

Load a new OBSM image from the BSW
 File: H_FCP_SPI_RLBM.xls
 Author: L.Lucas-hp



Procedure Summary

Objectives

The objective of this procedure is to load a new OBSW image via the Boot Software for the Redundant DPU
 This is done in a number of steps

- Check initial conditions (LCLs off)
- CDMS Routing
- Switch on DPU
 - Disable FDIR & Enable RT Interrogations
 - Power on DPU (LCLs on)
 - Re-enable SDB FDIR
- Load new OBSW
 - Boot DPU
 - Verify
- Re-enable FDIR

Summary of Constraints

INPUT:

- Has the software image been supplied?
- Expected ASW version?

Spacecraft Configuration

Start of Procedure

SPIRE is OFF

End of Procedure

SPIRE is in DPU_ON mode

Reference File(s)

Input Command Sequences

Output Command Sequences

HFSRLBM

Referenced Displays

ANDs **GRDs** **SLDs**
 ZAZ96999

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
18/01/08		1	Created	R. Biggins	
19/05/08	1	2	Updates due to SVT-1 testing: - TC to start RT interrogations updated (step 4.3) - TC to enable SDB FDIR moved from step 6 to step 4.5 - flags updated - comments added/updated - AND updated for all TM parameters	R. Biggins	
04/03/09		2.01	Validation : Checking if Updtes required	L.Lucas-hp	

Status : Version 5 - Unchanged
 Last Checkin: 20/04/09

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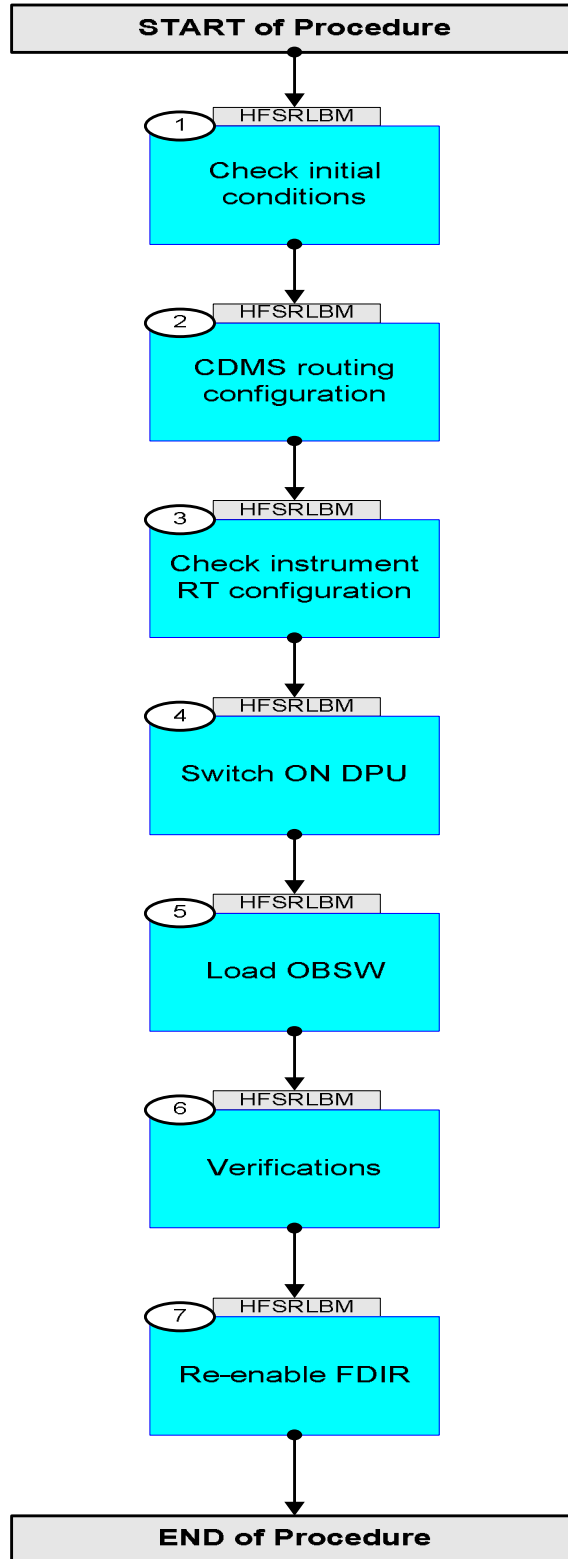


