

Patch and dump HIFI LCU memory
File: H_FCP_OBS_3220.xls
Author: lstefanov-hp



Procedure Summary

Objectives

This Herschel OBSM nominal procedure is used to patch HIFI LCU memory areas. It can be used to patch the LCU memory, as an alternative to the HIFI FOP procedures that use HPSDB commands with patch data hardcoded in TC parameters.

The patches are loaded using TC(6,2) and the verification of the patched areas is done by memory dump. The memory dump is commanded using TC(6,5) and the memory locations content is received on ground in TM(6,6) packets.

This procedure assumes that the memory load and memory dump command stacks have already been generated using the OBSM system and are 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 Stand-by I mode
- HIFI LCU in Stand-by (waiting for Nominal Mode) or Nominal Mode

Memory areas are patched via TC(6,2) and dumped through TC(6,5); this TCs 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 Stand-by I mode
- HIFI LCU in Stand-by (waiting for Nominal Mode) or Nominal Mode

End of Procedure

Same as start except:
-HIFI LCU memory patch and dump executed

Reference File(s)

Input Command Sequences

Output Command Sequences

OFCP3220

Referenced Displays

ANDs GRDs SLDs

Patch and dump HIFI LCU memory
File: H_FCP_OBS_3220.xls
Author: lstefanov-hp



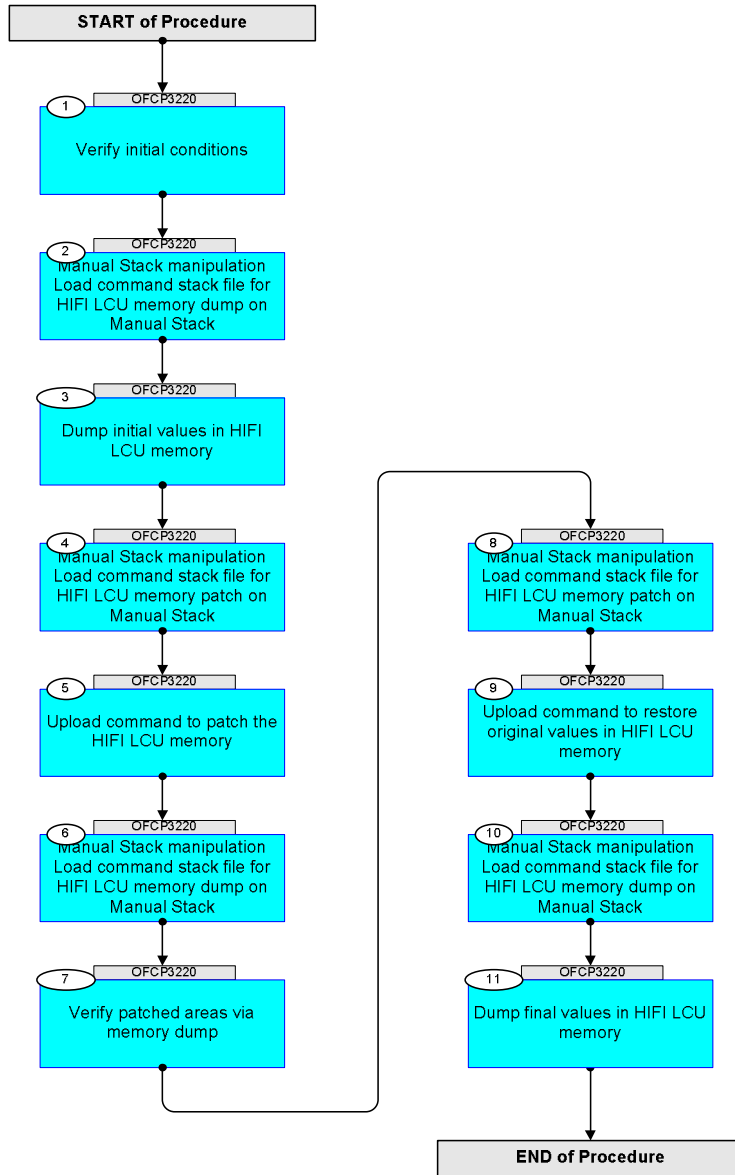
Configuration Control Information


DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
14/03/2011	3.1	1	Created	lstefanov-hp	

