



Herschel Integrated Satellite Test  
Procedure: Instruments FDIR OBCP

Herschel

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

CI-No: *100000*

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*\* For as run a print out without highlights like should be used!*

Issue	Date	Sheet	Description of Change	Release
1	28.04.2008	All	Initial version	

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# 1 Scope

## 1.1 Objective

This Procedure represents the instruments FDIR OBCP part of the S/C IST. In this test case we trigger some specific FDIR actions during the operation day (Autonomy period) of each of the three instruments. It has been agreed to keep the date of the CCS to the current UTC and that the execution of the three tests (one per instrument) can be compacted in one session, thus with the same starting condition. The starting configuration chosen for this sequential test is the end of the CDMS management test case, with S/C link in umbilical.

According to the IST specification (AD1) and following agreements (RD2, RD3) , the following OBCPs will be tested:

Table 1 - HIFI OBCPs

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

Table 2 - PACS OBCPs

PACS OBCPs (refer to chapter 7.4)	APID	TM	Event ID	type	trigger
DB_OBCP_H_PACS_SAFE	1152/1153	5,2	4		PACS_StartAutonomy_ Function_14_OBS_Shell.tcl
DB_OBCP_H_PACS_POWER_CYCLE	1152/1153	5,2	6		OBCP Start TC
DB_OBCP_H_PACS_NORMAL_OFF	1152/1153	5,2	25		PACS_StartAutonomy_ Function_17_OBS_Shell.tcl
DB_OBCP_H_PACS_IMMEDIATE_OFF	16	5,x	153 ⇔ replaced by 186	DLL FDIR ⇔ replaced by TFL TM	PACS_Disable_HK_OBS_Shell.tcl

Table 3 - SPIRE OBCPs

SPIRE OBCPs (refer to chapter 7.5)	APID	TM	Event ID	type	trigger
DB_OBCP_H_SPIRE_DRCU_OFF	1280/1281	5,2	xC000		SPIRE-OBCPTest-DRCUAnomaly.tcl
DB_OBCP_H_SPIRE_OPE_STOP	1280/1281	5,2	xC100		SPIRE-OBCPTest-ObservationAnomaly.tcl
DB_OBCP_H_SPIRE_OPE_RESUME	1280/1281	5,2	xC110		SPIRE-OBCPTest-ObservationAnomalyCorrected.tcl
DB_OBCP_H_SPIRE_OFF	16	5,x	152	DLL	jamming
DB_OBCP_H_SPIRE_OFF_CTRL	16	5,x	185	TFL TM FDIR	SPIRE provided TCs to clear HK. SPIRE_OBCPTest_OFFCTRL_trigger.tcl

Note:

DB\_OBCP\_H\_PACS\_BOLC\_OFF has been eliminated from the test because never called by PACS S/W of NC-3981(RD-7 )

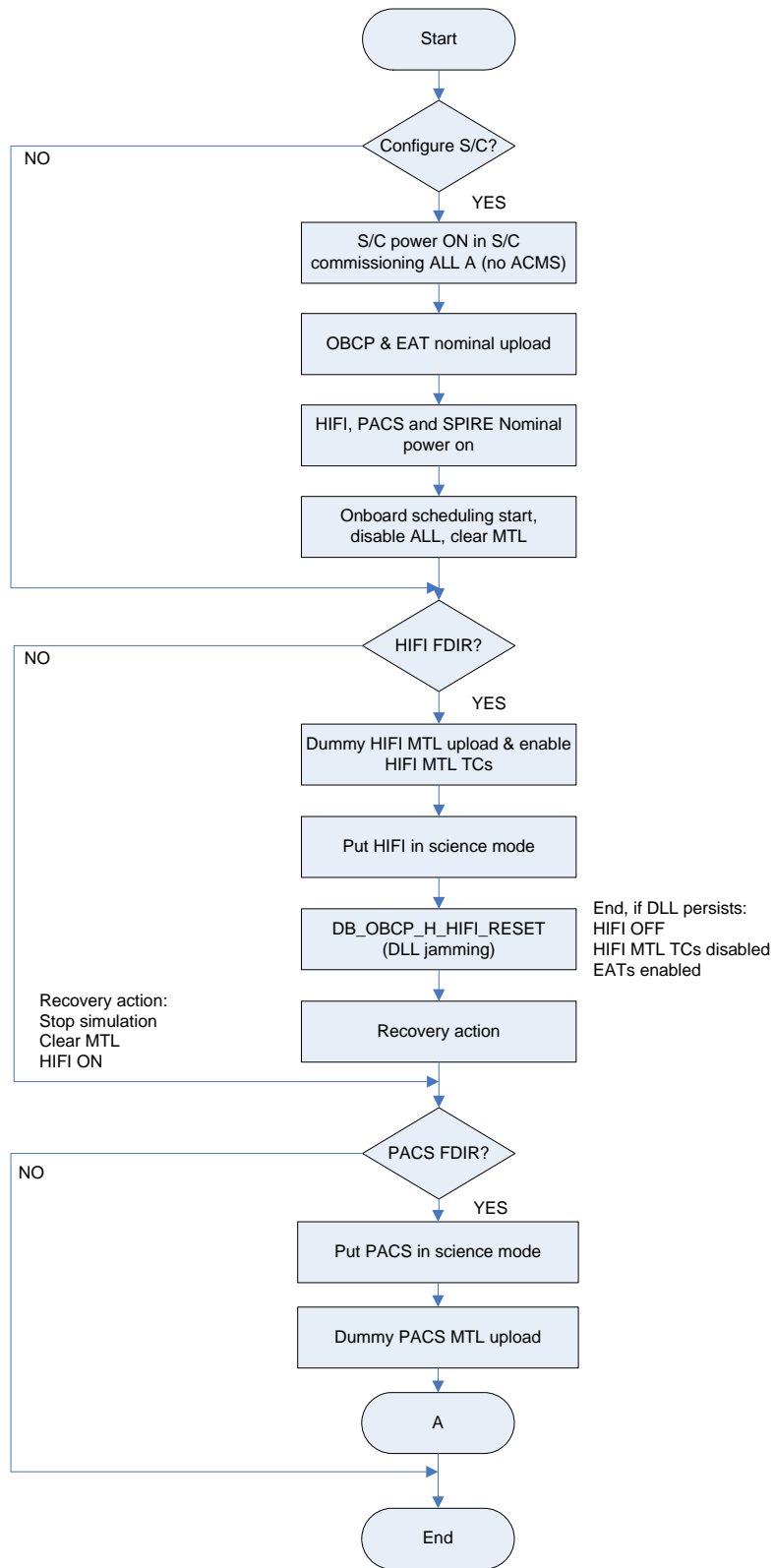
DB\_OBCP\_H\_PACS\_IMMEDIATE\_OFF DLL has been replaced by TFL (RD-8).

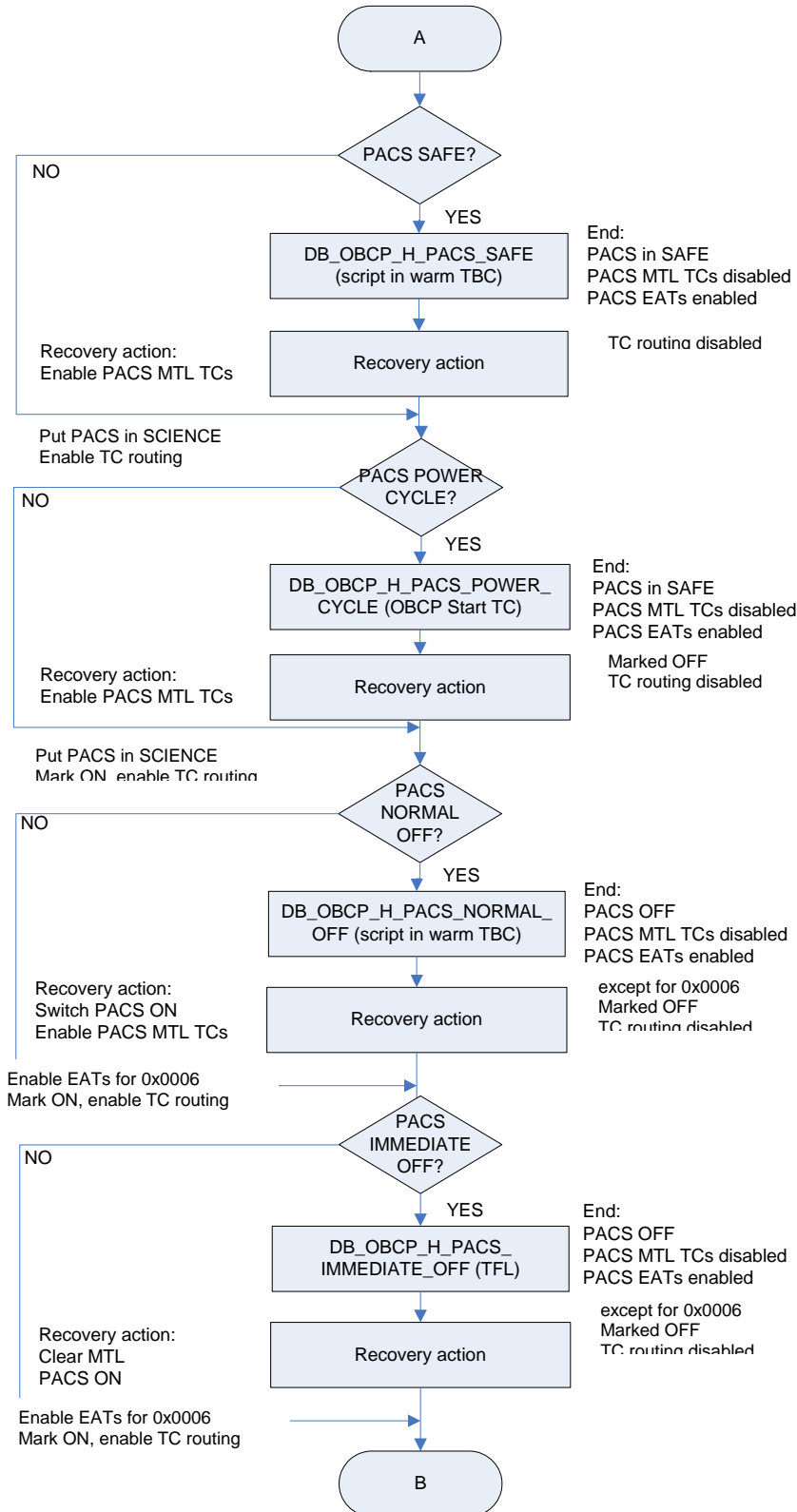
PACS and SPIRE TFL TM tests (PACS IMMEDIATE\_OFF and SPIRE OFF\_CTRL) will be started with the instrument in STANBY instead of science (RD-5)