04/03/09		3	Amended FDIR command in light of SVT2	L.Lucas-hp	
04/03/09	2.1	3.01	Validation : Text checks	L.Lucas-hp	
06/04/09		4	Update of FDIR actions and added re-enable FDIR after boot PDU and verification.	L.Lucas-hp	
20/04/09	2.3	5	FDIR Updated	L.Lucas-hp	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
TC Seq. Name : HFSRLBM (Load OBSM - BSW)				
TimeTag Type: N				
Sub Schedule ID:				
□				
1		Check initial conditions		Next Step: 2
1.1		SPIRE input		□
		Verify that the correct information has been supplied by the ICC: Software Image (verify with OBSM engineer)		
		Verify that the expected DPU software version number has been supplied by the SPIRE ICC (Step 7)		
1.2		Bus status		□
		Verify Bus configuration		
		Verify: Active 1553 bus Active_Bus_A_B DEFJ1160 = BUS_A		AND=ZAZ96999
		Verify: 1553 bus FDIR status SDB_FDIR DEFJ4160 = ENABLED		AND=ZAZ96999
		Verify: SDB handling status BSW_SDB_ENAB DEF60160 = ENABLED		AND=ZAZ96999
		Verify bus health status		
		Verify: Bus (side A) health status BusA_HealthySts DEFJ2160 = Healthy		AND=ZAZ96999
		Verify: Bus (side B) health status BusB_HealthySts DEFJ3160 = Healthy		AND=ZAZ96999
1.3		Redundant instrument LCLs		□
		Verify: DPU LCL status SpirHsdR_L12_1S WM82C565 = OFF		AND=ZAZ96999
		Verify: FCU LCL status SpirHsfr_L52_1S WM72C565 = OFF		AND=ZAZ96999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
1.4		Nominal instrument LCLs		<input type="checkbox"/>
		Verify: DPU LCL status SpirHsdN_L11_1S WM32C565	= OFF	AND=ZAZ96999
		Verify: FCU LCL status SpirHsfN_L51_1S WM42C565	= OFF	AND=ZAZ96999
1.5		Temperature		<input type="checkbox"/>
		TBD		
2		CDMS routing configuration		Next Step: 3
2.1		Verify Packet Routing		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand RepDownlinkTMStorage Subsch. ID : 10 Det. descr. : Report Telemetry Packets Down-linking/ Storage Status	DC141160	
		Verify Packet Reception Telemetry Packets DownLinking-Storage Status Report Packet Details: APID: 16 Type: 14 Subtype: 7 PI1: PI2:	(14,7)-1400	
3		Check instrument RT configuration		Next Step: 4
3.1		Remote Terminal configuration		<input type="checkbox"/>
		Verify Telemetry SPIRE_VitalNonV DED52161	= NonVital	AND=ZAZ96999
		Verify Telemetry SPIRE_TmRetry DED54161	= ON	AND=ZAZ96999
3.2		Remote Terminal Status		<input type="checkbox"/>
		Redundant units		
		Verify Telemetry SPIREB_OnOff DED21161	= OFF	AND=ZAZ96999

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		Verify Telemetry SPIREB_DeadAliv DED22161	= Alive	AND=ZAZ96999
		Verify Telemetry SPIREB_WellsiTC DED23161	= Well	AND=ZAZ96999
		Verify Telemetry SPIREB_WellsiTM DED24161	= Well	AND=ZAZ96999
		Verify Telemetry SPIREB_ValidInv DED25161	= Invalid	AND=ZAZ96999
		Nominal units		
		Verify Telemetry SPIREA_OnOff DED1G161	= OFF	AND=ZAZ96999
		Verify Telemetry SPIREA_DeadAliv DED1H161	= Alive	AND=ZAZ96999
		Verify Telemetry SPIREA_WellsiTC DED1Z161	= Well	AND=ZAZ96999
		Verify Telemetry SPIREA_WellsiTM DED1J161	= Well	AND=ZAZ96999
		Verify Telemetry SPIREA_ValidInv DED1K161	= Invalid	AND=ZAZ96999
4		Switch ON DPU		Next Step: 5
		WARNING: Before continuing the procedure H_FCP_OBS_5112 (as defined in step 5) should be loaded onto the stack so that the BOOT_DPU telecommand executes 10 seconds after the last MEMORY_LOAD telecommand is sent.		
4.1		Set Bus Profile		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand SelectActiveSCBP Command Parameter(s) : SCBP DH049160 Subsch. ID : 10 Det. descr. : Select Active SCBP from SCBP Table	DC819160 SCBP_03	
		Verify Telemetry BSW_SDB_ActProf DEF5F160	= 3 <dec>	AND=ZAZ96999
4.2		Disable FDIR & Start instrument RT interrogations		<input type="checkbox"/>