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp



Procedure Flowchart Overview



Patch and dump HIFI LCU memory File: H_FCP_OBS_3220.xls Author: lstefanov-hp	
--	--

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
Beginning of Procedure					
OFCP3220		TC Seq. Name :OFCP3220 (HIFI LCU Patch&Dmp) Patch and dump HIFI LCU memory TimeTag Type: B Sub Schedule ID: <input type="checkbox"/>			
1		Verify initial conditions		Next Step: 2	
		Check: - HIFI in Stand-by I mode - HIFI LCU in Stand-by (waiting for Nominal Mode) or Nominal Mode			
		Instrument SOE to confirm HIFI instrument mode			
2		Manual Stack manipulation Load command stack file for HIFI LCU memory dump on Manual Stack		Next Step: 3	
		NOTE: The current procedure assumes that the memory load is performed using commands with immediate execution.			
		Select the File -> LoadStack option from the main menu of the Manual Stack window			
2.1		IF HIFI Prime			
		Select file HILCUMEM_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcsofs/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMEM as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = 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			

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp




Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		File name examples - No model associated to the memory image: HILCUMEM_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMEM1, ID 0003, Version 001 associated to the memory image: HILCUMEM_DI_0002001_C_HILCUMEM1_0003001_2007_337T093320.sun043			
2.2		ELSE HIFI Redundant			
		Select file HILCUMER_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmss.machine from directory /home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMER as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = Image ID(X) and Version(Y) - depend on image used for stack generation YYYY_DDD hhmss - 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: HILCUMER_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMER1, ID 0003, Version 001 associated to the memory image: HILCUMER_DI_0002001_C_HILCUMER1_0003001_2007_337T093320.sun043			
2.3		Check command stack loaded			
		Note: The current procedure assumes that 10 words are patched and dumped in the HIFI LCU patch area memory buffer: MemID = 04 hex Start Address = 00.6C20 hex End Address = 00.6C2A hex Length = 0A hex			
		Check that loaded stack contains one TC XC005998			

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Display the Manual Stack in 'Full mode' and check the XC005998 command loaded: 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 <p style="text-align: center;">HIFI Memory Dump</p> Command Parameter(s) : Memory ID XH008998 0400 <dec> Start Address XH009998 6C20 <hex> Length XH010998 000A <hex> TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 70 Det. descr. : Dump HIFI Memory Using Absolute Addresses This Telecommand will not be included in the export	XC005998	TC	
3		Dump initial values in HIFI LCU memory		Next Step: 4	
3.1		MCS OBSM preparation for Image update in LIVE mode			
		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.			
3.1.1		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.			
3.1.2		Select image to be updated			
3.1.2.1		IF HIFI Prime			
		Select the image to be updated for the memory device HILCUMEM . The 'Image UPDATE' window opens.			

Patch and dump HIFI LCU memory File: H_FCP_OBS_3220.xls Author: lstefanov-hp	 
--	--

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
3.1.2.2		ELSE HIFI Redundant			
		Select the image to be updated for the memory device HILCUMER. The 'Image UPDATE' window opens.			
3.1.3		Start dump TM processing			
		In LIVE mode, processing of incoming real-time telemetry starts automatically after the image selection.			
3.2		Command memory dump			
		Uplink the XC005998 memory dump command with ARM-GO			
		For the uplinked command, a TM(6,6) packet shall be received on ground.			
3.3		Verify reception of TM(6,6)			
		Note: A TM(6,6) packet will be received for the memory dump command uplinked.			
3.3.1		IF HIFI Prime			
		Verify Packet Reception HIFI_memory_dump Packet Mnemonic : H_mem_dump APID : 1024 Type : 6 Subtype : 6 PI1 : PI2 :			
3.3.2		ELSE HIFI Redundant			
		Verify Packet Reception HIFI_R_memory_dump Packet Mnemonic : H_mem_dump APID : 1025 Type : 6 Subtype : 6 PI1 : PI2 :			