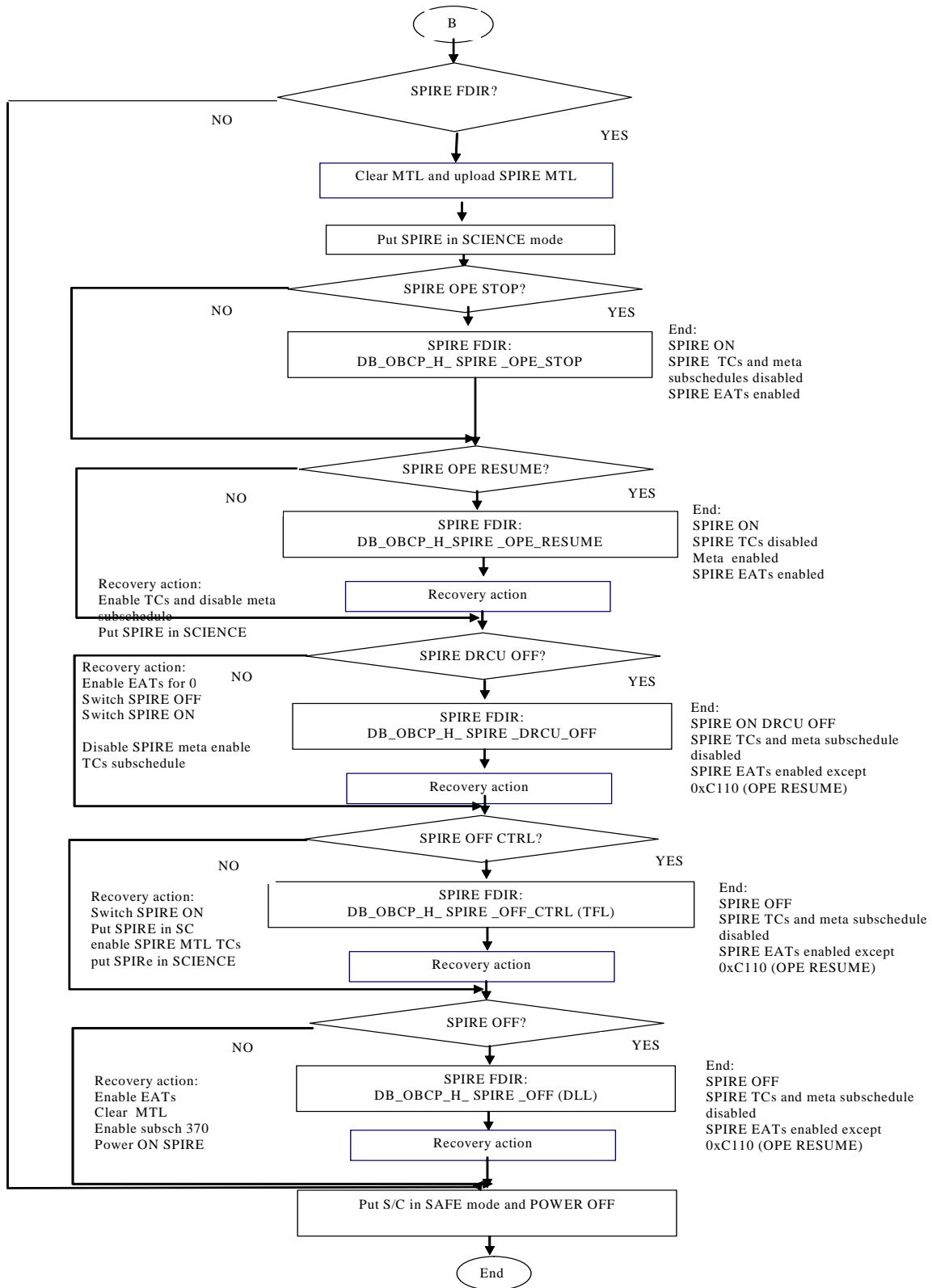
## **1.2 Operational Flow**

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



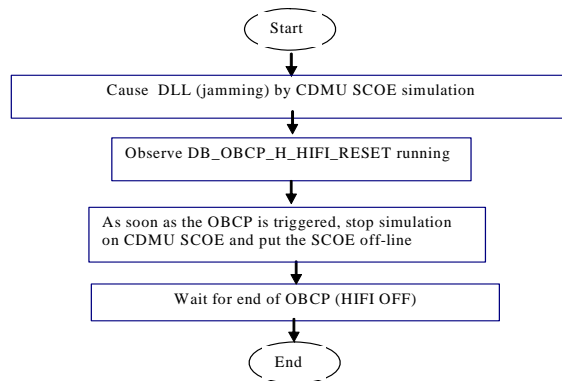






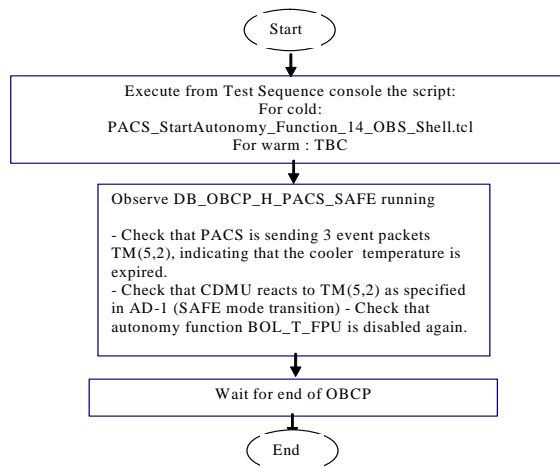
DB\_OBCP\_H\_HIFI\_RESET

DB\_OBCP\_H\_HIFI\_RESET (DLL)



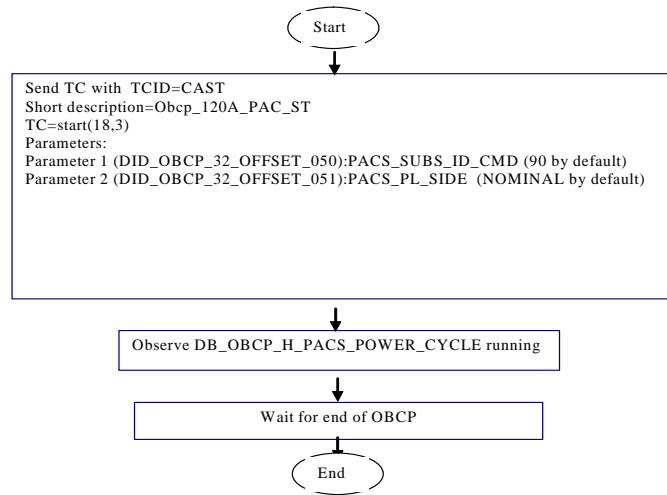
DB\_OBCP\_H\_PACS\_SAFE

DB\_OBCP\_H\_PACS\_SAFE



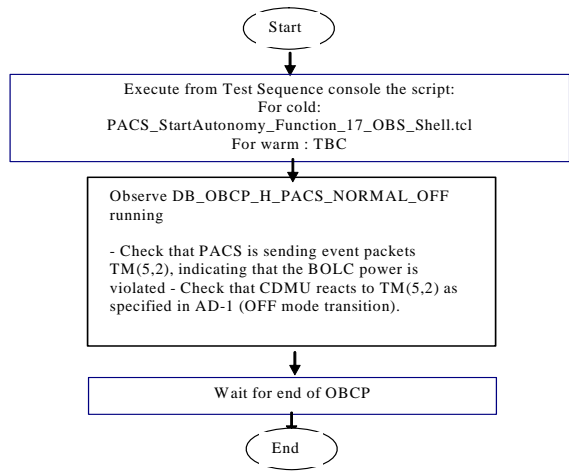
DB\_OBCP\_H\_PACS\_POWER\_CYCLE (OBCP Start TC)

DB\_OBCP\_H\_PACS\_POWER\_CYCLE



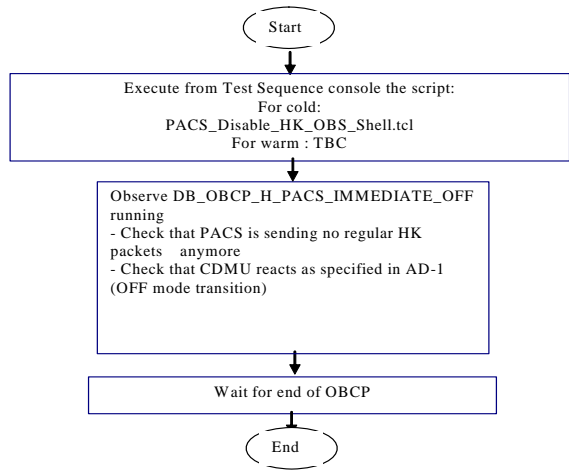
DB\_OBCP\_H\_PACS\_NORMAL\_OFF

DB\_OBCP\_H\_PACS\_NORMAL\_OFF



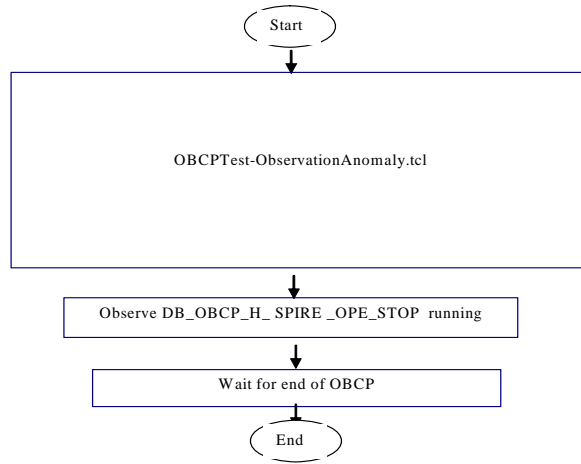
DB\_OBCP\_H\_PACS\_IMMEDIATE\_OFF (TFL)

DB\_OBCP\_H\_PACS\_IMMEDIATE\_OFF



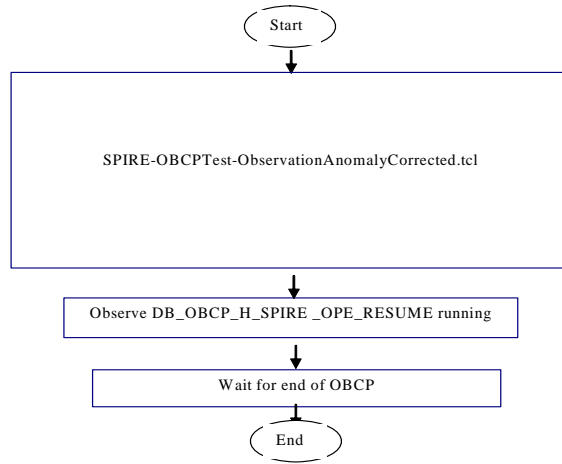
DB\_OBCP\_H\_SPIRE\_OPE\_STOP

DB\_OBCP\_H\_SPIRE\_OPE\_STOP



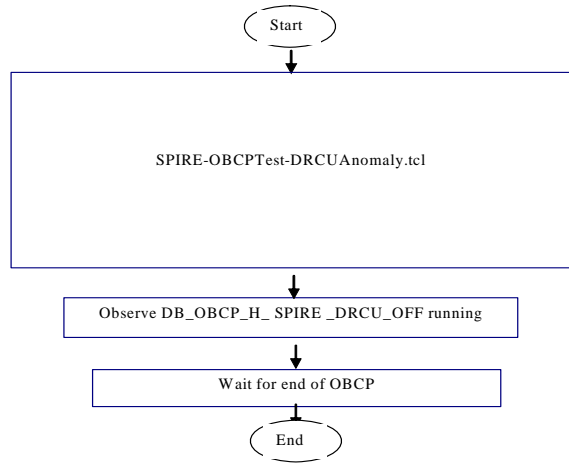
DB\_OBCP\_H\_SPIRE\_OPE\_RESUME

DB\_OBCP\_H\_SPIRE\_OPE\_RESUME



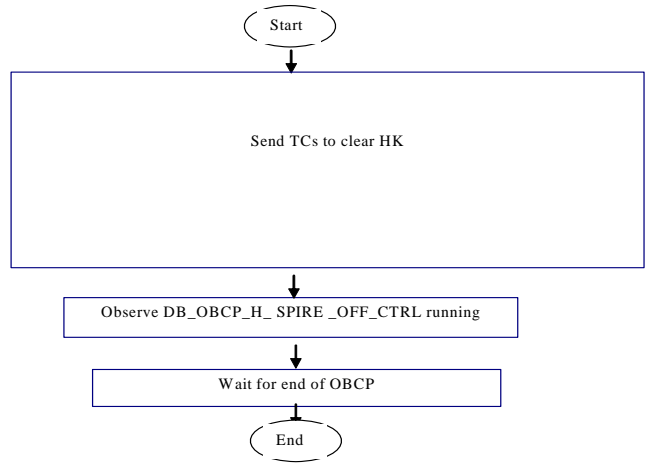
DB\_OBCP\_H\_SPIRE\_DRCU\_OFF

DB\_OBCP\_H\_SPIRE\_DRCU\_OFF



DB\_OBCP\_H\_SPIRE\_OFF\_CTRL (TFL)

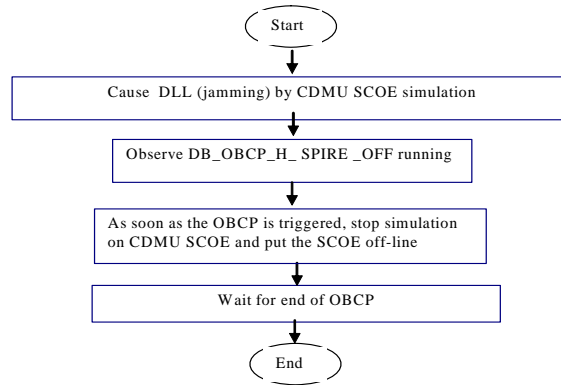
DB\_OBCP\_H\_SPIRE\_OFF\_CTRL (TFL)





DB\_OBCP\_H\_SPIRE\_OFF (DLL)

DB\_OBCP\_H\_SPIRE\_OFF (DLL)



## 2 Documents/Drawings

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

### 2.1 Applicable Documents

- AD-1 Herschel Integrated Satellite Test Specification  
H-P-2-ASP-SP-0939, Issue 6
- AD-2 Payload management and OBCP  
H-P-ASPI-TN-1072, issue 6
- AD-3 Test Specification for Herschel Instruments AVM and FM Tests performed at Satellite Level  
HP-2-ASP-TS-1083\_1\_0

### 2.2 Reference Documents

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

- RD-1 Herschel SVM User Manual  
H-P-MA-AI-0001
- RD-2 Herschel/Planck List of Acronyms  
H-P-ASP-LI-0077
- RD-3 Herschel Instruments power ON-OFF and Mode Switching Procedure for functional Testing  
HP-2-ASED-TP-0206, Issue 2
- RD-4 Leading Procedure for Herschel Integrated Satellite Test 'IST'  
HP-2-ASED-TP-0134 iss 4
- RD-5 H-P-TASF-MN-10377
- RD-6 H-P-TASF-MN-10378
- RD-7 H-P-TASF-MN-10199
- RD-8 Mail to S. Hamer



### 2.3 Other Documents

None

### 2.4 Acronyms

Acronyms are specified in RD-2 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 RD4, for IST specifications chapter 5.8.13 "TEST OF INSTRUMENT FDIR",

#### **4.1.1 *Hardware Configuration***

Refer to RD4, for IST specifications chapter 5.8.13 "TEST OF INSTRUMENT FDIR",

#### **4.1.2 *Software Configuration***

Refer to RD4

#### **4.1.3 *Test Configuration***

Refer to RD4

#### **4.1.4 *Simulated Equipments***

Refer to RD4

### **4.2 Set-up**

Refer to RD4

## **5 Conditions**

### **5.1 Personnel**

Refer to RD4

### **5.2 Environmental**

Refer to RD4

### **5.3 General Precautions and Safety**

Refer to RD4

#### **5.3.1 *General Safety Requirements, Precautions***

Refer to RD4

#### **5.3.2 *ESD constraints***

Refer to RD4

#### **5.3.3 *Special QA Requirements***

Refer to RD4

### **5.4 GSE**

Refer to RD4

#### **5.4.1 *MGSE***

Refer to RD4

### **5.4.2 CVSE**

Refer to RD4

### **5.4.3 EGSE**

#### 5.4.3.1 EGSE Hardware Configuration

Refer to RD4

**NOTE: for HIFI and PACS OBCP tests, IEGSEs shall be running !**

#### 5.4.3.2 EGSE User Software

Refer to RD4

#### 5.4.3.3 Grounding Configuration

Refer to RD4

#### 5.4.3.4 Test Equipment

Refer to RD4

#### 5.4.3.5 Data Acquisition System

Refer to RD4

### **5.4.4 OGSE**

Refer to RD4

### **5.4.5 Special Equipment**

Refer to RD4



## 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.

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 unexpected 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 RD4, selecting the Test Case Instruments FDIR (5.8.13).