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		WARNING: The following TC disables the SDB FDIR for the WHOLE spacecraft . Since there is no other alternative to the switch on sequence, it is vital that the FDIR is disabled for as short a time as possible.																																																																																															
	ET=+ UT=+00.00.00	Execute Telecommand ConfiguresDBFDIR Command Parameter(s) : <table border="0"> <tr><td>RTA</td><td>DH011161</td><td>SPIRE B</td></tr> <tr><td>M0</td><td>DH030161</td><td>Update status</td></tr> <tr><td>M1</td><td>DH031161</td><td>Ignore Flag</td></tr> <tr><td>M2</td><td>DH032161</td><td>Ignore Flag</td></tr> <tr><td>M3</td><td>DH033161</td><td>Ignore Flag</td></tr> <tr><td>M4</td><td>DH034161</td><td>Update status</td></tr> <tr><td>M5</td><td>DH035161</td><td>Ignore Flag</td></tr> <tr><td>M6</td><td>DH036161</td><td>Update status</td></tr> <tr><td>M7</td><td>DH037161</td><td>Ignore Flag</td></tr> <tr><td>F0</td><td>DH018161</td><td>ON</td></tr> <tr><td>F1</td><td>DH019161</td><td>Alive</td></tr> <tr><td colspan="3"> </td></tr> <tr><td>F2</td><td>DH020161</td><td>Well TC</td></tr> <tr><td>F3</td><td>DH021161</td><td>Well TM</td></tr> <tr><td>F4</td><td>DH022161</td><td>Valid</td></tr> <tr><td>F5</td><td>DH023161</td><td>Non-vital</td></tr> <tr><td>F6</td><td>DH024161</td><td>REDUNDANT</td></tr> <tr><td>F7</td><td>DH025161</td><td>ON</td></tr> <tr><td>M12</td><td>DH051161</td><td>Ignore Flag</td></tr> <tr><td>M_C</td><td>DH043161</td><td>Ignore CNT</td></tr> <tr><td>M8</td><td>DH038161</td><td>Ignore Flag</td></tr> <tr><td>M9</td><td>DH039161</td><td>Ignore Flag</td></tr> <tr><td>M10</td><td>DH040161</td><td>Ignore Flag</td></tr> <tr><td>M11</td><td>DH041161</td><td>Update status</td></tr> <tr><td>F12</td><td>DH050161</td><td>ENABLED</td></tr> <tr><td>CNT</td><td>DH042161</td><td>LoopCnt1</td></tr> <tr><td>F8</td><td>DH026161</td><td>Bus A</td></tr> <tr><td colspan="3"> </td></tr> <tr><td>F9</td><td>DH027161</td><td>Healthy</td></tr> <tr><td>F10</td><td>DH028161</td><td>Healthy</td></tr> <tr><td>F11</td><td>DH029161</td><td>DISABLED</td></tr> </table> Subsch. ID : 10 Det. descr. : Configure SDB FDIR	RTA	DH011161	SPIRE B	M0	DH030161	Update status	M1	DH031161	Ignore Flag	M2	DH032161	Ignore Flag	M3	DH033161	Ignore Flag	M4	DH034161	Update status	M5	DH035161	Ignore Flag	M6	DH036161	Update status	M7	DH037161	Ignore Flag	F0	DH018161	ON	F1	DH019161	Alive				F2	DH020161	Well TC	F3	DH021161	Well TM	F4	DH022161	Valid	F5	DH023161	Non-vital	F6	DH024161	REDUNDANT	F7	DH025161	ON	M12	DH051161	Ignore Flag	M_C	DH043161	Ignore CNT	M8	DH038161	Ignore Flag	M9	DH039161	Ignore Flag	M10	DH040161	Ignore Flag	M11	DH041161	Update status	F12	DH050161	ENABLED	CNT	DH042161	LoopCnt1	F8	DH026161	Bus A				F9	DH027161	Healthy	F10	DH028161	Healthy	F11	DH029161	DISABLED	DC005161	
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		Wait up to 1 minute for the generation of the D_H_Hk_P64 packet from the CDMU (APID = 18)																																																																																															
		Verify: 1553 bus FDIR status SDB_FDIR DEFJ4160	= DISABLED	AND=ZAZ96999																																																																																													
		Verify Telemetry SPIRE_NomRed DED53161	= REDUNDANT	AND=ZAZ96999																																																																																													
		Verify Telemetry SPIREB_OnOff DED21161	= ON	AND=ZAZ96999																																																																																													
		Verify Telemetry SPIREB_ValidInv DED25161	= Valid	AND=ZAZ96999																																																																																													
4.3		Power ON DPU		□																																																																																													

