

Update HIFI DPU EEPROM ground image from memory dump  
 File: H\_FCP\_OBS\_3141.xls  
 Author: lstefanov-hp



## Procedure Summary

### Objectives

This Herschel OBSM nominal procedure is used to perform a HIFI DPU EEPROM ground image update from memory dump of one or several HIFI DPU EEPROM 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  
 - HIFI in Intermediate mode (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  
 - HIFI in Intermediate mode (ASW running)

#### End of Procedure

Same as start except:  
 - HIFI DPU EEPROM dump executed

### Reference File(s)

#### Input Command Sequences

#### Output Command Sequences

OFCP3141

### Referenced Displays

ANDs      GRDs      SLDs

### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
27/08/08		1	Created	lstefanov-hp	
04/09/08	2	2	1. steps 4.2.1, 4.2.2, 8.2.1 and 8.2.2 changed: "monitored" replaced by "updated" in comment statement	lstefanov-hp	

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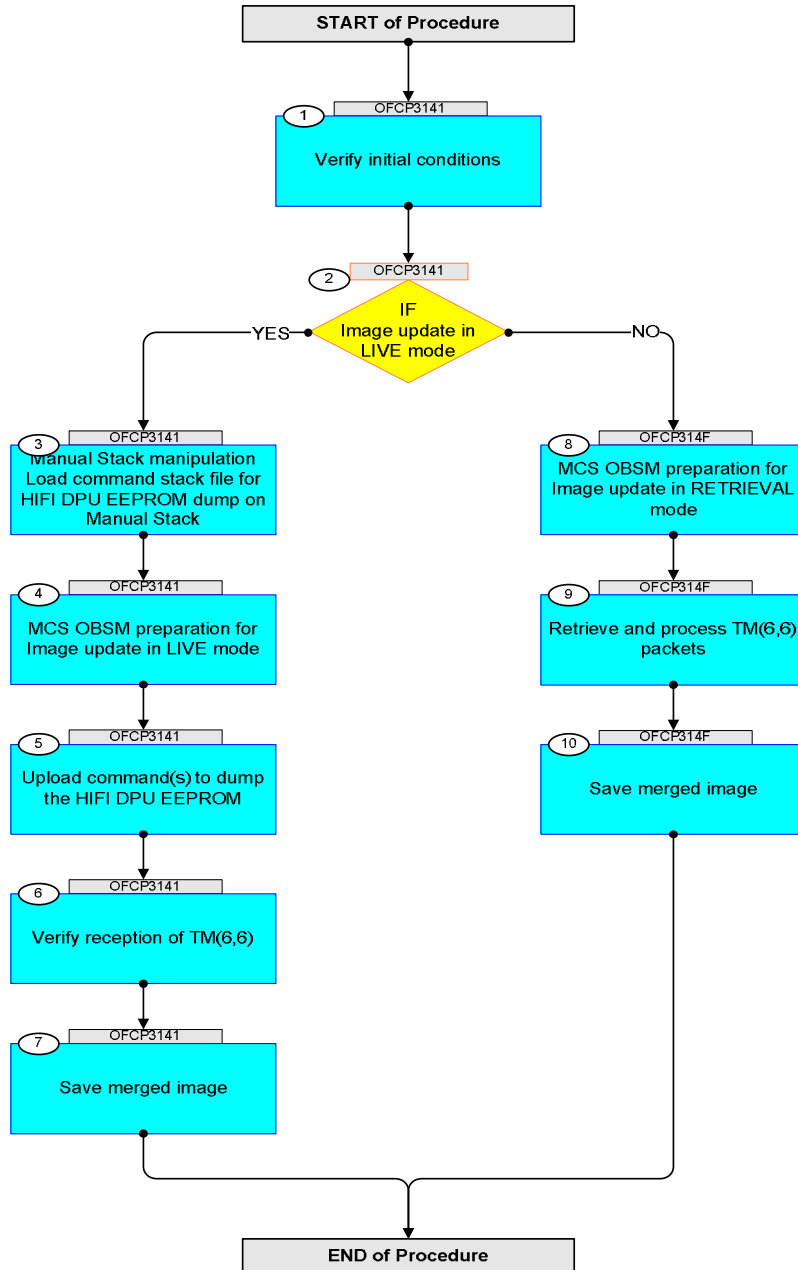