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp




Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
3.3.3		Check OBSM dump packet processing			
		Check that the OBSM is processing the incoming memory dump packets.			
3.4		Save merged image			
		Save merged image with new ID .			
4		Manual Stack manipulation Load command stack file for HIFI LCU memory patch on Manual Stack		Next Step: 5	
		NOTE: The current procedure assumes that the memory load is performed using commands with immediate execution.			
		Select the File -> LoadStack option from the main menu of the Manual Stack window			
4.1		IF HIFI Prime			
		Select file HILCUMEM_PI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmss.machine from directory /home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMEM as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = Image ID(X) and Version(Y) - depend on image used for stack generation YYYY_DDD hhmss - 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: HILCUMEM_PI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMEM1, ID 0003, Version 001 associated to the memory image: HILCUMEM_PI_0002001_C_HILCUMEM1_0003001_2007_337T093320.sun043			

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp




Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
4.1.1		ELSE HIFI Redundant			
		Select file HILCUMER_PI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcsofs/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMER as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = 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: HILCUMER_PI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMER1, ID 0003, Version 001 associated to the memory image: HILCUMER_PI_0002001_C_HILCUMER1_0003001_2007_337T093320.sun043			
4.2		Check memory load command stack loaded			
		Note: The current procedure assumes that 10 words are patched and dumped in the HIFI LCU patch area memory buffer : MemID = 04 hex Start Address = 00.6C20 hex End Address = 00.6C2A hex Length = 0A hex			
		Memory Patch details: Memory ID: 04 hex Start address: 00.6C20 hex Length: 0A hex Patch data: AABB AABB AABB AABB AABB [hex] AABB AABB AABB AABB AABB			
		Check that loaded stack contains one TC XC000998 .			

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp



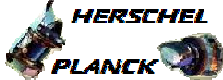
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment																												
		Display the Manual Stack in 'Full mode' and check the XC000998 command loaded: Note: The Memory ID of the target memory device is stored in the MSB of the 16-bit long Mem ID TC parameter. The LSB of the same parameter carries the most significant 8 bits of the Start Address.																															
		Execute Telecommand <p style="text-align: center;">HIFI Memory Load</p> Command Parameter(s) : <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 20%;">XH000998</td> <td style="width: 20%;">0400 <hex></td> <td style="width: 30%;"></td> </tr> <tr> <td>Start Address</td> <td>XH001998</td> <td>6C20 <hex></td> <td></td> </tr> <tr> <td>Length of Block</td> <td>XH003998</td> <td>10 <dec></td> <td></td> </tr> <tr> <td>Var length octet string</td> <td>XH004998</td> <td>AABBAABBAABBAABBA</td> <td></td> </tr> <tr> <td>Checksum</td> <td>XH005998</td> <td>BBAABBAABBAABBA</td> <td></td> </tr> </table> TC Control Flags : <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td style="width: 20%;">GBM IL DSE</td> <td style="width: 20%;"></td> <td style="width: 30%;">calculated by OBSM</td> </tr> <tr> <td></td> <td>--Y -- ---</td> <td></td> <td></td> </tr> </table> Subsch. ID : 30 Det. descr. : Load HIFI Memory Using Absolute Addresses This Telecommand will not be included in the export	Memory ID	XH000998	0400 <hex>		Start Address	XH001998	6C20 <hex>		Length of Block	XH003998	10 <dec>		Var length octet string	XH004998	AABBAABBAABBAABBA		Checksum	XH005998	BBAABBAABBAABBA			GBM IL DSE		calculated by OBSM		--Y -- ---			XC000998	TC	
Memory ID	XH000998	0400 <hex>																															
Start Address	XH001998	6C20 <hex>																															
Length of Block	XH003998	10 <dec>																															
Var length octet string	XH004998	AABBAABBAABBAABBA																															
Checksum	XH005998	BBAABBAABBAABBA																															
	GBM IL DSE		calculated by OBSM																														
	--Y -- ---																																
5		Upload command to patch the HIFI LCU memory		Next Step: 6																													
		Uplink the XC000998 memory load command with ARM-GO																															
		For a TC XC000998 successfully executed on-board, a TM(1,1) and TM(1,7) packet shall be received on ground.																															
5.1		IF HIFI Prime																															
		Verify Packet Reception HIFI_TC_acceptance_OK Packet Mnemonic : H_Accepted APID : 1024 Type : 1 Subtype : 1 PI1 : PI2 :																															
		Verify Packet Reception HIFI_TC_execution_OK Packet Mnemonic : H_Completed APID : 1024 Type : 1 Subtype : 7 PI1 : PI2 :																															
5.2		ELSE HIFI Redundant																															