If the test case is run after the CDMS management (5.8.7), the S/C is already configured for an Autonomy Period and the mastr GUI will already be available:

- on the master GUI, select Test Case Instruments FDIR (5.8.13)
- SKIP the step to launch the IST\_START
- Continue with step 1 §7.2 of this procedure calling the master script Z010999MCVT131\_IST\_INSTR\_FDIR

NOTE: In this sequence, SKIP the step 3 of §7.2 “Configure for Instrument FDIR test”, because this is meant to configure the S/C in the Autonomy Period status.

If the test case is run stand-alone (e.g. during debugging), the S/C will be off at the beginning, so it will need to be switched on and then configured as in Autonomy Period.

Steps:

- Follow AD 4 selecting Test Case Instruments FDIR (5.8.13) from the GUI
- PERFORM the IST\_START step
- Continue with step 1 §7.2 of this procedure calling the master script Z010999MCVT131\_IST\_INSTR\_FDIR

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

**7.2 Test Specific Initialization**

Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1.	<p>Enter the following In the CCS Test Console:</p> <p><i>callasync</i> <i>Z010999MCVT131_IST_INSTR_FDIR.tcl</i></p>	PASS					
2.	<p>During <i>Z010999MCVT131_IST_INSTR_FDIR.tcl</i></p> <p><i>START HERSCHEL INSTRUMENTS FDIR, SECTION 5.8.13</i></p> <p>⇒ Click the button "YES" to proceed</p>	YES			If NO, the sequence is terminated.		
3.	<p>During <i>Z010999MCVT131_IST_INSTR_FDIR.tcl</i></p> <p><i>Configure for Instruments FDIR test? - SKIP if S/C already on and configured by CMDS MGMT</i></p> <p>⇒ Click the button "Confirm" to proceed</p>	CONFIRM			<p>If "SKIP" the sequence continues from step 37.</p> <p>NOTE: SKIP this step, if test follows cdms management and S/C already in A.P.</p>		

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
4.	<p>During Z010999MCVT131_IST_INSTR_FDIR</p> <p>"CDMS setting for separation"</p> <p>⇒ Click the button "Confirm" to proceed</p>	CONFIRM					
5.	<p>During ...</p> <p>D103159SCVT138_IST_LAUNCH_SUNACQ</p> <p>⇒ Wait, go to script ...ACMS_CONFIG25</p>	PASS					
6.	<p>During A102109SPVT103_ACMS_CONFIG25</p> <p>⇒ enter option 88, to go to Main Menu 3</p> <p>⇒ Click the button "OK"</p> <p>⇒ then press "Continue"</p>	88 OK CONTINUE					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
7.	<p>During A102109SPVT103_ACMS_CONFIG25 (1,6,4,5,20,99,88)</p> <p>SEPARATION (open separation straps) Main Menu 3.0: option 2</p> <p>⇒ Click the button "OK" and then ⇒ Click the button "Continue"</p>	<p>2 OK CONTINUE</p>					
8.	<p>During Z010999MCVT089_ACMS_SAM_MON</p> <p>Do you want to continue to monitor SAM Sun Pointing mode?</p> <p>⇒ Enter your choice: no</p>	NO					
9.	<p>At end of Z010999MCVT089 IST LAUNCH_SUNACQ</p> <p>⇒ Click the button "End TS!" to proceed</p>	ENDTS					
10.	<p>During Z010999MCVT131_IST_INSTR_FDIR</p> <p>Transition to Nominal</p> <p>⇒ Click the button "Confirm" to proceed</p>	CONFIRM			At the end check, from SAT.ilv, that FDIR mode is AFO before switching instruments on		

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
11.	<p><i>During Z010999MCVT089_SUNACQ_NOMINAL</i></p> <p><i>⇒ Click the button "End TS!" to proceed</i></p>	ENDTS					
12.	<p><i>During Z010999MCVT131_IST_INSTR_FDIR</i></p> <p><i>At the prompt "Command ACMS (via OCM/Earth) to SCM/Earth"</i></p> <p><i>⇒ Click the button "OK" to proceed</i></p>	OK					
13.	<p><i>During A102109SPVT103_ACMS_CONFIG25</i></p> <p><i>Select Transition to OCM.</i> <i>Main Menu 4.0 SAM Phase: Option 6</i></p> <p><i>⇒ Click the button "OK" and then</i> <i>⇒ Click the button "Continue" to proceed</i></p>	6 OK CONTINUE					
14.	<p><i>During A102109SPVT036_ACMS_STR_ON</i></p> <p><i>Do you want to change the current STR in use ? Answer no</i></p> <p><i>⇒ Click the button "NO" to proceed</i></p>	NO					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
15.	<p><i>During A102109SPVT043_TRANSITION_TO_OCM</i></p> <p><i>Only for info:</i>            ⇒ Verify after ca.7 min if ACMS mode is = OCM point fine (Earth pointing)</p> <p>⇒ Verify in AND: ZAA00999 if Est Attitude Q1..Q4 is close to Target</p> <p>⇒ Verify AESM3002 = OCM point fine or in synoptic SAT – ACMS – ACC – Mode Nominal</p>	PASS					
16.	<p><i>During A102109SPVT043_TRANSITION_TO_OCM</i></p> <p>SUSPEND            ⇒ click on script name in Test Console</p> <p>⇒ Click the button "RESUME" to proceed</p>	RESUME					
17.	<p><i>During A102109SPVT103_ACMS_CONFIG25</i></p> <p>Select Transition to SCM (Science mode).            Main Menu 7.0: Option 3</p> <p>⇒ Click the button "OK" and then            ⇒ Click the button "Continue" to proceed</p>	3 OK CONTINUE					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
18.	<p><i>During A102109SPVT038_RWL_ON</i></p> <p><i>"Do you want to change actual on-board wheel set selected in the nominal configuration? RWL 1-2-3-4 selected</i></p> <p><i>⇒ Click the button "NO" to proceed ?</i></p>	NO			AEW1A002, AEW2A002, AEW3A002, AEW4A002 LOW expected until wheels are spun up.		
19.	<p><i>During A102109SPVT042_RWL_SPINUP</i></p> <p><i>"Change actual Angular Momentum (initial values)?" Option: no</i></p> <p><i>⇒ Wait for about 10 minutes</i></p>	<p>NO</p> <p>RWL-1 ang momentum 10.0 RWL-2 ang momentum -10.0 RWL-3 ang momentum 10.0 RWL-4 ang momentum -10.0</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
20.	<p>Only for info:</p> <p>⇒ Verify RWL speed in plotting window</p> <p>1. Select REALTIME =&gt; DESKTOP =&gt; MONITORING =&gt; TM Plotting Tool</p> <p>2. Select Directory: Home/heracms/plotting</p> <p>3. Select FILE =&gt; LOAD =&gt; /home/heracms/plotter/RWLsSPEED.txt</p>	PASS					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
21.	<p>Only for info:</p> <p>⇒ Verify 4x RWL momentum parameters are within +/-20%</p> <p>AEWMA002 = 10.0 (RWL1 momentum)            AEWMB002 = -10.0 (RWL2 momentum)            AEWMC002 = 10.0 (RWL3 momentum)            AEWMD002 = -10.0 (RWL4 momentum)</p> <p>⇒ Verify in SAT synoptic SAT – ACMS – ACC – Mode Nominal = OCM Point Fine</p> <p>⇒ Verify in Telemetry window ZAAF0999 (diagnostic TM)</p> <p>As long as the ACMS is switched On the Menu Box has to be present !!!</p>	PASS					
22.	<p>At end of  <b>A102109SPVT042_RWL_SPINUP</b></p> <p>⇒ Click the button “End TS!” to proceed</p>	ENDTS			ACZ2T109 may timeout because of slew time too short. Wait until AESM3002 is "SCM pnt F rdy"		

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
23.	<p>During Z010999MCVT131_IST_INSTR_FDIR</p> <p>"Transition from SAS 900W and BS 24V to SAS 1475W and BS full charged"</p> <p>⇒ Click the button "Confirm" to proceed</p>	CONFIRM					
24.	<p>During Z010999MCVT131_IST_INSTR_FDIR</p> <p>"Switch on SREM and start acquisition service"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					
25.	<p>During Z102999SCVT003_SREM_ACQ_START</p> <p>⇒ Click the button "End TS!" to proceed</p>	ENDTS			SPR-290		
26.	<p>During Z010999MCVT131_IST_INSTR_FDIR</p> <p>"POWER ON HIFI PRIMARY"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
27.	<p><i>During</i>  <i>H102999SCV005_ASDGENHIFI_PWR_ON_P</i></p> <p><i>"Power on HIFI prime and enable MIL 1553 I/F. FM HIFI Switch on for functional tests only in warm conditions with LOU or dummy - Select NO to abort TS if not correct"</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES			Conditions may change, so check on RD-3 for current reference and expected OOL.		
28.	<p><i>During</i>  <i>H102999SCV005_ASDGENHIFI_PWR_ON_P</i></p> <p><i>"Set Bus Profile back to original setting?"</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES					
29.	<p><i>During</i>  <i>Z010999MCVT131_IST_INSTR_FDIR</i></p> <p><i>"POWER ON PACS PRIMARY"</i></p> <p><i>⇒ Click the button " Confirm" to continue</i></p>	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
30.	<p><i>During</i>  P102999SCVT905_ASDISTPACS_PWR_ON_N</p> <p><i>"Power on PACS prime and enable MIL 1553 I/F. FM PACS Switch on in warm or cold conditions, FPU connected ... - Select NO to abort TS if not correct"</i></p> <p>⇒ <i>Click the button "YES" to confirm</i></p>	YES			Conditions may change, so check on RD-3 for current reference and expected OOL.		
31.	<p><i>During</i>  P102999SCVT905_ASDISTPACS_PWR_ON_N</p> <p><i>PACS FDIR OBCPs/EATs loaded and enabled? If not select NO to abort TS. If not sure, check with D102159SCVT192_GET_EAT_REPORT. Then select "YES"</i></p> <p>⇒ <i>Click the button "YES" to confirm</i></p>	YES					
32.	<p><i>During</i>  P102999SCVT905_ASDISTPACS_PWR_ON_N</p> <p><i>"Set Bus Profile back to original setting?"</i></p> <p>⇒ <i>Click the button "YES" to confirm</i></p>	YES					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
33.	<p><i>During</i> Z010999MCVT131_IST_INSTR_FDIR</p> <p>"POWER ON SPIRE PRIMARY"</p> <p>⇒ Click the button "confirm" to continue</p>	CONFIRM					
34.	<p><i>During</i> S102999SCVT017_ASDGENSPIR_PWR_ON_P</p> <p>"Power on SPIRE prime and enable MIL 1553 I/F. FM SPIRE Switch on for functional tests only in any conditions ... - Select NO to abort TS if not correct "</p> <p>⇒ Click the button "YES" to confirm</p>	YES			Conditions may change, so check on RD-3 for current reference and expected OOL.		
35.	<p><i>During</i> S102999SCVT017_ASDGENSPIR_PWR_ON_P</p> <p>"Set Bus Profile back to original setting?"</p> <p>⇒ Click the button "YES" to confirm</p>	YES					
36.	<p><i>During</i> Z010999MCVT131_IST_INSTR_FDIR</p> <p>At the prompt "SET RX" RATE FROM 4000 to 125 BPS?"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
37.	<p>During Z010999MCVT131_IST_INSTR_FDIR</p> <p>"SAVING ORIGINAL SCBP"</p> <p>⇒ Click the button "Confirm" to continue</p>	YES					
38.	<p>During Z010999MCVT131_IST_INSTR_FDIR</p> <p>"Clear MTL and start ON BOARD SCHEDULING?"</p> <p>⇒ Click the button "Confirm" to proceed</p>	CONFIRM			<p>The following TM parameters are related to the MTL and might be of importance in case of problems:</p> <ul style="list-style-type: none"> <li>- DE82F170</li> <li>- DEA74170</li> <li>- DEH26170</li> </ul> <p>Open also the OnBoardQueue</p>		
39.	<p>During Z010999MCVT131_IST_INSTR_FDIR</p> <p>"Check that all subschedules from 1 to 256, plus the 370 are enabled"</p> <p>⇒ Perform activity then click the button "OK" to proceed</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
40.	<p><i>During</i> Z010999MCVT131_IST_INSTR_FDIR</p> <p><i>"Start the instrument specific FDIR sequence"</i></p> <p>⇒ 'callasync' the specific instrument FDIR sequence from test console and</p> <p>⇒ only at the END of it click the "OK" button.</p>	<p>Callasync proper sequence and continue from</p> <ul style="list-style-type: none"> <li>- chapter 7.3 for HIFI</li> <li>- chapter 7.4 for PACS</li> <li>- chapter 7.5 for SPIRE</li> </ul> <p>Sequences can be performed also one after the other.</p> <p>Otherwise continue from §7.6 for end of test activities</p>			Note down: chapter - time stamp		

