Update SPIRE DPU PRAM ground image from memory dump
File: H_FCP_OBS_5143.xls
Author: lstefanov-hp

Procedure Summary

Objectives

This Herschel OBSM nominal procedure is used to perform a SPIRE
DPU PRAM ground image update from memory dump of one or several
SPIRE DPU PRAM memory areas. The memory dump is commanded using
TC(6,5) and the memory locations content is received on ground in
TM(6,6) packets.

The procedure assumes that the command stack has already been
generated using the OBSM system and is ready for loading on the
Manual Stack. The command stack generation activity is not
covered by this procedure.

Summary of Constraints

CDMU in Operational Mode
- SPIRE DPU is ON
- SPIRE ASW running

Memory areas are dumped through TC(6,5); this TC will be delayed
when there is an ongoing:
- TC(6,2) Load Memory Using Absolute Addresses
- TC(6,5) Dump Memory Using Absolute Addresses
- TC(6,9) Check Memory Using Absolute Addresses
- TC(8,4,1,1) Copy Memory

Spacecraft Configuration

Start of Procedure

CDMU in Operational Mode
- SPIRE DPU is ON
- SPIRE ASW running

End of Procedure

Same as start except:
-SPIRE DPU PRAM dump executed

Reference File(s)

Input Command Sequences

Output Command Sequences

OFCP5143

Referenced Displays

ANDs   GRDs   SLDs

Configuration Control Information

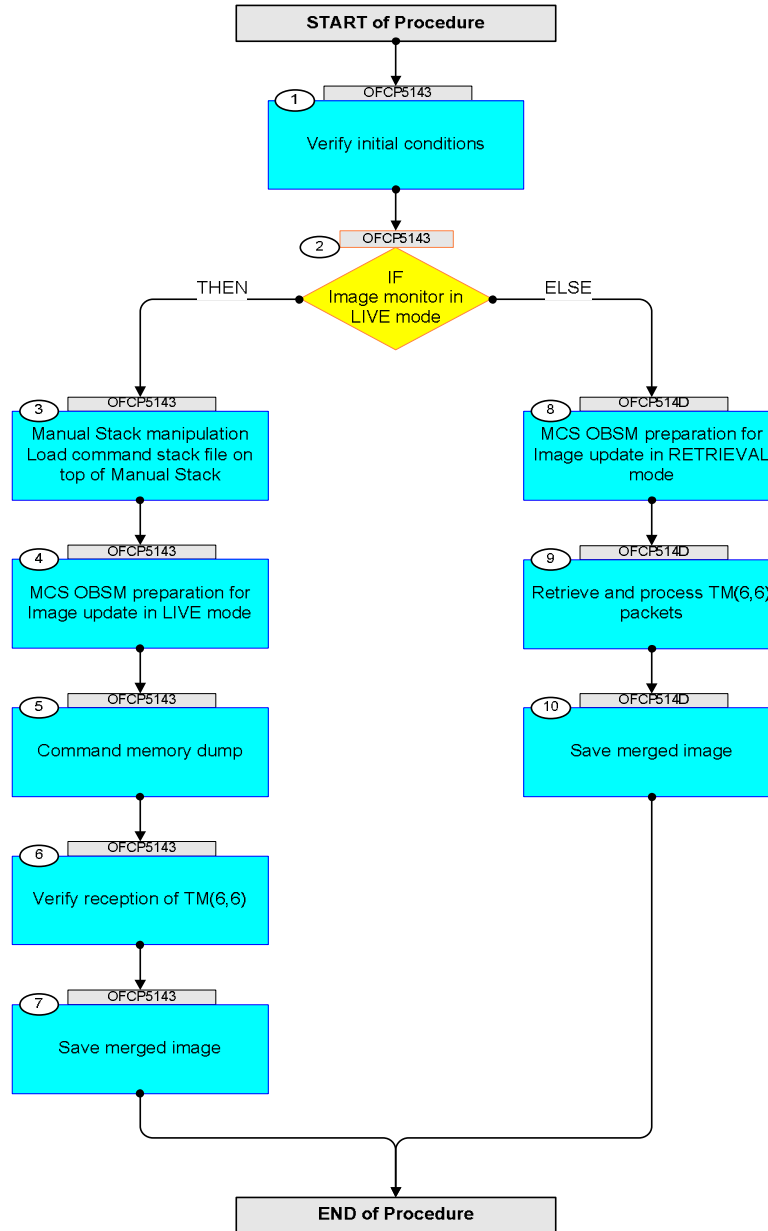| DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
13/01/09		1	Created	lstefanov-hp	
13/01/09	2	2	1. removed comment statement in step 4.2	lstefanov-hp	
13/04/09	2.3	3	1. corrected typo in steps 3.1, 3.2: 'pmcsops' replaced by 'hmcsops'	lstefanov-hp	