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp




Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Verify Packet Reception HIFI_R_TC_acceptance_OK Packet Mnemonic : H_Accepted APID : 1025 Type : 1 Subtype : 1 PI1 : PI2 :			
		Verify Packet Reception HIFI_R_TC_execution_OK Packet Mnemonic : H_Completed APID : 1025 Type : 1 Subtype : 7 PI1 : PI2 :			
6		Manual Stack manipulation Load command stack file for HIFI LCU memory dump on Manual Stack		Next Step: 7	
		NOTE: The current procedure assumes that the memory load is performed using commands with immediate execution.			
		Select the File -> LoadStack option from the main menu of the Manual Stack window			
6.1		IF HIFI Prime			
		Select file HILCUMEM_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcSops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMEM as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = 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: HILCUMEM_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMEM1, ID 0003, Version 001 associated to the memory image: HILCUMEM_DI_0002001_C_HILCUMEM1_0003001_2007_337T093320.sun043			

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp




Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
6.2		ELSE HIFI Redundant			
		Select file HILCUMER_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMER as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = 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: HILCUMER_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMER1, ID 0003, Version 001 associated to the memory image: HILCUMER_DI_0002001_C_HILCUMER1_0003001_2007_337T093320.sun043			
6.3		Check command stack loaded			
		Note: The current procedure assumes that 10 words are patched and dumped in the HIFI LCU patch area memory buffer : MemID = 04 hex Start Address = 00.6C20 hex End Address = 00.6C2A hex Length = 0A hex			
		Check that loaded stack contains one TC XC005998			
		Display the Manual Stack in 'Full mode' and check the XC005998 command loaded: 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.			

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <p style="text-align: center;">HIFI Memory Dump</p> <p style="text-align: center;">XC005998</p> <p>Command Parameter(s) :</p> <p style="margin-left: 40px;">Memory ID XH008998 0400 <dec> Start Address XH009998 6C20 <hex> Length XH010998 000A <hex></p> <p>TC Control Flags :</p> <p style="margin-left: 40px;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 70 Det. descr. : Dump HIFI Memory Using Absolute Addresses This Telecommand will not be included in the export</p>		TC	
7		Verify patched areas via memory dump		Next Step: 8	
7.1		MCS OBSM preparation for Image monitor in LIVE mode			
		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.			
7.1.1		Select 'Image MONITOR' from the menu			
		Select the Image menu of the <i>OBSM Desktop</i> . From the Image menu, select Monitor . The 'Image Catalog' window opens.			
7.1.2		Select image to be monitored			
7.1.2.1		IF HIFI Prime			
		Select the image to be monitored for the memory device HILCUMEM . The 'Image MONITOR' window opens.			
7.1.2.2		ELSE HIFI Redundant			