Test location:	Operator	Product-Assurance:	Date:
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**7.3 HIFI**

**Note:** HHIFIEGSEs shall be already running since the script is going to connect to them!

<b>Step-</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Tolerance</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
41.	<i>Callasync</i> Z010999MCVT134_IST_HIFI_FDIR  <i>to perform the HIFI related part of the Instruments FDIR IST</i>	PASS					
42.	<i>During</i> Z010999MCVT134_IST_HIFI_FDIR  "Perform HIFI FDIR PRIMARY?"  ⇒ Click the button "Confirm" to continue	CONFIRM			If SKIP, it exits the script		
43.	<i>During</i> Z010999MCVT134_IST_HIFI_FDIR  "Starting condition check"  ⇒ Click the button "Confirm" to continue	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
44.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"calling ALL_SubscribeParams.tcl"</p> <p>⇒ Click the button "OK" to continue</p>	OK					
45.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Please check that no instrument is in science. If so, put it in standby"</p> <p>⇒ Click the button "OK" to continue</p>	OK			RD-3 for details.		
46.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"INITIAL S/C STATUS CHECK"</p> <p>⇒ Click the button "confirm" to continue</p>	CONFIRM					
47.	<p><i>During</i> Z010999MCVT153_IST_STATUS</p> <p>"Do you want to stop and notice each failure"</p> <p>⇒ Click the button "NO" to continue</p>	NO					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
48.	<p><i>During</i> Z010999MCVT153_IST_STATUS</p> <p>⇒ Check the Satellite State</p> <p>⇒ Click the button "OK" to continue</p>	OK			Compare with AD-1 for chapter 5.8.7 of IST specifications		
49.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Set SCBP to HIFI Prime (2)"</p> <p>⇒ Click the button " Confirm" to continue</p>	CONFIRM					
50.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"upload dummy MTL with HIFI connection test in subschedule 70"</p> <p>⇒ Click the button "Confirm to continue"</p>	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
51.	<p><i>During</i> D102159SCVT214_IST_HIFI_MTL_PING</p> <p>"Check the parameters"</p> <p>⇒ Check that there is 1 HIFI PING TC every 5 minutes starting within 15 minutes for 10 hours</p> <p>⇒ Click the button "OK" to confirm</p>	<p>PASS</p> <p>OK</p>					
52.	<p><i>During</i> D102159SCVT214_IST_HIFI_MTL_PING</p> <p>⇒ Click the button "EndTS!" to continue</p>	<p>ENDTS</p>					
53.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Check that subschedule 60 (meta-HIFI) is disabled and 70 (HIFI TCs) are enabled, then press OK"</p> <p>⇒ Perform activity and then press the button "OK" to proceed</p>	<p>PASS</p> <p>OK</p>					
54.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Wait for execution of the first command, then press OK"</p> <p>⇒ Click the button "OK" to confirm</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
55.	<p>During Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Put HIFI Primary in science mode"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					
56.	<p>During Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Insert call to science mode sequence"</p> <p>⇒ Click the button "OK" to confirm</p>	<p>Callasync sequence according to RD-3 and current condition.</p> <p>At the end of it, press OK</p>			Note down chapter of RD-3 that has been executed:		
57.	<p>During Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Perform HIFI RESET OBCP (DLL)?"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM			<p>If SKIP, it continues at step 75.</p> <p>DB_OBCP_H_HIFI_RESET is the OBCP under test.</p>		

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
58.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"HIFI RESET DLL FDIR triggering"</p> <p>⇒ Click the button "confirm" to continue</p>	CONFIRM					
59.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Please filter one TMPKT History for TM(5,4) and one for TM(5,1)"</p> <p>⇒ Click the button "OK" to continue</p>	PASS OK					
60.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Please start the HIFI (RT 16) simulation on the CDMU SCOE to create jamming"</p> <p>⇒ Click the button "OK" to proceed</p>	OK			OK, then move to the CDMU SCOE desktop		
61.	<p><i>On CDMS SCOE</i></p> <p>Double-click on the link "StartSCOE.bat" on the desktop to start the CDMU SCOE workstation.</p>	PASS					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
62.	On CDMS SCOE  Select Menu: Mode⇒ Local Mode Password: H-P	PASS					
63.	On CDMS SCOE  Select from menu: Setup⇒ RTSim Configuration	PASS					
64.	On CDMS SCOE  Select file: R:\(192.168.90.32)\Herschel.rtc  and then click the button "OK"	PASS					
65.	On CDMS SCOE  Select from menu: Mode⇒ On Line	PASS					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
66.	<p>On CDMS SCOE</p> <p>In window: "System Control/RT controls"</p> <p>⇒ Select RT 16</p> <p>⇒ Click the button "Enable" for:</p> <ul style="list-style-type: none"> <li>- control</li> <li>- TM queue</li> <li>- TC queue</li> </ul> <p>Wait 8 seconds then immediately perform next step</p>	PASS			<p>JAMMING STARTED!!!!!!</p> <p>Very important to stop within 8 sec, to avoid subsequent reconfigurations!!</p> <p>CAN BE STOPPED AS SOON AS THE OBCP STARTED EVENT IS RECEIVED.</p>		
67.	<p>On CDMS SCOE</p> <p>In window: "System Control/RT controls"</p> <p>Click the button "Disable" for:</p> <ul style="list-style-type: none"> <li>- control</li> <li>- TM queue</li> <li>- TC queue</li> </ul>	PASS			<p>Very important to stop within 8 sec, to avoid subsequent reconfigurations!!</p>		

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
68.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR <i>At the prompt</i> "Wait until the end of the OBCP TM(5,1) with SPID 40145170 proclD 0x130D"</p> <p><i>Check that</i> ⇒ OBCP HIFI_RESET has been triggered -TM(5,1) with SPID 4014817 proclD 0x130D ⇒ events TM(5,4) have been sent with EvID 0x3001 (SOFT RESET) 0x3000 (HARD RESET) ⇒ TM(5,1) with SPID 40145170 proclD 0x130D has been received</p> <p>⇒ Click the button "OK" to confirm</p>	PASS  OK			If soft reset, HIFI is left ON If hard reset HIFI is left OFF.		
69.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"RECOVERY ACTION"</p> <p>⇒ Click the button "Confirm to continue"</p>	CONFIRM					
70. If HARD RESET	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"please check subschedules 60 and 70 are disabled"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	PASS  OK					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
71. If SOFT RESET	<p>During Z010999MCVT134_IST_HIFI_FDIR</p> <p>"please check subschedules 60 is disabled and 70 is enabled"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					
72.	<p>During Z010999MCVT134_IST_HIFI_FDIR</p> <p>" Set the CDMU SCOE OFF LINE"</p> <p>On CDMS SCOE, select from menu: Mode → Off Line</p> <p>⇒ Perform activity and then click the button "OK" to proceed</p>	<p>PASS</p> <p>OK</p>					
73.	<p>During Z010999MCVT134_IST_HIFI_FDIR</p> <p>"End of HIFI RESET OBCP (DLL)" "check that all EATs are enabled"</p> <p>⇒ Perform activity through D102159SCVT192_GET_EAT_REPORT and then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
74.	<p>During D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ Click the button "EndTS!" to proceed</p>	ENDTS					
75.	<p>During Z010999MCVT134_IST_HIFI_FDIR</p> <p>"RESET starting conditions"</p> <p>⇒ click the "confirm" to continue</p>	CONFIRM					
76.	<p>During Z010999MCVT131_IST_INSTR_FDIR</p> <p>"Check that all subschedules from 1 to 256, plus the 370 are enabled"</p> <p>⇒ Click the "OK" button to continue</p>	OK					
77. If HARD RESET	<p>During Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Switching HIFI ON"</p> <p>⇒ click the "CONFIRM" button to confirm</p>	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
78. If HARD RESET	<p><i>During</i> Z102999SCVT014_ASDGEN_HIFIPWRON_P</p> <p>"script to switch HIFI on in .... conditions.....click NO to abort the sequence"</p> <p>⇒ click the "YES" button to confirm</p>	YES			Refer to RD-3 for exact conditions and expected OOL.		
79. If HARD RESET	<p><i>During</i> Z102999SCVT014_ASDGEN_HIFIPWRON_P</p> <p>"Set SCBP back to the original?"</p> <p>⇒ click the "YES" button</p>	YES					
80.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>"Please terminate the sequence ALL_SubscribeParams.tcl"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	OK					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
81.	<p><i>During</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p><i>"End of HIFI Test"</i> <i>"check that all EATs are enabled"</i></p> <p>⇒ <i>Perform activity through D102159SCVT192_GET_EAT_REPORT and then click the "OK" button to confirm</i></p>	PASS OK					
82.	<p><i>During</i> D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ <i>Click the button "EndTS!" to proceed</i></p>	ENDTS					
83.	<p><i>At end of</i> Z010999MCVT134_IST_HIFI_FDIR</p> <p>⇒ <i>Click the button "End TS!" to proceed</i></p>	ENDTS					

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**7.4 PACS**

Note: HPACSEGSE shall be already running since the script is going to connect to them!