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Procedure Flowchart Overview

START of Procedure

1 OFCP5143
Verify initial conditions

2 OFCP5143
IF
Image monitor in
LIVE mode

THEN

ELSE

3 OFCP5143
Manual Stack manipulation
Load command stack file on
top of Manual Stack

8 OFCP514D
MCS OBSM preparation for
Image update in RETRIEVAL
mode

4 OFCP5143
MCS OBSM preparation for
Image update in LIVE mode

9 OFCP514D
Retrieve and process TM(6,6)
packets

5 OFCP5143
Command memory dump

10 OFCP514D
Save merged image

6 OFCP5143
Verify reception of TM(6,6)

7 OFCP5143
Save merged image

END of Procedure

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Beginning of Procedure			
	OFCP5143	*TC Seq. Name :* OFCP5143 (SPIRE DPU PRAM dmp) SPIRE DPU PRAM Gnd image update in Live mode *TimeTag Type: B* *Sub Schedule ID:*			
1		Verify initial conditions		Next Step: 2	
		Check: - SPIRE DPU ON - SPIRE ASW running			
		Instrument SOE to confirm SPIRE instrument mode			
2		IF Image monitor in LIVE mode type: [If]		Next Step: THEN 3 ELSE 8	
3		Manual Stack manipulation Load command stack file on top of Manual Stack		Next Step: 4	
		NOTE: The current procedure assumes that the memory dump in Live mode is performed using commands with immediate execution.			
		Select the File -> **LoadStack** option from the main menu of the Manual Stack window			
3.1		IF SPIRE Prime			
		Select file **SPDPRMPG_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/hmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/SPDPRMPG as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYYY = Image ID(X) and Version(Y) - depend on image used for stack generation YYYY_DDD hhmmss - depend on stack generation time machine - depends on the name of the machine used for stack generation			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		File name **examples**			
		- No model associated to the memory image:			
		SPDPRMPG_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043			
		- CT SPDPRMPG1, ID 0003, Version 001 associated to the memory image:			
		SPDPRMPG_DI_0002001_C_SPDPRMPG1_0003001_2007_337T093320.sun043			
3.2		ELSE SPIRE Redundant			
		Select file			
		SPDPRMPR_DI_XXXXYYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine			
		from directory			
		/home/hmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/SPDPRMPR			
		as indicated by the OBSM engineer			
		IMPORTANT:			
		XXXXYYYY = Image ID(X) and Version(Y) - depend on image used for stack generation			
		YYYY_DDD hhmmss - depend on stack generation time			
		machine - depends on the name of the machine used for stack generation			
		File name **examples**			
		- No model associated to the memory image:			
		SPDPRMPR_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043			
		- CT SPDPRMPR1, ID 0003, Version 001 associated to the memory image:			
		SPDPRMPR_DI_0002001_C_SPDPRMPR1_0003001_2007_337T093320.sun043			
3.3		Check command stack loaded			
		Note: for the whole **SPIRE DPU RAM Prog**: **MemID** = **00** hex **Start Address** = **00.0000** hex **End Address** = **07.FFFF** hex **Length** = **800000** hex			
		Check that loaded stack contains one or several TCs **XC007998**			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Display the Manual Stack in 'Full mode' and check that the **Memory ID** parameter in the XC007998 command(s) is set to **00 hex**: **Memory ID = 00 hex** **Note**: The Memory ID of the target memory device is stored in the MSB of the 16-bit long Mem ID TC parameter. The LSB of the same parameter carries the most significant 8 bits of the Start Address.			