Patch and dump HIFI LCU memory File: H_FCP_OBS_3220.xls Author: lstefanov-hp	
--	--

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Select the image to be monitored for the memory device HILCUMER . The 'Image MONITOR' window opens.			
7.1.3		Start dump TM processing			
		In LIVE mode, processing of incoming real-time telemetry starts automatically after the image selection.			
7.2		Command memory dump			
		Uplink the XC005998 memory dump command with ARM-GO			
		For the uplinked command, a TM(6,6) packet shall be received on ground.			
		Expected dump values: Memory ID: 04 hex Start address: 00.6C20 hex Length: 0A hex Patch data: AABB AABB AABB AABB AABB [hex] AABB AABB AABB AABB AABB			
7.3		Verify reception of TM(6,6)			
		Note: A TM(6,6) packet will be received for the memory dump command uplinked.			
7.3.1		IF HIFI Prime			
		Verify Packet Reception HIFI_memory_dump Packet Mnemonic : H_mem_dump APID : 1024 Type : 6 Subtype : 6 PI1 : PI2 :			
7.3.2		ELSE HIFI Redundant			


Patch and dump HIFI LCU memory File: H_FCP_OBS_3220.xls Author: lstefanov-hp	 
--	--

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Verify Packet Reception HIFI_R_memory_dump Packet Mnemonic : H_mem_dump APID : 1025 Type : 6 Subtype : 6 PI1 : PI2 :			
7.3.3		Check OBSM dump packet processing			
		Check that the OBSM is processing the incoming memory dump packets.			
7.4		Check contents of memory dump packets			
		Verify that there are NO OBSM reported differences between the memory dump data and the ground image used for monitoring. Note: The ground memory image used for dump monitoring is the same image used for patch command stack generation.			
7.4.1		Save merged image			
		IF there are mismatches reported by OBSM, save merged image with new ID . Conduct off-line analysis of the reported mismatches.			
8		Manual Stack manipulation Load command stack file for HIFI LCU memory patch on Manual Stack		Next Step: 9	
		NOTE: The current procedure assumes that the memory load is performed using commands with immediate execution.			
		Select the File -> LoadStack option from the main menu of the Manual Stack window			
		Note: The memory load command stack file will be generated in real time, based on the image saved in step 3 of current procedure, after dump of the initial values.			
8.1		IF HIFI Prime			

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Select file HILCUMEM_PI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcsofs/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMEM as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = 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: HILCUMEM_PI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMEM1, ID 0003, Version 001 associated to the memory image: HILCUMEM_PI_0002001_C_HILCUMEM1_0003001_2007_337T093320.sun043			
8.1.1		ELSE HIFI Redundant			
		Select file HILCUMER_PI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/pmcsofs/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMER as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = 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: HILCUMER_PI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMER1, ID 0003, Version 001 associated to the memory image: HILCUMER_PI_0002001_C_HILCUMER1_0003001_2007_337T093320.sun043			

Patch and dump HIFI LCU memory File: H_FCP_OBS_3220.xls Author: lstefanov-hp	
--	--