<b>Step-</b>	<b>Test-Step-Description</b>	Nominal Value	Tolerance	Actual Value	Remarks	P	N
84.	<i>Callasync</i> Z010999MCVT135_IST_PACS_FDIR  <i>to perform the PACS related part of the Instruments FDIR IST</i>	PASS					
85.	<i>During</i> Z010999MCVT135_IST_PACS_FDIR  "PERFORM PACS FDIR TEST (PRIMARY)?"  ⇒ <i>Click the button "Confirm" to continue</i>	CONFIRM			If SKIP, it exits the script		
86.	<i>During</i> Z010999MCVT135_IST_PACS_FDIR  "Starting condition check"  ⇒ <i>Click the button "Confirm" to proceed</i>	CONFIRM					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
87.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"Please check that no instrument is in science. If so put it in standby"</i></p> <p>⇒ <i>Perform the activity and then click the button "OK" to confirm</i></p>	OK			RD-3 for details.		
88.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"INITIAL S/C STATUS CHECK"</i></p> <p>⇒ <i>Click the button "Confirm" to continue</i></p>	PASS					
89.	<p><i>During</i> Z010999MCVT153_IST_STATUS</p> <p><i>"Do you want to stop and notice each failure"</i></p> <p>⇒ <i>Click the button "NO" to continue</i></p>	NO					
90.	<p><i>During</i> Z010999MCVT153_IST_STATUS</p> <p>⇒ <i>Check the Satellite State</i></p> <p>⇒ <i>Click the button "OK" to continue</i></p>	<p>PASS</p> <p>OK</p>			Compare with AD-1 for chapter 5.8.13 of IST specification		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
91.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Set SCBP to PACS Prime (4)"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					
92.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"upload and enable dummy MTL with PACS connection test in subschedule 90"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM			Open an On-Board Queue Display for monitoring the MTL status		
93.	<p><i>During</i> D102159SCVT125_IST_PACS_MTL_PING</p> <p>"Check MTL parameters"</p> <p>⇒ Check that there is 1 PACS PING TC every 5 minutes starting within 15 minutes for 10 hours</p> <p>⇒ Click the button "OK" to continue</p>	PASS OK					
94.	<p><i>During</i> D102159SCVT125_IST_PACS_MTL_PING</p> <p>⇒ Click the button "EndTS!" to continue</p>	ENDTS					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
95.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Check that the MTL contains one PC023280 (DPU_TEST_CONN) every 5 minutes for 10 hours in subshcedule 90"</i></p> <p><i>⇒ Click the button "OK" to continue</i></p>	PASS OK			120 TC's are put in the MTL.		
96.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is enabled, then press OK"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	OK					
97.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Wait for execution of the first command, then press OK"</i></p> <p><i>⇒ Click the button "OK" to continue</i></p>	OK					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
98.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Put PACS in SCIENCE"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					
99.	<p><i>During</i> P102999SCVT904_ASDGENPACS_NomSpect</p> <p>"FM PACS Simulate Spectroscopy for test in ANY conditions - abort TS if not correct: Choose Yes or No"</p> <p>⇒ Click the button "Yes" to continue</p>	<p>YES</p> <p>Check that file in /HPCCS/VARIABLE/RESULTS/&lt;test_session&gt;/TMDUMP/ /&lt;date-time&gt;VC1.txt is increasing.</p>			<p>Refer to RD-3 for current message and expected OOL.</p> <p>When PC012380 is sent proceed to next step Note: TC will remain pending until end of science</p>		
100.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"TEST the PACS SAFE FDIR?"</p> <p>⇒ Click the button "Confirm to continue</p>	CONFIRM			<p>If SKIP, it continues at step 117.</p> <p>DB_OBCP_H_PACS_SAFE is the OBCP under test.</p>		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
101.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Execute PACS SCRIPT FOR AUTONOMY FUNCTION 14?"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					
102.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Filter a TMPKT history for TM(5,2) and one for TM(5,1)"</p> <p>⇒ Check the script name and click the "OK" button to confirm</p>	OK					
103.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"check that BOL_T_FPU is disabled"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	PM165380 (DP_EV_BOL_T_FPU) = Disabled			Leave TQD of PM165380 open to monitor during OBCP		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
104.	<p><i>During</i>  Z010999MCVT135_IST_PACS_FDIR  <i>At the prompt:</i>  "Wait until the end of the OBCP TM(5,1) with SPID 40145170 proclD 0x1208"</p> <p><i>Check that:</i></p> <p>⇒ PACS (APID=1152) is sending 3 event packets TM(5,2) EXCEPTION_REPORT_04 before OBCP Started event</p> <p>⇒ 2x TM(1,8) from APID 16 prior to OBCP start</p> <p>⇒ PM165380 (DP_EV_BOL_T_FPU) is enabled</p> <p>⇒ OBCP PACS_SAFE has been triggered – TM(5,1) with SPID 40148170 proclD 0x1208</p> <p>⇒ PM165380 (DP_EV_BOL_T_FPU) BOL_T_FPU is disabled again</p> <p>⇒ OBCP is OVER: TM(5,1) with SPID 40145170 proclD 0x1208</p> <p>⇒ Click the "OK" button to confirm</p>	PASS OK			Apart from checking the OBCP start and end events against the Proc ID, the other checks can be done off-line.		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
105.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"please check that PACS is in SAFE mode and that its MTL commands have been disabled"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>Subschedule</p> <p>80 OFF</p> <p>90 OFF</p> <p>OK</p>					
106.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"RECOVERY ACTION"</i></p> <p><i>⇒ Click the button "Confirm" to continue</i></p>	<p>CONFIRM</p>					
107.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"If still running, please terminate the sequence that keeps PACS in SCIENCE"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
108.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"Please filter TMPKT History for TM(8,6)"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>					
109.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"Please check in the report that PACS TC Routing is disabled"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PACS</p> <p>Gnd-LoPrio</p> <p>DISABLED</p>					
110.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"Please filter TMPKT History for TM(8,6)"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
111.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Please check in the report that PACS TC Routing is enabled"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>PACS Gnd-LoPrio ENABLED</p>					
112.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is enabled, then press OK"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>subschedules 80 OFF 90 ON</p>					
113.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"End of PACS SAFE OBCP TEST" "check that all EATs are enabled"</p> <p>⇒ Perform activity through D102159SCVT192_GET_EAT_REPORT and then click the "OK" button to confirm</p>	<p>PASS  OK</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
114.	<p><i>During</i> D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ Click the button "EndTS!" to proceed</p>	ENDTS					
115.	<p><i>During</i> P102999SCVT904_ASDGENPACS_NomSpect</p> <p>"FM PACS Simulate Spectroscopy for test in ANY conditions - abort TS if not correct: Choose Yes or No"</p> <p>⇒ Click the button "Yes" to confirm</p>	<p>YES</p> <p>Check that file in /HPCCS/VARIABLE/RESULTS/ &lt;test_session&gt;/TMDUMP/ /&lt;date-time&gt;VC1.txt is increasing.</p>			<p>Refer to RD-3 for current message and expected OOL.</p> <p>When PC012380 is sent proceed to next step Note: TC will remain pending until end of science</p>		
116.	<p><i>During</i> P102999SCVT904_ASDGENPACS_NomSpect</p> <p>"Set PACS(4) as active bus profile?"</p> <p>⇒ Click the button "Yes" to confirm</p>	YES					
117.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"TEST the PACS POWER CYCLE OBCP?"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM			<p>If SKIP, it continues at step 134.</p> <p>DB_OBCP_H_PACS_POWER_CYCLE is the OBCP under test.</p>		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
118.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"TRIGGER OBCP WITH START TC"</p> <p>⇒ <i>Click the button "Confirm to continue"</i></p>	CONFIRM					
119.	<p>Z010999MCVT135_IST_PACS_FDIR</p> <p>"Filter a TMPKT history for TM(5,1)"</p> <p>⇒ <i>Check script name and then click the button "OK" to confirm</i></p>	PASS OK					
120.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"sending EGSE_tcsend_CEV DCAST185 { DPV32185 90 } { DPV32185 0}"</p> <p>⇒ <i>click the "OK" button to confirm</i></p>	OK					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
121.	<p><i>During</i>            Z010999MCVT135_IST_PACS_FDIR  <i>At the prompt:</i>            "Wait until the end of the OBCP TM(5,1) with SPID 40145170 proclD 0x120A"  <i>Check that:</i>            ⇒ OBCP PACS_POWER_CYCLE has been triggered – TM(5,1) with SPID 40148170 proclD 0x120A</p> <p>⇒ TM(5,4) with Event ID = 0x2001, SID = 0 (as a result of the called-up "PACS normal off" OBCP)</p> <p>⇒ TM(5,4) with Event ID = 0x2000, SID = 0 (as a result of the called-up "PACS normal off" OBCP)</p> <p>⇒ TM(5,4) with Event ID = 0x2002, SID = 0</p> <p>⇒ OBCP is OVER: TM(5,1) with SPID 40145170 proclD 0x120A</p> <p>⇒ click the "OK" button to continue</p>	PASS OK			Please note that the execution time of the OBCP takes about 9 minutes and that after OK there will be another waiting time of 5 minutes for safety		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
122.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"please check that PACS is in SAFE mode and that its MTL commands have been disabled"</i></p> <p>⇒ <i>Perform activity and then click the "OK" button to confirm</i></p>	<p>Subschedule</p> <p>80 (meta-PACS) OFF</p> <p>90 (PACS TCs) OFF</p> <p>OK</p>					
123.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"RECOVERY ACTION"</i></p> <p>⇒ <i>Click the button "Confirm to continue"</i></p>	<p>CONFIRM</p>					
124.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"if still running, please terminate the sequence that keeps PACS in SCIENCE"</i></p> <p>⇒ <i>Perform activity and then click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
125.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Please filter TMPKT History for TM(8,6)"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					
126.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Please check in the report that PACS TC Routing is disabled"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>PACS</p> <p>Gnd-LoPrio</p> <p>DISABLED</p> <p>OK</p>					
127.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Please filter TMPKT History for TM(8,6)"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
128.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"Please check in the report that PACS TC Routing is enabled"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PACS Gnd-LoPrio ENABLED OK</p>					
129.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"Check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is enabled, then press OK"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>Subschedules 80 OFF 90 ON OK</p>					
130.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"End of PACS POWER CYCLE TEST. check that all EATs are enabled"</i></p> <p><i>⇒ Perform activity through D102159SCVT192_GET_EAT_REPORT and then click the "OK" button to confirm</i></p>	<p>PASS  OK</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
131.	<p><i>During</i>  <i>D102159SCVT192_GET_EAT_REPORT</i></p> <p>⇒ Click the button "EndTS!" to proceed</p>	ENDTS					
132.	<p><i>During</i>  <i>P102999SCVT904_ASDGENPACS_NomSpect</i></p> <p><i>"FM PACS Simulate Spectroscopy for test in ANY conditions - abort TS if not correct: Choose Yes or No"</i></p> <p>⇒ Click the button "Yes" to confirm</p>	<p>Check that file in            /HPCCS/VARIABLE/RESULTS/            &lt;test_session&gt;/TMDUMP/            /&lt;date-time&gt;VC1.txt is            increasing.</p> <p>YES</p>			<p>Refer to RD-3 for current message and expected OOL.</p> <p>When PC012380 is sent proceed to next step</p> <p>Note: TC will remain pending until end of science</p>		
133.	<p><i>During</i>  <i>P102999SCVT904_ASDGENPACS_NomSpect</i></p> <p><i>"Set PACS(4) as active"</i></p> <p>⇒ Click the button "Yes" to confirm</p>	CONFIRM					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
134.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"PACS NORMAL OFF OBCP"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM			<p>If SKIP, it continues at step 156.</p> <p>DB_OBCP_H_PACS_NORMAL_OFF is the OBCP under test.</p>		
135.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Execute PACS SCRIPT FOR AUTONOMY FUNCTION 17?"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					
136.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Calling script PACS_StartAutonomy_Function_17_OBS_Shell.tcl"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	OK			<p>If script is not correct, abort the test sequence</p>		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
137.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR <i>At the prompt:</i></p> <p><i>"Wait until the end of the OBCP TM(5,1) with SPID 40145170 proclD 0x120C"</i> <i>Check that:</i></p> <p>⇒ PACS is sending event packets TM(5,2) - BOLC power violated EXCEPTION_REPORT_0_25</p> <p>⇒ OBCP PACS_NORMAL_OFF has been triggered TM(5,1) with SPID 40148170 proclD 0x120C</p> <p>⇒ TM(5,4) with Event ID = 0x2001, SID = 0</p> <p>⇒ TM(5,4) with Event ID = 0x2000, SID = 0</p> <p>⇒ PACS goes OFF</p> <p>⇒ OBCP is OVER: TM(5,1) with SPID 40145170 proclD 0x120C</p> <p>⇒ <i>then click the "OK" button to confirm</i></p>	PASS  OK			Apart from start and end events checks, the other can be done offline.		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
138.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"Check that PACS is OFF and MTL TCs are disabled"</i></p> <p>⇒ <i>Perform activity and then click the "OK" button to confirm</i></p>	<p>Subschedules</p> <p>80 OFF</p> <p>90 OFF</p> <p>All PACS LCLs (27,41,35,65)</p> <p>OFF</p> <p>OK</p>					
139.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"check that all EATs are enabled except 0x006 for APIDs 0x0480 and 0x0481"</i></p> <p>⇒ <i>Perform activity from</i> D102159SCVT192_GET_EAT_REPORT <i>Then press OK</i></p>	<p>PASS</p> <p>OK</p>					
140.	<p><i>During</i> D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ <i>Click EndTS to continue</i></p>	<p>ENDTS</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
141.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p>"RECOVERY ACTION"</p> <p>⇒ Click the "Confirm" button to continue</p>	CONFIRM					
142.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p>"If still running, please terminate the sequence to keep PACS in SCIENCE"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	OK					
143.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p>"Please filter TMPKT History for TM(8,6)"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
144.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Please check in the report that PACS TC Routing is disabled"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PACS Gnd-LoPrio DISABLED</p> <p>OK</p>					
145.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Please filter TMPKT History for TM(8,6)"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>					
146.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Please check in the report that PACS TC Routing is enabled"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PACS Gnd-LoPrio ENABLED</p> <p>OK</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
147.	<p><i>During</i>                      Z010999MCVT135_IST_PACS_FDIR                      "check that all EATs are enabled"</p> <p>⇒ Perform activity from                      D102159SCVT192_GET_EAT_REPORT                      Then press OK</p>	<p>PASS</p> <p>OK</p>					
148.	<p><i>During</i>                      D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ Click EndTS to continue</p>	<p>ENDTS</p>					
149.	<p><i>During</i>                      Z010999MCVT135_IST_PACS_FDIR</p> <p>"Switching PACS ON"</p> <p>⇒ Click the "OK" button to confirm</p>	<p>OK</p>					
150.	<p><i>During</i>                      H102999SCV905_ASDGENPACS_PWR_ON_N</p> <p>"Power on PACS prime and enable MIL 1553 I/F.                      FM PACS Switch on in warm or cold conditions,                      FPU connected ... - Select NO to abort TS if not correct"</p> <p>⇒ Click the button "YES" to confirm</p>	<p>YES</p>			Refer to RD-3 for current message and expected OOL.		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
151.	<p><i>During P102999SCVT905_ASDISTPACS_PWR_ON_N</i></p> <p><i>PACS FDIR OBCPs/EATs loaded and enabled? If not select NO to abort TS. If not sure, check with D102159SCVT192_GET_EAT_REPORT. Then select "YES"</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES					
152.	<p><i>During P102999SCVT905_ASDISTPACS_PWR_ON_N</i></p> <p><i>"Set Bus Profile back to original setting?"</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES					
153.	<p><i>During P102999SCVT918_ASDISTPACS_MarkON</i></p> <p><i>"Mark PACS Units ON?"</i></p> <p><i>⇒ click "confirm" to continue</i></p>	CONFIRM					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
154.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Please check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is enabled Then press OK"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>Subschedules</p> <p>80 OFF</p> <p>90 ON</p> <p>OK</p>					
155.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"End of PACS NORMAL OFF TEST."</i></p> <p><i>⇒ click the "OK" button to confirm</i></p>	<p>OK</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
156.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"PACS IMMEDIATE OFF OBCP?"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM			<p>If SKIP, it continues at step 180.</p> <p>DB_OBCP_H_PACS_IMMEDIATE_OFF is the OBCP under test.</p>		
157.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Execute PACS script for clearing HK?"</p> <p>⇒ click the "Confirm" button to continue</p>	CONFIRM					
158.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Filter one TMPKT History for PACS HK and one for TM(5,1)"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	PASS OK			PACS APID 1152/1154		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
159.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>"check that PACS is sending no regular packets any more"</i></p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					
160.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p><i>At the prompt:</i> <i>"Wait until the end of the OBCP - TM(5,1) with SPID 40145170 proclD 0x120B</i></p> <p><i>Check that:</i></p> <p>⇒ OBCP PACS IMMEDIATE OFF has been triggered - TM(5,1) with SPID 40148170 proclD 0x120B</p> <p>⇒ PACS goes OFF</p> <p>⇒ OBCP is OVER: TM(5,1) with SPID 40145170 proclD 0x120B</p> <p>⇒ then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>			<p>NC3958 (evt Hifi Off)</p> <p>Expected: TM(5,1)- 0579 SDB PACS failed TM TM(5,2)-0586 SDB PACS non vital RT Sick TM TM(5,1) OBCP Started TM(5,1)-48 subschedule status changed 3x TM(5,1) Unit already marked OFF TM(5,1) OBCP ended</p>		