		Execute Telecommand
		                     SPIRE Memory Dump
		
		Command Parameter(s) :
		           Memory ID XH011998
		       Start Address XH012998
		            Length XH013998
		
		TC Control Flags :
		                     GBM IL DSE
		                     --Y -- ---
		
		Subsch. ID : 370
		Det. descr. : Dump SPIRE Memory Using Absolute Addresses
		This Telecommand will not be included in the export
			XC007998
			
			00xx **<hex>**
			<hex> (Def)
			<hex> (Def)
				TC	

4		MCS OBSM preparation for Image update in LIVE mode		Next Step: 5	
		Note: It is assumed that the OBSM application is already running and the OBSM Desktop is displayed on the MCS client. Starting the OBSM application is not covered by the current procedure.			
4.1		Select 'Image UPDATE' from the menu			
		Select the **Image** menu of the *OBSM Desktop*. From the Image menu, select **Update**. The 'Image Catalog' window opens.			
4.2		Select image to be updated			
4.2.1		IF SPIRE Prime			
		Select the image to be updated for the memory device **SPDPRMPG.** The 'Image UPDATE' window opens.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
4.2.2		ELSE SPIRE Redundant			
		Select the image to be updated for the memory device **SPDPRMPR.** The 'Image UPDATE' window opens.			
4.3		Start dump TM processing			
		In **LIVE** mode, processing of incoming real-time telemetry starts automatically after the image selection.			
5		Command memory dump		Next Step: 6	
		Uplink the **XC007998** memory dump command(s) with **ARM-GO**			
		For each command, one or more TM(6,6) packets must be received on ground.			
6		Verify reception of TM(6,6)		Next Step: 7	
		Note: One or more TM(6,6) packets will be received for each memory dump command uplinked.			
6.1		IF SPIRE Prime			
		Verify Packet Reception Memory_Dump_Absolute_Addresses Packet Mnemonic : SMEMDUMP0500 APID : 1280 Type : 6 Subtype : 6 PI1 : PI2 :			
6.2		ELSE SPIRE Redundant			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Verify Packet Reception R_Memory_Dump_Absolute_Addresses Packet Mnemonic : SMEMDUMP0500 APID : 1281 Type : 6 Subtype : 6 PI1 : PI2 :			
6.3		Check OBSM dump packet processing			
		Check that the OBSM is processing the incoming memory dump packets.			
7		Save merged image		Next Step: END	
		Save merged image with **new ID**.			
		End of Sequence			
OFCP514D		*TC Seq. Name :* OFCP514D (SPIRE DPU PRAM dmp D) SPIRE DPU PRAM Gnd image update in Retrieval mode *TimeTag Type:* *Sub Schedule ID:*			
8		MCS OBSM preparation for Image update in RETRIEVAL mode		Next Step: 9	
		Note: It is assumed that the OBSM application is already running and the OBSM Desktop is displayed on the MCS client. Starting the OBSM application is not covered by the current procedure.			
8.1		Select 'Image UPDATE' from the menu			
		Select the **Image** menu of the *OBSM Desktop*. From the Image menu, select **Update**. The 'Image Catalog' window opens.			
8.2		Select image to be updated			
8.2.1		IF SPIRE Prime			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Select the image to be updated for the memory device **SPDPRMPG**. The 'Image UPDATE' window opens.			
8.2.2		ELSE SPIRE Redundant			
		Select the image to be updated for the memory device **SPDPRMPR.** The 'Image UPDATE' window opens.			
8.3		Start dump TM packets processing			
		Set **retrieval start** and **stop time** and start retrieval of TM packets using the **PLAY buttons**.			
9		Retrieve and process TM(6,6) packets		Next Step: 10	
		Use the **STEP** button to retrieve and process the TM(6,6) packets, packet by packet and starting from the time shown in the packet time field.			
		OR			
		Use the **PLAY** button to retrieve and process the TM(6,6) packets in automated mode. Pressing the PLAY button, the display will start to retrieve and process packets, starting from the time shown in the packet time field. This processing will stop automatically when a packet is received which creation time is greater than the one contained in the end time field.			
10		Save merged image		Next Step: END	
		Save merged image with **new ID**.			
		End of Sequence			
		End of Procedure			