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment															
8.2		Check memory load command stack loaded																		
		Note: The current procedure assumes that 10 words are patched and dumped in the HIFI LCU patch area memory buffer: MemID = 04 hex Start Address = 00.6C20 hex End Address = 00.6C2A hex Length = 0A hex																		
		Memory Patch details: Memory ID: 04 hex Start address: 00.6C20 hex Length: 0A hex Patch data: values dumped in step 3 [hex]																		
		Check that loaded stack contains a TC XC000998.																		
		Display the Manual Stack in 'Full mode' and check the XC000998 command loaded: 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 <div style="text-align: right; margin-left: 100px;">HIFI Memory Load</div> <div style="text-align: right; margin-left: 100px;">XC000998</div> Command Parameter(s) : <table style="margin-left: 40px; border: none;"> <tr> <td style="padding-right: 20px;">Memory ID</td> <td style="padding-right: 20px;">XH000998</td> <td>0400 <hex></td> </tr> <tr> <td>Start Address</td> <td>XH001998</td> <td>6C20 <hex></td> </tr> <tr> <td>Length of Block</td> <td>XH003998</td> <td>10 <dec></td> </tr> <tr> <td>Var length octet string</td> <td>XH004998</td> <td>initial values</td> </tr> <tr> <td>Checksum</td> <td>XH005998</td> <td>calculated by OBSM</td> </tr> </table> TC Control Flags : <div style="margin-left: 40px;">GBM IL DSE</div> <div style="margin-left: 40px;">--Y -- ---</div> Subsch. ID : 30 Det. descr. : Load HIFI Memory Using Absolute Addresses This Telecommand will not be included in the export	Memory ID	XH000998	0400 <hex>	Start Address	XH001998	6C20 <hex>	Length of Block	XH003998	10 <dec>	Var length octet string	XH004998	initial values	Checksum	XH005998	calculated by OBSM		TC	
Memory ID	XH000998	0400 <hex>																		
Start Address	XH001998	6C20 <hex>																		
Length of Block	XH003998	10 <dec>																		
Var length octet string	XH004998	initial values																		
Checksum	XH005998	calculated by OBSM																		
9		Upload command to restore original values in HIFI LCU memory		Next Step: 10																
		Uplink the XC000998 memory load command with ARM-GO																		
		For a TC XC000998 successfully executed on-board, a TM(1,1) and TM(1,7) packet shall be received on ground.																		
9.1		IF HIFI Prime																		

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp




Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Verify Packet Reception HIFI_TC_acceptance_OK Packet Mnemonic : H_Accepted APID : 1024 Type : 1 Subtype : 1 PI1 : PI2 :			
		Verify Packet Reception HIFI_TC_execution_OK Packet Mnemonic : H_Completed APID : 1024 Type : 1 Subtype : 7 PI1 : PI2 :			
9.2		ELSE HIFI Redundant			
		Verify Packet Reception HIFI_R_TC_acceptance_OK Packet Mnemonic : H_Accepted APID : 1025 Type : 1 Subtype : 1 PI1 : PI2 :			
		Verify Packet Reception HIFI_R_TC_execution_OK Packet Mnemonic : H_Completed APID : 1025 Type : 1 Subtype : 7 PI1 : PI2 :			
10		Manual Stack manipulation Load command stack file for HIFI LCU memory dump on Manual Stack		Next Step: 11	
		NOTE: The current procedure assumes that the memory load is performed using commands with immediate execution.			
		Select the File -> LoadStack option from the main menu of the Manual Stack window			
10.1		IF HIFI Prime			

Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp




Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Select file HILCUMEM_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThmmss.machine from directory /home/pmcsoops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMEM as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = Image ID(X) and Version(Y) - depend on image used for stack generation YYYY_DDD hhmss - 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: HILCUMEM_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMEM1, ID 0003, Version 001 associated to the memory image: HILCUMEM_DI_0002001_C_HILCUMEM1_0003001_2007_337T093320.sun043			
10.2		ELSE HIFI Redundant			
		Select file HILCUMER_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThmmss.machine from directory /home/pmcsoops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/HILCUMER as indicated by the OBSM engineer			
		IMPORTANT: XXXXYYY = Image ID(X) and Version(Y) - depend on image used for stack generation YYYY_DDD hhmss - 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: HILCUMER_DI_0002001_N_NoModel_NoModel_2007_254T123300.sun043 - CT HILCUMER1, ID 0003, Version 001 associated to the memory image: HILCUMER_DI_0002001_C_HILCUMER1_0003001_2007_337T093320.sun043			