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
161.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Please check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is enabled Then press OK"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>Subschedules</p> <p>80 OFF</p> <p>90 ON</p> <p>OK</p>					
162.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"check that all EATs are enabled except 0x006 for APIDs 0x0480 and 0x0481"</p> <p>⇒ Perform activity from D102159SCVT192_GET_EAT_REPORT Then press OK</p>	<p>PASS</p> <p>OK</p>					
	<p><i>During</i> D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ Click EndTS to continue</p>	<p>ENDTS</p>					

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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
163.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"RECOVERY ACTION"</p> <p>⇒ <i>click Confirm to continue</i></p>	CONFIRM					
164.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"If still running, please terminate the sequence to keep PACS in SCIENCE"</p> <p>⇒ <i>Perform activity and then click the "OK" button to confirm</i></p>	OK			PACS SHOULD NOT BE IN SCIENCE		
165.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Please filter TMPKT History for TM(8,6)"</p> <p>⇒ <i>Perform activity and then click the "OK" button to confirm</i></p>	PASS  OK					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
166.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Please check in the report that PACS TC Routing is disabled"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PACS Gnd-LoPrio DISABLED</p> <p>OK</p>					
167.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Please filter TMPKT History for TM(8,6)"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>					
168.	<p><i>During Z010999MCVT135_IST_PACS_FDIR</i></p> <p><i>"Please check in the report that PACS TC Routing is enabled"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>PACS Gnd-LoPrio ENABLED</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
169.	<p><i>During</i>  Z010999MCVT135_IST_PACS_FDIR  "check that all EATs are enabled"</p> <p>⇒ Perform activity from  D102159SCVT192_GET_EAT_REPORT  Then press OK</p>	<p>PASS</p> <p>OK</p>					
170.	<p><i>During</i>  D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ Click EndTS to continue</p>	<p>ENDTS</p>					
171.	<p><i>During</i>  Z010999MCVT135_IST_PACS_FDIR</p> <p>"Switching PACS ON"</p> <p>⇒ Click the "OK" button to confirm</p>	<p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
172.	<p><i>During</i>  <i>P102999SCVT905_ASDISTPACS_PWR_ON_N</i></p> <p><i>"Power on PACS prime and enable MIL 1553 I/F. FM PACS Switch on in warm or cold conditions, FPU connected ... - Select NO to abort TS if not correct"</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES			Refer to Rd-3 for exact message and expected OOLs		
173.	<p><i>During</i>  <i>P102999SCVT905_ASDISTPACS_PWR_ON_N</i></p> <p><i>PACS FDIR OBCPs/EATs loaded and enabled?</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES					
174.	<p><i>During</i>  <i>P102999SCVT905_ASDISTPACS_PWR_ON_N</i></p> <p><i>"Set Bus Profile back to original setting?"</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
175.	<p><i>During</i>  <i>P102999SCVT918_ASDISTPACS_MarkON</i></p> <p>"Mark PACS Units ON?"</p> <p>⇒ click "confirm" to continue</p>	CONFIRM			Monitor ZAD1E999		
176.	<p><i>During</i>  <i>Z010999MCVT135_IST_PACS_FDIR</i></p> <p>"Please check that subschedule 80 (meta-PACS) is disabled and 90 (PACS TCs) is enabled Then press OK"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>80 OFF            90 ON</p> <p>OK</p>					
177.	<p><i>During</i>  <i>Z010999MCVT135_IST_PACS_FDIR</i></p> <p>"End of PACS IMMEDIATE OFF TEST"</p> <p>⇒ click the "OK" button to confirm</p>	OK					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
178.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"End of PACS FDIR TEST (PRIMARY) check that all EATs are enabled"</p> <p>⇒ Perform activity through D102159SCVT192_GET_EAT_REPORT and then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					
179.	<p><i>During</i> D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ Click the button "EndTS!" to proceed</p>	<p>ENDTS</p>					
180.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"RESET the starting condition"</p> <p>⇒ Click the button "Confirm" to continue</p>	<p>CONFIRM</p>					
181.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>" Terminate ALL_SubscribeParams.tcl"</p> <p>⇒ Perform activity and then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step-	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
182.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Check that PACS is ON but in no prime (STDBY)"</p> <p>⇒ Click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					
183.	<p><i>During</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>"Check that all subschedules from 1 to 256, plus 370 are enabled"</p> <p>⇒ Click the button "OK" to confirm</p>	<p>PASS</p> <p>OK</p>					
184.	<p><i>At end of</i> Z010999MCVT135_IST_PACS_FDIR</p> <p>⇒ Click the button "End TS!" to proceed</p>	<p>ENDTS</p>					

Test location:	Operator	Product-Assurance:	Date:
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7.5 SPIRE

Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
185.	<p><i>Callasync</i></p> <p><i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>to perform the SPIRE related part of the Instruments FDIR IST</i></p>	PASS					
186.	<p><i>During</i></p> <p><i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"PERFORM SPIRE FDIR TEST (PRIMARY)?"</i></p> <p><i>⇒ Click the button "Confirm" to continue</i></p>	CONFIRM			If SKIP, it exits the script		
187.	<p><i>During</i></p> <p><i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"Starting condition check"</i></p> <p><i>⇒ Click the button "Confirm" to continue</i></p>	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
188.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Please check that no instrument is in science. If so, put it in standby"</p> <p>⇒ Click the button "OK" to confirm</p>	<p>PASS</p> <p>OK</p>			RD-3 for details		
189.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"INITIAL S/C STATUS CHECK"</p> <p>⇒ Click the button "Confirm" to continue</p>	<p>CONFIRM</p>					
190.	<p><i>During</i> Z010999MCVT153_IST_STATUS</p> <p>"Do you want to stop and notice each failure"</p> <p>⇒ Click the button "NO" to continue</p>	<p>NO</p>					
191.	<p><i>During</i> Z010999MCVT153_IST_STATUS</p> <p>⇒ Check the Satellite State</p> <p>⇒ Click the button "OK" to continue</p>	<p>PASS</p> <p>OK</p>			Compare with AD-1 for chapter 5.8.13 of IST specification		

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
192.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Set SCBP to SPIRE Prime (3)"</p> <p>⇒ Click the button "confirm" to continue</p>	CONFIRM					
193.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Upload and enable dummy MTL with SPIRE connection test in subschedule 370"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					
194.	<p><i>During</i> D102159SCVT218_IST_SPIRE_MTL_PING</p> <p>"Check the parameters"</p> <p>⇒ Check that there is 1 SPIRE PING TC every 5 minutes starting within 15' for 10 hours</p> <p>⇒ Click the button "OK" to confirm</p>	<p>PASS</p> <p>OK</p>			120 TCs are expected.		
195.	<p><i>During</i> D102159SCVT218_IST_SPIRE_MTL_PING</p> <p>⇒ Click the button "EndTS!" to continue</p>	ENDTS					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
196.	Check that the MTL contains one SCL00500 (TEST CONNECTION) every 5 minutes for 10 hours in subschedule 370	PASS OK					
197.	During Z010999MCVT137_IST_SPIRE_FDIR_formal  "Check that subschedule 100 (meta-SPIRE) is disabled and 370 (SPIRE TCs) is enabled, then press OK"  ⇒ Perform activity and then click the "OK" button to confirm	Subschedules 100 OFF 370 ON  OK					
198.	During Z010999MCVT137_IST_SPIRE_FDIR_formal  "Wait for execution of the first command, then press OK"  ⇒ Click the button "OK" to continue	PASS OK					
199.	During Z010999MCVT137_IST_SPIRE_FDIR_formal  "Put SPIRE Primary in science"  ⇒ Click the button "Confirm" to continue	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
200.	<p>During  <b>S102999SCVT911_ASDDBGSPiR_STBY2OPS</b>                      "Command SPIRE from REDY to OPS mode in any conditions - select NO to abort TS"                      ⇒ Click the button "YES" to continue</p>	YES			Refer to RD-3 for correct message and expected OOLs.		
201.	<p>During  <b>S102999SCVT911_ASDDBGSPiR_STBY2OPS</b>                      "Bus profile left as SPIRE prime while in OPS mode"                      ⇒ Click the button "OK" to continue</p>	OK					
202.	<p>During                      Z010999MCVT137_IST_SPIRE_FDIR_formal                      " Check that SPIRE is producing science packets"                      ⇒ Click the button "OK" to continue</p>	PASS  OK			Check that file in /HPCCS/VARIABLE/RESULTS/<test_session>/TMDUMP/<date-time>VC1.txt is increasing. With TM from APID 1284		

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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
203.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"TEST the SPIRE OPE STOP FDIR?"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM			<p>If SKIP, it continues at step 211.</p> <p>DB_OBCP_H_SPIRE_OPE_STOP is the OBCP under test.</p> <p><u>IMPORTANT NOTE:</u> If the test of the SPIRE OPE STOP is executed then the SPIRE RESUME OBCP MUST be executed afterwards, too.</p>		
204.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"TRIGGER OBCP WITH SPIRE SCRIPT"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					
205.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Please filter one TMPKT History for APID 16 and type 5 and one for APID 1280 Type 5"</p> <p>⇒ Click the button "OK" to continue</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
206.	<p><i>During</i>  <i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"executing script SPIRE-OBCPTest-ObservationAnomaly.tcl"</i></p> <p><i>⇒ Click the button "OK" to confirm</i></p>	OK					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
207.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>at the prompt:</i> "Wait until the end of the OBCP TM(5,1) with SPID 40145170 proclD 0x116"</p> <p>⇒ Wait for ~5 seconds for the reception of TM(5,2) event report with APID 1280 Event ID 0xC100 and SID 0x5200</p> <p>⇒ check that OBCP SPIRE OPE STOP has been triggered - TM(5,1) with APID 16, SPID 40148170 proclD 0x1106</p> <p>⇒ TM(5,4) with APID 16 EvID 0x1003 SPIRE Operations Stopped" is received</p> <p>⇒ check that TM(5,1) with APID 16, SPID 40145170 proclD 0x1106 is received</p> <p>⇒ <i>Click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
208.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "please check SPIRE status and that subschedule 370 (SPIRE TCs) and 100 (meta-SPIRE) are disabled":</p> <p>⇒ check that SPIRE DRCU is ON</p> <p>⇒ check that SPIRE DPU is ON and generating nominal and critical HK</p> <p>⇒ check that subschedule 370 (SPIRE TCs) and 100 (meta-SPIRE) are disabled</p> <p>⇒ Click the "OK" button to confirm</p>	<p>LCL11 ON LCL51 ON</p> <p>TM (3,25) with APID 1280 = CRIT HK 1282 = NOM HK</p> <p>OK</p>					
209.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>"End of SPIRE OPE STOP TEST"</i> <i>"check that all EATs are enabled"</i></p> <p>⇒ Perform activity through D102159SCVT192_GET_EAT_REPORT and click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
210.	<p><i>During</i> D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ Click the button "EndTS!" to proceed</p>	ENDTS					
211.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Test SPIRE OPE RESUME OBCP?"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM			<p>If SKIP, it continues at step 221.</p> <p>DB_OBCP_H_SPIRE_OPE_RESUME is the OBCP under test.</p> <p>WARNING: if OPE STOP is performed, OPE RESUME MUST be performed before carrying on.</p>		
212.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Trigger OBCP with SPIRE script"</p> <p>⇒ click the button "Confirm" to continue</p>	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
213.	<p><i>During</i>  <i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"Please filter one TMPKT History for TM type 5"</i></p> <p><i>⇒ Perform activity then click the button "OK" to continue</i></p>	<p>PASS</p> <p>OK</p>					
214.	<p><i>During</i>  <i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"executing script SPIRE-OBCPTest-ObservationAnomalyCorrected.tcl "</i></p> <p><i>⇒ Click the button "OK" to confirm</i></p>	<p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
215.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "Wait until the end of the OBCP TM(5,1) with SPID 40145170 proclD 0x1107"</p> <p>⇒ Wait for ~5 seconds for the reception of TM(5,2) event report with Event ID 0xC110 and SID 0x5200</p> <p>⇒ check that OBCP SPIRE OPE RESUME has been triggered - TM(5,1) with APID 16, SPID 40148170 proclD 0x1107</p> <p>⇒ TM(5,4) with EvID 0x1004 "SPIRE Operations Resumed" is received</p> <p>⇒ check that TM(5,1) with APID 16, SPID 40145170 proclD 0x1107 is received"</p> <p>⇒ <i>Perform activities and then click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
216.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "please check the SPIRE status and that subschedule 370 (SPIRE TCs) is DISABLED and 100 (meta-SPIRE) is ENABLED"</p> <p>⇒ check that SPIRE DRCU is ON</p> <p>⇒ check that SPIRE DPU is ON and generating nominal and critical HK</p> <p>⇒ check that SPIRE is in PHOTOPS mode</p> <p>⇒ check that Photometer science data are being generated</p> <p>⇒ check that subschedule 370 (SPIRE TCs) is disabled and 100 (meta-SPIRE) is enabled "</p> <p>⇒ <i>Click the "OK" button to confirm</i></p>	<p>LCL11 ON LCL51 OFF File in /HPCCS/VARIABLE/RESULTS/ &lt;test_session&gt;/TMDUMP/ /&lt;date-time&gt;VC1.txt is increasing. With TM from APID 1284 Subschedules 370 OFF 100 ON</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
217.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"RECOVERY ACTION"</p> <p>⇒ Click Confirm to continue</p>	CONFIRM					
218.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>At the prompt: "please check status of SPIRE, that subschedule 370 (SPIRE TCs) is enabled and 100 (meta-SPIRE) is disabled"</p> <p>⇒ perform activity and then click the "OK" button to confirm</p>	<p>Subschedules 370 ON 100 OFF</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
219.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>"End of SPIRE OPE RESUME TEST"</i> <i>"check that all EATs are enabled"</i></p> <p>⇒ <i>Perform activity through</i> <i>D102159SCVT192_GET_EAT_REPORT</i> <i>then click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>					
220.	<p><i>During</i> D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ <i>Click the button "EndTS!" to proceed</i></p>	ENDTS					
221.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>"TEST the SPIRE DRCU OFF OBCP?"</i></p> <p>⇒ <i>Click the button "Confirm" to continue</i></p>	CONFIRM			<p>If SKIP, it continues at step 240.</p> <p>DB_OBCP_H_SPIRE_DRCU_OFF is the OBCP under test.</p>		