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	ET=+ UT=+00.00.00	Execute Telecommand SwOn_SpireHSPDU_R_L12 Subsch. ID : 10 Det. descr. : PCDU: TC(8,4,112,5) SPIRE HSDPU Red - switch LCL_12 on	DC12D170	
		Verify: DPU LCL status SpirHsdR_L12_1S WM82C565	= ON	AND=ZAZ96999
		Verify: DPU LCL current SpirHsdR_L12_I WM808565	= 0.54 A	AND=ZAZ96999
4.4		Re-enable SDB FDIR		□
	ET=+ UT=+00.00.00	Execute Telecommand ConfigureSDBFDIR Command Parameter(s) : RTA DH011161 SPIRE B M0 DH030161 Ignore Flag M1 DH031161 Ignore Flag M2 DH032161 Ignore Flag M3 DH033161 Ignore Flag M4 DH034161 Ignore Flag M5 DH035161 Ignore Flag M6 DH036161 Ignore Flag M7 DH037161 Ignore Flag F0 DH018161 ON F1 DH019161 Alive F2 DH020161 Well TC F3 DH021161 Well TM F4 DH022161 Valid F5 DH023161 Non-vital F6 DH024161 REDUNDANT F7 DH025161 ON M12 DH051161 Update status M_C DH043161 Ignore CNT M8 DH038161 Ignore Flag M9 DH039161 Ignore Flag M10 DH040161 Ignore Flag M11 DH041161 Update status F12 DH050161 DISABLED CNT DH042161 LoopCnt1 F8 DH026161 Bus A F9 DH027161 Healthy F10 DH028161 Healthy F11 DH029161 ENABLED Subsch. ID : 10 Det. descr. : Configure SDB FDIR	DC005161	
		Wait up to 1 minute for the generation of the D_H_Hk_P64 packet from the CDMU (APID = 18)		
		Verify: 1553 bus FDIR status SDB_FDIR DEFJ4160	= ENABLED	AND=ZAZ96999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry OBSVER1 SM0EN500	Version	AND=ZAZ96999
		Verify Telemetry OBSVER2 SM0FN500	Sub-version	AND=ZAZ96999
		Verify Telemetry OBSVER3 SM05F500	Revision	AND=ZAZ96999
		Verify that the following parameter is incrementeng once per second TM2N SMT1N500	incrementing	AND=ZAZ96999
		Verify that the following parameter is incrementeng once per second THSK SM00T500	incrementing	AND=ZAZ96999
7		Re-enable FDIR		Next Step: END
		Execute Telecommand ConfigureSDBFDIR	DC005161	
		Command Parameter(s) :		
		RTA DH011161 SPIRE B		
		M0 DH030161 Ignore Flag		
		M1 DH031161 Ignore Flag		
		M2 DH032161 Ignore Flag		
		M3 DH033161 Ignore Flag		
		M4 DH034161 Ignore Flag		
		M5 DH035161 Ignore Flag		
		M6 DH036161 Ignore Flag		
		M7 DH037161 Ignore Flag		
		F0 DH018161 ON		
		F1 DH019161 Alive		
		F2 DH020161 Well TC		
		F3 DH021161 Well TM		
		F4 DH022161 Valid		
		F5 DH023161 Non-vital		
		F6 DH024161 REDUNDANT		
		F7 DH025161 ON		
		M12 DH051161 Update status		
		M_C DH043161 Ignore CNT		
		M8 DH038161 Ignore Flag		
		M9 DH039161 Ignore Flag		
		M10 DH040161 Ignore Flag		
		M11 DH041161 Ignore Flag		
		F12 DH050161 ENABLED		
		CNT DH042161 LoopCnt1		
		F8 DH026161 Bus A		
		F9 DH027161 Healthy		
		F10 DH028161 Healthy		
		F11 DH029161 ENABLED		
		TC Control Flags :		
		GBM IL DSE		
		--Y -- --		
		Subsch. ID : 10		
		Det. descr. : Configure SDB FDIR		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		End of Procedure		