Patch and dump HIFI LCU memory
 File: H_FCP_OBS_3220.xls
 Author: lstefanov-hp




Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment															
10.3		Check command stack loaded																		
		<p>Note: The current procedure assumes that 10 words are patched and dumped in the HIFI LCU patch area memory buffer:</p> <p>MemID = 04 hex Start Address = 00.6C20 hex End Address = 00.6C2A hex</p> <p>Length = 0A hex</p>																		
		Check that loaded stack contains one TC XC005998																		
		<p>Display the Manual Stack in 'Full mode' and check the XC005998 command loaded:</p> <p>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.</p>																		
		<p>Execute Telecommand</p> <p style="text-align: center;">HIFI Memory Dump</p> <p>Command Parameter(s) :</p> <table style="margin-left: 40px;"> <tr> <td>Memory ID</td> <td>XH008998</td> <td>0400 <dec></td> </tr> <tr> <td>Start Address</td> <td>XH009998</td> <td>6C20 <hex></td> </tr> <tr> <td>Length</td> <td>XH010998</td> <td>000A <hex></td> </tr> </table> <p>TC Control Flags :</p> <table style="margin-left: 40px;"> <tr> <td>GBM</td> <td>IL</td> <td>DSE</td> </tr> <tr> <td>--Y</td> <td>--</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>	Memory ID	XH008998	0400 <dec>	Start Address	XH009998	6C20 <hex>	Length	XH010998	000A <hex>	GBM	IL	DSE	--Y	--	---	XC005998	TC	
Memory ID	XH008998	0400 <dec>																		
Start Address	XH009998	6C20 <hex>																		
Length	XH010998	000A <hex>																		
GBM	IL	DSE																		
--Y	--	---																		
11		Dump final values in HIFI LCU memory		Next Step: END																
11.1		MCS OBSM preparation for Image monitor in LIVE mode																		
		<p>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.</p>																		
11.1.1		Select 'Image MONITOR' from the menu																		
		<p>Select the Image menu of the OBSM Desktop.</p> <p>From the Image menu, select Monitor.</p> <p>The 'Image Catalog' window opens.</p>																		

Patch and dump HIFI LCU memory File: H_FCP_OBS_3220.xls Author: lstefanov-hp	 
--	--

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
11.1.2		Select image to be monitored			
11.1.2.1		IF HIFI Prime			
		Select the image to be monitored for the memory device HILCUMEM . The 'Image MONITOR' window opens.			
11.1.2.2		ELSE HIFI Redundant			
		Select the image to be monitored for the memory device HILCUMEM . The 'Image MONITOR' window opens.			
11.1.3		Start dump TM processing			
		In LIVE mode, processing of incoming real-time telemetry starts automatically after the image selection.			
11.2		Command memory dump			
		Uplink the XC005998 memory dump command with ARM-GO			
		For the uplinked command, a TM(6,6) packet shall be received on ground.			
11.3		Verify reception of TM(6,6)			
		Note: A TM(6,6) packet will be received for the memory dump command uplinked.			
11.3.1		IF HIFI Prime			

Patch and dump HIFI LCU memory File: H_FCP_OBS_3220.xls Author: lstefanov-hp	 
--	--

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 :			
11.3.2		ELSE HIFI Redundant			
		Verify Packet Reception HIFI_R_memory_dump Packet Mnemonic : H_mem_dump APID : 1025 Type : 6 Subtype : 6 PI1 : PI2 :			
11.3.3		Check OBSM dump packet processing			
		Check that the OBSM is processing the incoming memory dump packets.			
11.4		Check contents of memory dump packets			
		Verify that there are NO OBSM reported differences between the memory dump data and the ground image used for monitoring. Note: The ground memory image used for dump monitoring is the same image used for patch command stack generation.			
11.4.1		Save merged image			
		IF there are mismatches reported by OBSM, save merged image with new ID . Conduct off-line analysis of the reported mismatches.			
End of Sequence					
End of Procedure					