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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
222.	<p><i>During Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"TRIGGER OBCP WITH SPIRE SCRIPT"</i></p> <p><i>⇒ Click the button "confirm" to continue</i></p>	CONFIRM					
223.	<p><i>During Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"Please filter one TMPKT History for APID 16 and type 5 and one for APID 1280 Type 5 subtype 2"</i></p> <p><i>⇒ Click the button "OK" to continue</i></p>	PASS OK					
224.	<p><i>During Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"executing script SPIRE-OBCPTest-DRCUAnomaly.tcl "</i></p> <p><i>⇒ Click the "OK" button to confirm</i></p>	OK					

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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
225.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "Wait until the end of the OBCP TM(5,1) with SPID 40145170 proclD 0x1102"</p> <p>⇒ Wait for ~5 seconds for the reception of TM(5,2) event report with APID 1280, Event ID 0xC000 and SID 0x5200</p> <p>⇒ check that OBCP SPIRE DRCU OFF has been triggered - TM(5,1) with APID 16 SPID 40148170 proclD 0x1102</p> <p>⇒ TM(5,4) with APID 16, EvID 0x1000 SPIRE DRCU OFF" is received</p> <p>⇒ check that TM(5,1) with SPID 40145170 proclD 0x1102 is received</p> <p>⇒ <i>click the "OK" button to confirm</i></p>	<p>PASS</p> <p>OK</p>			<p>Expected : TM(5,4) for</p> <ul style="list-style-type: none"> <li>o MCU</li> <li>o SCU</li> <li>o DCU</li> </ul> <p>At DRCU OFF, also TM(5,4) with SID 5420.</p> <p>SVMCOPYTBLFAULT TM(5,1) and many OOLs also expected (TBD)</p>		

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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
226.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "please check SPIRE status and that subschedules 370 (SPIRE TCs) and 100 (meta-SPIRE) are disabled"</p> <p>⇒ Check that the DRCU has been powered off</p> <p>⇒ Check that the DPU is on and generating nominal and critical HK</p> <p>⇒ subschedules 370 (SPIRE TCs) and 100 (meta-SPIRE) are disabled"</p> <p>⇒ Click the "OK" button to confirm</p>	<p>LCL51 OFF</p> <p>LCL11 ON</p> <p>1282 producing NOMHK</p> <p>1280 producing CRITHK</p> <p>Subschedules</p> <p>370 OFF</p> <p>100 OFF</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
227.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "check that all EATs are enabled except 0xC110 for APIDs 0x0500 and 0x0501"</p> <p>⇒ Perform activity through D102159SCVT192_GET_EAT_REPORT then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					
228.	<p><i>During</i> D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ click the "EndTS" button to continue</p>	<p>ENDTS</p>					
229.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"RECOVERY ACTION"</p> <p>⇒ Click the button "confirm" to continue</p>	<p>CONFIRM</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
230.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "check that all EATs are enabled"</p> <p>⇒ Perform activity through D102159SCVT192_GET_EAT_REPORT then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					
231.	<p><i>During</i> D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ click the "EndTS" button to continue</p>	<p>ENDTS</p>					
232.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Switching SPIRE OFF"</p> <p>⇒ Click the button "OK" to confirm</p>	<p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
233.	<p><i>During</i> S102999SCVT019_ASDGENSPIR_PWR_OFF_P</p> <p>"SPIRE switch off for IST activities in any condition"</p> <p>⇒ Click the button "YES" to continue</p>	YES			<p>TC SCD06505 to switch off DRCU expected to fail.</p> <p>See RD-3 for exact message and expected OOLs.</p>		
234.	<p><i>During</i> S102999SCVT019_ASDGENSPIR_PWR_OFF_P</p> <p>"Set Bus profile back to original settings"</p> <p>⇒ Click the button "YES" to continue</p>	YES					
235.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Switching SPIRE ON"</p> <p>⇒ Click the button "OK" to confirm</p>	OK					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
236.	<p><i>During S102999SCVT017_ASDGENSPIR_PWR_ON_P</i></p> <p><i>"Power on SPIRE prime and enable MIL 1553 I/F. FM SPIRE Switch on for IST activities in any conditions... - Select NO to abort TS if not correct"</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES			See RD-3 for exact message and expected OOLs.		
237.	<p><i>During S102999SCVT017_ASDGENSPIR_PWR_ON_P</i></p> <p><i>"Set Bus Profile back to original setting?"</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES					
238.	<p><i>During Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"Please check that subschedule 370 (SPIRE TCs) is enabled and 100 (meta-SPIRE) is disabled"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>Subschedules</p> <p>370 ON</p> <p>100 OFF</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
239.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"End of SPIRE DRCU OFF TEST "</p> <p>⇒ click the "OK" button to confirm</p>						
240.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"TEST the SPIRE OFF CONTROLLED OBCP?"</p> <p>⇒ Click the button "Confirm to continue</p>	CONFIRM			<p>If SKIP, it continues at step 259.</p> <p>DB_OBCP_H_SPIRE_OFF_CTRL is the OBCP under test.</p>		
241.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"TRIGGER OBCP "</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
242.	<p><i>During</i>  <i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"Please filter one TMPKT History for TM(5,1) and one for TM(5,4)"</i></p> <p><i>⇒ Click the button "OK" to continue</i></p>	<p>PASS</p> <p>OK</p>					
243.	<p><i>During</i>  <i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"Please callasync the sequence to trigger SPIRE OFF CONTROLLED"</i></p> <p><i>⇒ Click the button "OK" to confirm</i></p>	<p>PASS</p> <p>OK</p>			<p>Callasync            SPIRE_OBCPTest_OFFCTRL_trigger            And wait for end of NOM and CRIT HK.</p>		

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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
244.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "Wait until the end of the OBCP -TM(5,1) with SPID 40145170 proclD 0x1104"</p> <p>⇒ check that OBCP SPIRE OFF CONTROLLED has been triggered - TM(5,1) with SPID 40148170 proclD 0x1104,</p> <p>⇒ TM(5,4) EvID0x1002 SPIRE Shutdown" is received</p> <p>⇒ check that TM(5,1) with SPID 40145170 proclD 0x1104 is received</p> <p>⇒ Click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>			<p>Expected: TM(5,1)-0578 SDB SPIRE Failed TM TM(5,2)-0585 SDB SPIRE nom RT sick TM TM(5,1) – subschedule status changed</p>		

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
245.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "Please check SPIRE status and that subschedules 370 (SPIRE TCs) and 100 (meta-SPIRE) are disabled"</p> <p>⇒ Check that both the SPIRE DRCU and DPU have been switched off</p> <p>⇒ Check that subschedules 370 (SPIRE TCs) and 100 (meta-SPIRE) are disabled</p> <p>⇒ Click the "OK" button to confirm</p>	<p>LCL 51 and 11 OFF</p> <p>Subschedules 370 OFF</p> <p>100 OFF</p> <p>OK</p>					
246.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "check that all EATs are enabled except 0xC110 for APIDs 0x0500 and 0x0501"</p> <p>⇒ Perform activity through D102159SCVT192_GET_EAT_REPORT then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
247.	<p><i>During</i>  D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ <i>click the "EndTS" button to continue</i></p>	ENDTS					
248.	<p><i>During</i>  Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"RECOVERY ACTION"</p> <p>⇒ <i>Click the button "Confirm" to continue</i></p>	CONFIRM					
249.	<p><i>During</i>  Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i>  "check that all EATs are enabled"</p> <p>⇒ <i>Perform activity through</i>  D102159SCVT192_GET_EAT_REPORT  <i>then click the "OK" button to confirm</i></p>	PASS  OK					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
250.	<p><i>During</i>  D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ <i>click the "EndTS" button to continue</i></p>	ENDTS					
251.	<p><i>During</i>  Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Switching SPIRE ON"</p> <p>⇒ <i>click "OK" to confirm</i></p>	OK					
252.	<p><i>During</i>  S102999SCVT017_ASDGENSPIR_PWR_ON_P</p> <p>"Power on SPIRE prime and enable MIL 1553 I/F. FM SPIRE Switch on for IST activities in any conditions ... - Select NO to abort TS if not correct"</p> <p>⇒ <i>Click the button "YES" to confirm</i></p>	YES			Refer to RD-3 for correct message and expected OOLs.		

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
253.	<p><i>During S102999SCVT017_ASDGENSPIR_PWR_ON_P</i></p> <p><i>"Set Bus Profile back to original setting?"</i></p> <p><i>⇒ Click the button "YES" to confirm</i></p>	YES					
254.	<p><i>During Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"Please check that subschedule 370 (SPIRE TCs) is enabled and 100 (meta-SPIRE) is disabled and then press OK"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>Subschedules</p> <p>370 ON</p> <p>100 OFF</p> <p>OK</p>					
255.	<p><i>During Z102999SCVT008_ASDGEN_SPIRESTBY2OPS</i></p> <p><i>"Command SPIRE from REDY to OPS mode in any condition – Select NO to abort TS if not correct"</i></p> <p><i>⇒ Click the "YES" button to confirm</i></p>	YES			Refer to RD-3 for correct message and expected OOLs.		

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
256.	<p><i>During</i> S102999SCVT911_ASDDBGSPiR_STBY2OPS</p> <p>"Bus profile left as SPIRE PRIME while in OPS mode"</p> <p>⇒ Click the button "OK" to continue</p>	OK					
257.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Check that SPIRE is producing Science packets"</p> <p>⇒ Perform the activity and click the button "OK" to continue</p>	<p>PASS</p> <p>OK</p>			<p>Check that file in /HPCCS/VARIABLE/RESULTS/&lt;test_session&gt;/TMDUMP/&lt;date-time&gt;VC1.txt is increasing. With TM from APID 1284</p>		
258.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"End of SPIRE OFF CONTROL TEST "</p> <p>⇒ click the "OK" button to confirm</p>	OK					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
259.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"TEST the SPIRE OFF (DLL) OBCP?"</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM			<p>If SKIP, it continues at step 284.</p> <p>DB_OBCP_H_SPIRE_OFF is the OBCP under test.</p>		
260.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"SPIRE OFF DLL FDIR triggering</p> <p>⇒ Click the button "Confirm" to continue</p>	CONFIRM					
261.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Please filter one TMPKT History for TM(5,1) and one for TM(5,4)"</p> <p>⇒ Perform activity, then click the button "OK" to continue</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
262.	<p><i>During</i>  <i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"start the SPIRE (RT 21) simulation on the CDMU SCOE to create jamming"</i></p> <p><i>⇒ Click the button "OK" to proceed</i></p>	OK					
263.	<p><i>On CDMS SCOE</i></p> <p><i>Double-click on the link "StartSCOE.bat" on the desktop to start the CDMU SCOE application.</i></p>	PASS					
264.	<p><i>On CDMS SCOE</i></p> <p><i>Select Menu:</i>  <i>Mode ⇒ Local Mode</i>  <i>Password: H-P</i></p>	PASS					
265.	<p><i>On CDMS SCOE</i></p> <p><i>Select from menu:</i>  <i>Setup ⇒ RTSim Configuration</i></p>	PASS					
266.	<p><i>On CDMS SCOE</i></p> <p><i>Select file:</i>  <i>R:\(192.168.90.32)\Herschel.rtc</i></p> <p><i>and then click the button "OK"</i></p>	PASS					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
267.	On CDMS SCOE  Select from menu: Mode⇒ On Line	PASS					
268.	On CDMS SCOE  In window: "System Control/RT controls": ⇒ Select RT21 ⇒ Click the button "Enable" for: - control - TM queue - TC queue And after 8 seconds proceed immediately with next step	PASS			Don't stay longer than 8 seconds, since the FDIR might keep on triggering and reconfigure the spacecraft.  Can be stopped as soon as the OBCP started TM is received		
269.	On CDMS SCOE  In window: "System Control/RT controls" Click the button "DISABLE" for: - control - TM queue - TC queue	PASS			To be performed within 8 seconds!!!		