13/04/09	2.3	3	1. corrected typo in steps 3.1, 3.2: 'pmcsops' replaced by 'hmcrops' 2. step 3.3 updated: added comment to indicate the size of the whole memory area	lstefanov-hp	
16/06/09	2.5	4	1. step 3.3 updated: added comments indicating start and end address for OBS image dump from Partition1 and Partition2	lstefanov-hp	

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## Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
<b>Beginning of Procedure</b>					
OFCP3141		TC Seq. Name : OFCP3141 ( ) HIFI DPU EEPROM image update in Live mode  TimeTag Type: B Sub Schedule ID:  <input type="checkbox"/>			
1		Verify initial conditions		Next Step: 2	
		Check HIFI instrument in <b>Intermediate mode</b> (ASW running)			
		Instrument SOE to confirm HIFI instrument mode			
2		IF Image update in LIVE mode  type: [If]		Next Step: YES 3 NO 8	
3		Manual Stack manipulation Load command stack file for HIFI DPU EEPROM dump on Manual Stack		Next Step: 4	
		<b>NOTE:</b> The current procedure assumes that the memory dump in Live mode is performed using commands with immediate execution.			
		Select the File -> <b>LoadStack</b> option from the main menu of the Manual Stack window			
3.1		IF HIFI Nominal			
		Select file  <b>HIDPEEPG_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine</b>  from directory  <a href="#">/home/hmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HIDPEEPG</a>  as indicated by the OBSM engineer			
		<b>IMPORTANT:</b>  <b>XXXXYYY</b> = Image ID(X) and Version(Y) - depend on image used for stack generation  <b>YYYY_DDD hhmmss</b> - depend on stack generation time  <b>machine</b> - 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 <b>examples</b>  - No model associated to the memory image:  HIDPEEPG_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043  - CT HIDPEEPG1, ID 0003, Version 001 associated to the memory image:  HIDPEEPG_DI_0002001_C_HIDPEEPG1_0003001_2007_337T093320.sun043			
3.2		ELSE HIFI Redundant			
		Select file  <b>HIDPEEPR_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine</b>  from directory  <a href="#">/home/hmcsofs/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HIDPEEPR</a>  as indicated by the OBSM engineer			
		IMPORTANT:  <b>XXXXYYY</b> = Image ID(X) and Version(Y) - depend on image used for stack generation  <b>YYYY_DDD hhmmss</b> - depend on stack generation time  <b>machine</b> - depends on the name of the machine used for stack generation			
		File name <b>examples</b>  - No model associated to the memory image:  HIDPEEPR_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043  - CT HIDPEEPR1, ID 0003, Version 001 associated to the memory image:  HIDPEEPR_DI_0002001_C_HIDPEEPR1_0003001_2007_337T093320.sun043			
3.3		Check memory dump command stack loaded			
		Check that loaded stack contains one or several TCs <b>XC005998</b>			
		<b>Note:</b> for the whole HIFI DPU EEPROM dump:  <b>MemID</b> = 03 hex <b>Start Address</b> = 00.0000 hex <b>End Address</b> = 03.FFFF hex  <b>Length</b> = 40000 hex			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment													
		<p><b>Note:</b> for the HIFI OBS v.6.2.1 image dump from <b>Partition 1</b>:</p> <p><b>MemID</b> = 03 hex  <b>Start Address</b> = 00.0000 hex  <b>End Address</b> = 01.852B hex</p> <p><b>Length</b> = 1852C hex</p>																
		<p><b>Note:</b> for the HIFI OBS v.6.2.1 image dump from <b>Partition 2</b>:</p> <p><b>MemID</b> = 03 hex  <b>Start Address</b> = 02.0000 hex  <b>End Address</b> = 03.852B hex</p> <p><b>Length</b> = 1852C hex</p>																
		<p>Display the Manual Stack in 'Full mode' and check that the <b>Memory ID</b> parameter in the XC005998 command(s) is set to <b>03 hex</b>:</p> <p><b>Memory ID = 03 hex</b></p> <p><b>Note:</b> 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.</p>																
		<p>Execute Telecommand</p> <p style="text-align: center;"><b>HIFI Memory Dump</b></p> <p style="text-align: center;"><b>XC005998</b></p> <p>Command Parameter(s) :</p> <table style="margin-left: 40px;"> <tr> <td><b>Memory ID</b></td> <td>XH008998</td> <td>03xx &lt;hex&gt;</td> </tr> <tr> <td><b>Start Address</b></td> <td>XH009998</td> <td>&lt;hex&gt; (Def)</td> </tr> <tr> <td><b>Length</b></td> <td>XH010998</td> <td>&lt;hex&gt; (Def)</td> </tr> </table> <p>TC Control Flags :</p> <table style="margin-left: 40px;"> <tr> <td><b>GBM IL DSE</b></td> <td></td> </tr> <tr> <td>--Y -- ---</td> <td></td> </tr> </table> <p>Subsch. ID : 70  Det. descr. : Dump HIFI Memory Using Absolute Addresses  This Telecommand will not be included in the export</p>	<b>Memory ID</b>	XH008998	03xx <hex>	<b>Start Address</b>	XH009998	<hex> (Def)	<b>Length</b>	XH010998	<hex> (Def)	<b>GBM IL DSE</b>		--Y -- ---			TC	
<b>Memory ID</b>	XH008998	03xx <hex>																
<b>Start Address</b>	XH009998	<hex> (Def)																
<b>Length</b>	XH010998	<hex> (Def)																
<b>GBM IL DSE</b>																		
--Y -- ---																		
4		MCS OBSM preparation for Image update in LIVE mode		Next Step: 5														
		<p><b>Note:</b> 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.</p>																
4.1		Select 'Image UPDATE' from the menu																
		<p>Select the <b>Image</b> menu of the <b>OBSM Desktop</b>.</p> <p>From the Image menu, select <b>Update</b>.</p> <p>The 'Image Catalog' window opens.</p>																

