0000
            EGSE_tcsend_CEV DC4ST185 {DPV32185 370 } {DPV32185 100}

            waittime 00.00.02.0000

            infom "check that OBCP SPIRE OFF CONTROLLED  has been triggered"
            waittime 00.00.02.0000
            infom "Wait until the end of the OBCP (SPIRE is OFF and MTL TCs disabled)"


            waittime 00.02.00
      } elseif { $user_gen == 10 } {
            waittime 00.00.01.0000
            exit
      }


# ********************************************************************************************
      newTest_gen "RECOVERY ACTION"
      menuTB
      if { $user_gen == 8 } {


            logm " "
            logm "switching SPIRE ON"
            call Z102999SCVT004_ASDGEN_SPIREPWRON_P
            waittime 00.00.02.0000

            logm "Enabling Release of SPIRE MTL TCs"
            EGSE_tcsend_CEV DC67F159
            infom "Please check that SPIRE TCs Release is enabled!"
            waittime 00.02.00

            logm " "
            logm "Calling sequence to put SPIRE in SCIENCE"
            call S102999SCVT015_ASDISTSPIR_STBY2PHOT
            waittime 00.00.02.0000


            waittime 00.02.00
      } elseif { $user_gen == 10 } {
```

```
                        waittime 00.00.01.0000
                        exit
                }

        # ********************************************************************************************

                logm "********************************************************************************************"
                logm "End of SPIRE OFF CTRL TEST"
                infom "check that all EATs are enabled"
                logm "********************************************************************************************"


                waittime 00.00.02.0000


        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }



# ********************************************************************************************
# ********************************************************************************************
# ****************************** - END OF SPIRE OFF CTRL  OBCP - ****************************
# ********************************************************************************************
# ********************************************************************************************


        # ********************************************************************************************
        newTest_gen "SPIRE OFF OBCP"
        menuTB
        if { $user_gen == 8 } {

                waittime 00.02.00


          # ********************************************************************************************
                  newTest_gen "SPIRE OFF DLL FDIR triggering"
                  menuTB
                  if { $user_gen == 8 } {
```

```
                infom "please start the SPIRE (RT XX) simulation on the CDMU SCOE to create jamming"
                waittime 00.00.02.0000
                infom "check that OBCP SPIRE OFF has been triggered (e.g. events, commands directed to SPIRE are being sent and SPIRE is going
off)"
                waittime 00.00.02.0000
                infom "Wait until the end of the OBCP, when SPIRE is OFF"

                waittime 00.00.02.0000

                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }


 # ********************************************************************************************
        newTest_gen "RECOVERY ACTION"
        menuTB
        if { $user_gen == 8 } {


                infom "please check that SPIRE is OFF and INVALID and no HK is being received"
                waittime 00.00.02.0000
                infom "please check that its MTL commands have been disabled"
                waittime 00.00.02.0000
                infom "Stop the simulation on the CDMU scoe and set the scoe OFF LINE"

                waittime 00.00.02.0000



                waittime 00.02.00
        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }


logm "********************************************************************************************"
```

```
        logm "End of SPIRE OFF TEST"
        infom "check that all EATs are enabled"
        logm "*****************************************************************************************"

        waittime 00.00.02.0000


        } elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
        }


} elseif { $user_gen == 10 } {
                waittime 00.00.01.0000
                exit
}


# ********************************************************************************************
# ********************************************************************************************
# ******************************** - END OF SPIRE OFF  OBCP - ********************************
# ********************************************************************************************
# ********************************************************************************************

finish_TS

EGSE_finish


#####################################################################
# end of test sequence
#####################################################################
# Changes:
# $Log: Z010999MCVT136_IST_SPIRE_FDIR.tcl,v $
# Revision 1.1  2007/12/06 02:41:55  hercdmu
# initial version
#
#
#####################################################################
```

9 Summary Sheets

9.1 Procedure Variation Summary

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

Table 9.1-1: Procedure Variation Sheet

9.2 Non Conformance Report (NCR) Summary

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

Table 9.2-1: Non-Conformance Record Sheet

9.3 Sign-off Sheet

	Date	Signature
Test Manager		
Operator		
PA Responsible		
ESA Representative		

E N D O F D O C U M E N T

Distribution List

	Name	Dep./Comp.		Name	Dep./Comp.
	Alberti von Mathias Dr.	ASG23		Reichle Konrad	ASA42
	Baldock Richard	FAE12		Runge Axel	OTN/ASA44
	Barlage Bernhard	AED13		Sauer Maximilian Dr.	AED65
	Bayer Thomas	ASA42		Schink Dietmar	AED32
	Brune Holger	ASA45		Schmidt Thomas	AED15
	Edelhoff Dirk	AED2		Schweickert Gunn	ASG23
	Fehringer Alexander	ASG13		Sonn Nico	ASG51
	Fricke Wolfgang Dr.	AED 65		Steininger Eric	AED32
	Geiger Hermann	ASA42		Stritter Rene	AED11
	Grasl Andreas	OTN/ASA44		Suess Rudi	OTN/ASA44
	Grasshoff Brigitte	AET12		Theunissen Martijn	DSSA
	Hamer Simon	Terma		Vascotto Riccardo	HE Space
	Hanka, Erhard	FI552		Wagner Klaus	ASG23
	Hendrikse Jeffrey	HE Space		Wietbrock Walter	AET12
	Hendry David	Terma		Wöhler Hans	ASG23
	Hengstler Reinhold	ASA42		Wössner Ulrich	ASE252
	Hinger Jürgen	ASG23		Zumstein Armin	ASQ42
	Hohn Rüdiger	AED65			
	Hölzle Edgar Dr.	AED32			
	Hopfgarten Michael	AED32			
	Huber Johann	ASA42			
	Hund Walter	ASE252		Alcatel Alenia Space Cannes	AAS-F
	Idler Siegmund	AED312		Alcatel Alenia Space Torino	AAS-I
	Ivády von András	FAE12		ESA/ESTEC	ESA
	Jahn Gerd Dr.	ASG23			
	Kalde Clemens	ASM2		**Instruments:**	
	Kettner Bernhard	AET42		MPE (PACS)	MPE
	Klenke Uwe	ASG72		RAL (SPIRE)	RAL
	Knoblauch August	AET32		SRON (HIFI)	SRON
	Koelle Markus	ASA43			
	Koppe Axel	AED312			
	Kroeker Jürgen	AED65		**Subcontractors:**	
	La Gioia Valentina	Terma		Alcatel Alenia Space Antwerp	ABSP
	Lang Jürgen	ASE252		Austrian Aerospace	AAE
	Langenstein Rolf	AED15		Austrian Aerospace	AAEM
	Langfermann Michael	ASA41		BOC Edwards	BOCE
	Martin Olivier	ASA43		Dutch Space Solar Arrays	DSSA
	Maukisch Jan	ASA43		EADS Astrium Sub-Subsyst. &	ASSE
	Much Christoph	ASA43		EADS CASA Espacio	CASA
	Müller Jörg	ASA42		EADS CASA Espacio	ECAS
	Müller Martin	ASA43		European Test Services	ETS
	Pietroboni Karin	AED65		Patria New Technologies Oy	PANT
	Platzer Wilhelm	AED2		SENER Ingenieria SA	SEN