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
270.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "Wait until the end of the OBCP -TM(5,1) with SPID 40145170 proclD 0x1103"</p> <p>⇒ check that OBCP SPIRE OFF has been triggered - TM(5,1) with SPID 40148170 proclD 0x1103,</p> <p>⇒ TM(5,4) EvID 0x1001 SPIRE Switched OFF" is received</p> <p>⇒ check that TM(5,1) with SPID 40145170 proclD 0x1103 is received</p> <p>⇒ Click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>			<p>Expected: TM(5,1) SDB unhealthy TM(5,2)-0552 SPIRE non vital RT Invalid TM(5,1) subschedule status changed</p>		

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
271.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "Please check SPIRE status and that subschedules 370 (SPIRE TCs) and 100 (meta-SPIRE) are disabled"</p> <p>⇒ check that SPIRE is OFF</p> <p>⇒ check that subschedules 370 (SPIRE TCs) and 100 (meta-SPIRE) are disabled</p> <p>⇒ Click the "OK" button to confirm</p>	<p>LCL 51 and 11 OFF Subschedules 370 OFF 100 OFF</p> <p>OK</p>					
272.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>At the prompt:</i> "check that all EATs are enabled except 0xC110 for APIDs 0x0500 and 0x0501"</p> <p>⇒ Perform activity through D102159SCVT192_GET_EAT_REPORT then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
273.	<p><i>During</i>  D102159SCVT192_GET_EAT_REPORT</p> <p>⇒ click the "EndTS" button to continue</p>	ENDTS					
274.	<p><i>During</i>  Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"RECOVERY ACTION"</p> <p>⇒ Click the button " confirm" to continue</p>						
275.	<p><i>During</i>  Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>At the prompt:  "check that all EATs are enabled"</p> <p>⇒ Perform activity through  D102159SCVT192_GET_EAT_REPORT  then click the "OK" button to confirm</p>	<p>PASS</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
276.	<p><i>During</i>  <i>D102159SCVT192_GET_EAT_REPORT</i></p> <p>⇒ <i>click the "EndTS" button to continue</i></p>	ENDTS					
277.	<p><i>During</i>  <i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"set the CDMS SCOE OFF LINE"</i></p> <p>⇒ <i>Perform the activities of the next step, then click the button "OK"</i></p>	<p>PASS</p> <p>OK</p>					
278.	<p><i>On CDMS SCOE</i></p> <p><i>Select from menu:</i></p> <p><i>Mode ⇒ Off Line</i></p>	PASS					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
279.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p>"Switching SPIRE ON"</p> <p>⇒ Click the button "OK" to continue</p>	OK					
280.	<p><i>During</i> S102999SCVT017_ASDGENSPIR_PWR_ON_P</p> <p>"Power on SPIRE prime and enable MIL 1553 I/F. FM SPIRE Switch on for IST activities in any conditions ... - Select NO to abort TS if not correct"</p> <p>⇒ Click the button "YES" to confirm</p>	YES			Refer to RD-3 for correct message and expected OOLs.		
281.	<p><i>During</i> S102999SCVT017_ASDGENSPIR_PWR_ON_P</p> <p>"Set Bus Profile back to original setting?"</p> <p>⇒ Click the button "YES" to confirm</p>	YES					

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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
282.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>"Please check that subschedule 370 (SPIRE TCs) is enabled and 100 (meta-SPIRE) is disabled and then press OK"</i></p> <p><i>⇒ Perform activity and then click the "OK" button to confirm</i></p>	<p>Subschedules 370 ON 100 OFF</p> <p>OK</p>					
283.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>"End of SPIRE FDIR TEST "</i></p> <p><i>⇒ click the "OK" button to continue</i></p>	OK					
284.	<p><i>During</i> Z010999MCVT137_IST_SPIRE_FDIR_formal</p> <p><i>"RESET the STARTING CONDITION"</i></p> <p><i>⇒ Click the button "Confirm" to continue</i></p>	CONFIRM					

Test location:	Operator	Product-Assurance:	Date:
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Step -No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
285.	<p><i>During</i>  <i>Z010999MCVT137_IST_SPIRE_FDIR_formal</i></p> <p><i>"Check that all subschedules from 1 to 256 plus the 370 are enabled</i></p> <p><i>⇒ Click the button "OK" to continue</i></p>	<p>Subschedules            1-256 ON            370 ON            Others OFF</p> <p>OK</p>					

Test location:	Operator	Product-Assurance:	Date:
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7.6 Specific Post-Test Activities

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1.	<p><i>During</i> Z010999MCVT131_IST_INSTR_FDIR</p> <p>"Start the instrument specific FDIR sequence"</p> <p>⇒ click the "OK" button to proceed</p>	OK					
2.	<p><i>During</i> Z010999MCVT131_IST_INSTR_FDIR</p> <p>"End of INSTRUMENTS FDIR Tests. Select OK to switch off"</p> <p>⇒ click the "OK" button to proceed</p>	OK			Perform this test step AFTER ALL the relevant FDIR tests have been performed		
3.	<p><i>During</i> Z010999MCVT131_IST_INSTR_FDIR</p> <p>"Check that all EATs are enabled"</p> <p>⇒ perform activity through D102159SCVT192_GET_EAT_REPORT then click the "OK" button to proceed</p>	PASS  OK					

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
4.	<i>During</i> D102159SCVT192_GET_EAT_REPORT ⇒ Click the button "EndTS!" to proceed	ENDTS					
5.	<i>During</i> Z010999MCVT131_IST_INSTR_FDIR "RESET to the original SCBP?" ⇒ Click the button "Confirm to continue"	CONFIRM					
6.	<i>During</i> Z010999MCVT131_IST_INSTR_FDIR "POWER OFF HIFI PRIMARY" ⇒ Click the button "Confirm" to continue	CONFIRM			Refer to RD-3 for correct message and expected OOLs.		
7.	<i>During</i> Z010999MCVT131_IST_INSTR_FDIR "POWER OFF PACS PRIMARY" ⇒ Click the button "Confirm" to continue	CONFIRM					

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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
8.	<p><i>During</i> P102999SCVT906_ASDISTPACS_PWR_OFF_N</p> <p>"FM PACS Swith off in Warm or Cold conditions, FPU connected"</p> <p>⇒ click the "Yes" button to proceed</p>	YES			Refer to RD-3 for correct message and expected OOLs		
9.	<p><i>During</i> P102999SCVT906_ASDISTPACS_PWR_OFF_N</p> <p>"Set Bus Profile back to original setting?"</p> <p>⇒ click the "Yes" button to proceed</p>	YES					
10.	<p><i>During</i> Z010999MCVT131_IST_INSTR_FDIR</p> <p>"POWER OFF SPIRE PRIMARY"</p> <p>⇒ Click the button "Confirm" to continue</p>						
11.	<p><i>During</i> S102999SCVT019_ASDGENSPIR_PWR_OFF_P</p> <p>"SPIRE swith off for IST activities in any conditions"</p> <p>⇒ click the "Yes" button to proceed</p>						

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
12.	<p><i>During</i> S102999SCVT019_ASDGENSPIR_PWR_OFF_P</p> <p>"Set BUS profile back to original setting"</p> <p>⇒ click the "Yes" button to proceed</p>	YES					
13.	<p><i>During</i> Z010999MCVT131_IST_INSTR_FDIR</p> <p>"Bring the S/C into a SAFE mode and switch OFF"</p> <p>⇒ Click the button "OK" to continue</p>	OK			<p>The IST_END sequence shall be called-up. Therefore, continue with chapter 7.4 of RD4. step 1.</p>		

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## 7.7 S/C Power OFF

Follow the steps in the power OFF procedure of RD4, 7.4 - step 1.

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## 8 Script Hierarchy

### 8.1 Master script

```
Z010999MVCVT131_IST_INSTR_FDIR
  A102109SPVT202_ACMS_STATUS_H
  D102159SCVT138_IST_LAUNCH_SUNACQ
  D102159SCVT137_IST_SUNACQ_NOM
  W102584SPVT101_PCDU_TRANSITION_FDIR
  Z102999SCVT001_SREM_ON
  Z102999SCVT014_ASDGEN_HIFIPWRON_P
  Z102999SCVT010_ASDGEN_PACSPWRON_P
  Z102999SCVT004_ASDGEN_SPIREPWRON_P
  D102159SCVT193_IST_UPLOAD_OBCP
  D102159SCVT192_IST_UPLOAD_EAT
  D102159SCVT192_GET_EAT_REPORT.tcl
  Z010999MVCVT004_IST_END
```

### 8.2 HIFI script

```
Z010999MVCVT134_IST_HIFI_FDIR
  Z010999MVCVT153_IST_STATUS
  D102159SCVT214_IST_HIFI_MTL_PING
  D102159SCVT192_GET_EAT_REPORT
  Z102999SCVT014_ASDGEN_HIFIPWRON_P
  D102159SCVT192_GET_EAT_REPORT
```

### 8.3 PACS script

```
Z010999MVCVT135_IST_PACS_FDIR
  Z010999MVCVT153_IST_STATUS
  D102159SCVT215_IST_PACS_MTL_PING
  Z102999SCVT019_ASDGEN_PACSNomSpect
  Z102999SCVT019_ASDGEN_PACSNomSpect
  D102159SCVT192_GET_EAT_REPORT
  Z102999SCVT019_ASDGEN_PACSNomSpect
  D102159SCVT192_GET_EAT_REPORT
  Z102999SCVT011_ASDGEN_PACSPWROFF_P
  Z102999SCVT010_ASDGEN_PACSPWRON_P
  Z102999SCVT019_ASDGEN_PACSNomSpect
  D102159SCVT192_GET_EAT_REPORT
  Z102999SCVT010_ASDGEN_PACSPWRON_P
  Z102999SCVT019_ASDGEN_PACSNomSpect
  D102159SCVT192_GET_EAT_REPORT
  PACS_Disable_HK_OBS_Shell
  D102159SCVT192_GET_EAT_REPORT
  Z102999SCVT010_ASDGEN_PACSPWRON_P
```

## 8.4 SPIRE script

```
Z010999MCVT137_IST_SPIRE_FDIR_formal
Z010999MCVT153_IST_STATUS
D102159SCVT218_IST_SPIRE_MTL_PING
Z102999SCVT008_ASDGEN_SPIRESTBY2OPS
D102159SCVT192_GET_EAT_REPORT
D102159SCVT192_GET_EAT_REPORT
Z102999SCVT005_ASDGEN_SPIREPWROFF_P
Z102999SCVT004_ASDGEN_SPIREPWRON_P
Z102999SCVT008_ASDGEN_SPIRESTBY2OPS
D102159SCVT192_GET_EAT_REPORT
Z102999SCVT004_ASDGEN_SPIREPWRON_P
Z102999SCVT008_ASDGEN_SPIRESTBY2OPS
D102159SCVT192_GET_EAT_REPORT
D102159SCVT192_GET_EAT_REPORT
```

## 9 Summary Sheets

### 9.1 Procedure Variation Summary

	Test Change	Curr. No.:	
		Date	
		Page	of
Test designation	Test Procedure HP-2-ASED-TP-0197	Issue 1	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) and SPR Summary

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

NCR/SPR	NCR/SPR - Title	Date	Open Closed	PA sig.

NCR/SPR	NCR/SPR - Title	Date	Open Closed	PA sig.

Table 9.2-1: Non-Conformance Record Sheet

### 9.3 Sign-off Sheet

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

	Date	Signature
<b>Test Director</b>		
<b>Test Conductor</b>		
<b>PA Responsible</b>		

**10 Session Record**

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

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

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

END OF DOCUMENT

Distribution List

	Name	Dep./Comp.		Name	Dep./Comp.
	Alberti von Mathias Dr.	ASG23		Reichle Konrad	ASA42
	Baldock Richard	FAE12	X	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	X	Sonn Nico	ASG51
X	Fricke Wolfgang Dr.	AED 65		Steininger Eric	AED32
	Geiger Hermann	ASA42	X	Stritter Rene	AED11
	Grasl Andreas	OTN/ASA44		Suess Rudi	OTN/ASA44
	Grasshoff Brigitte	AET12		Theunissen Martijn	DSSA
X	Hamer Simon	Terma	X	Vascotto Riccardo	HE Space
	Hanka, Erhard	FI552		Wagner Klaus	ASG23
	Hendrikse Jeffrey	HE Space		Wietbrock Walter	AET12
X	Hendry David	Terma		Wöhler Hans	ASG23
	Hengstler Reinhold	ASA42		Wössner Ulrich	ASE252
	Hinger Jürgen	ASG23		Zumstein Armin	ASQ42
X	Hohn Rüdiger	AED65			
	Hölzle Edgar Dr.	AED32			
X	Hopfgarten Michael	AED32			
	Huber Johann	ASA42			
	Hund Walter	ASE252		Alcatel Alenia Space Cannes	AAS-F
X	Idler Siegmund	AED312		Alcatel Alenia Space Torino	AAS-I
	Ivány von András	FAE12		ESA/ESTEC	ESA
	Jahn Gerd Dr.	ASG23			
	Kalde Clemens	ASM2		<b>Instruments:</b>	
	Kettner Bernhard	AET42	X	MPE (PACS)	MPE
X	Klenke Uwe	ASG72	X	RAL (SPIRE)	RAL
	Knoblauch August	AET32	X	SRON (HIFI)	SRON
X	Koelle Markus	ASA43			
X	Koppe Axel	AED312			
	Kroeker Jürgen	AED65		<b>Subcontractors:</b>	
X	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
X	Much Christoph	ASA43		EADS CASA Espacio	CASA
	Müller Jörg	ASA42		EADS CASA Espacio	ECAS
X	Müller Martin	ASA43		European Test Services	ETS
	Pietroboni Karin	AED65		Patria New Technologies Oy	PANT
	Platzer Wilhelm	AED2		SENER Ingenieria SA	SEN