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
4.2		Select image to be updated			
4.2.1		IF HIFI Nominal			
		Select the image to be updated for the memory device <b>HIDPEEPG.</b>  The 'Image UPDATE' window opens.			
4.2.2		ELSE HIFI Redundant			
		Select the image to be updated for the memory device <b>HIDPEEPG.</b>  The 'Image UPDATE' window opens.			
4.3		Start dump TM processing			
		In <b>LIVE</b> mode, processing of incoming real-time telemetry starts automatically after the image selection.			
5		Upload command(s) to dump the HIFI DPU EEPROM		Next Step: 6	
		<b>Uplink</b> the <b>XC005998</b> memory dump command(s) with <b>ARM-GO</b>			
		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	
		<b>Note:</b> One or more TM(6,6) packets will be received for each memory dump command uplinked.			
6.1		IF HIFI Prime			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Verify Packet Reception  HIFI_memory_dump Packet Mnemonic : H_mem_dump APID : 1024 Type : 6 Subtype : 6 PI1 : PI2 :			
6.2		ELSE HIFI Redundant			
		Verify Packet Reception  HIFI_R_memory_dump Packet Mnemonic : H_mem_dump APID : 1025 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 <b>new ID</b> .			
End of Sequence					
<b>OFCP314F</b> TC Seq. Name : OFCP314F ( ) HIFI DPU EEPROM image update in Retrieval mode  TimeTag Type: Sub Schedule ID:  <input type="checkbox"/>					
8		MCS OBSM preparation for Image update in RETRIEVAL mode		Next Step: 9	
		<b>Note:</b> 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			



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Select the <b>Image</b> menu of the <i>OBSM Desktop</i> .  From the Image menu, select <b>Update</b> .  The 'Image Catalog' window opens.			
8.2		Select image to be updated			
8.2.1		IF HIFI Nominal			
		Select the image to be updated for the memory device <b>HIDPEEPG</b> .  The 'Image UPDATE' window opens.			
8.2.2		ELSE HIFI Redundant			
		Select the image to be updated for the memory device <b>HIDPEEPR</b> .  The 'Image UPDATE' window opens.			
8.3		Start dump TM packets processing			
		Set <b>retrieval start</b> and <b>stop time</b> and start retrieval of TM packets using the <b>PLAY</b> buttons.			
9		Retrieve and process TM(6,6) packets		Next Step: 10	
		Use the <b>STEP</b> 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 <b>PLAY</b> 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	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Save merged image with new ID.			
End of Sequence					
<b>End of Procedure</b>					