Update ACC PM EEPROM ground image from memory dump
File: H_FCP_OBS_2243.xls
Author: lstefanov-hp

Procedure Summary

Objectives

This Herschel OBSM nominal procedure is used to perform an ACC PM EEPROM ground image update from memory dump. The procedure covers both ACC PM EEPROM1 and EEPROM2. 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
- ACC in Operational Mode

Execution of service 6 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
- ACC in Operational Mode

End of Procedure

Same as start except:
- ACC PM EEPROM1 and/or EEPROM2 memory dump executed

Reference File(s)

Input Command Sequences

Output Command Sequences

OFCP224G
OFCP224I

Referenced Displays

ANDs **GRDs** **SLDs**

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
30/03/09		1	Created	lstefanov-hp	
10/04/09	2.3	2	1. corrected error in TC Seq. name: OFCP124J replaced by OFCP224J	lstefanov-hp	

Status : Version 2 - Unchanged
Last Checkin: 10/04/09

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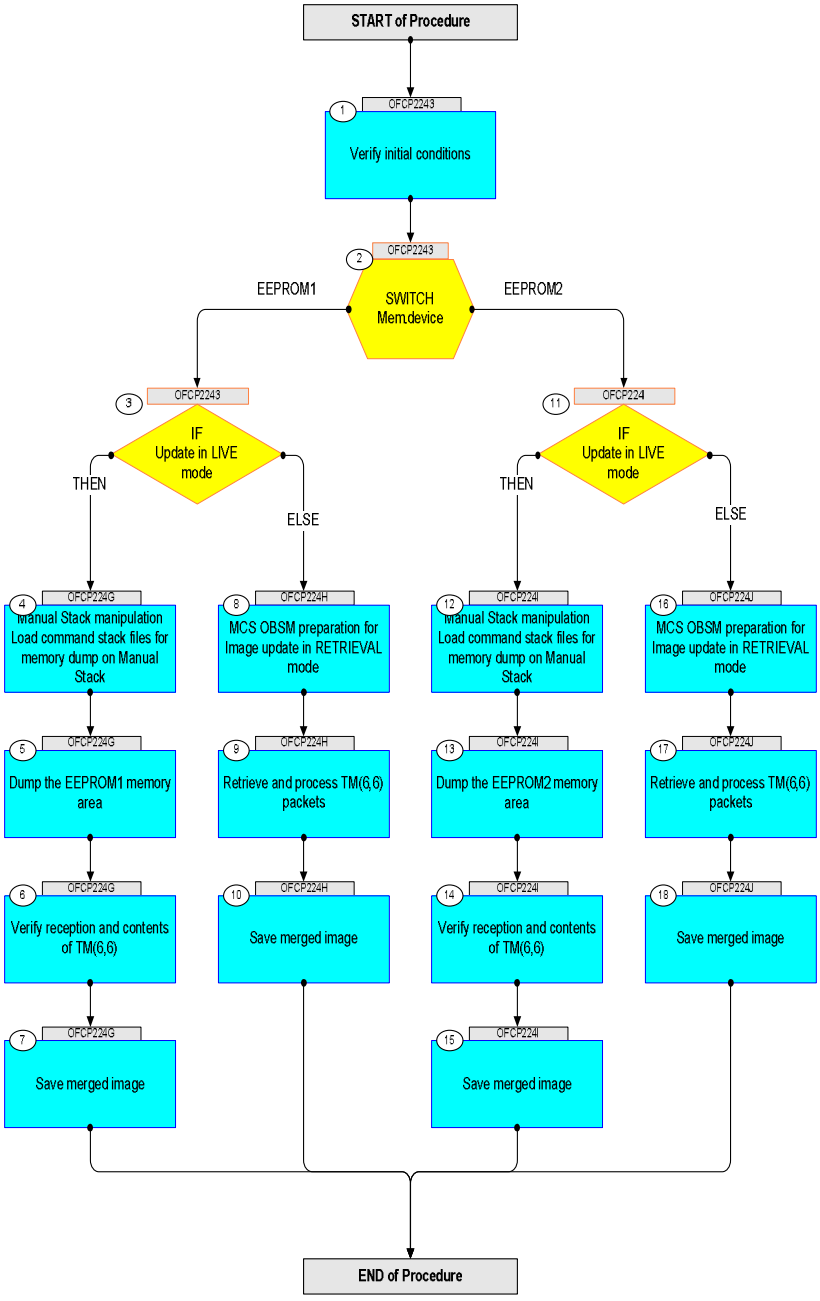
Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Beginning of Procedure			
	OFCP2243	*TC Seq. Name :* OFCP2243 (ACC EEPROM GI update) ACC PM EEPROM Gnd image update *TimeTag Type:* *Sub Schedule ID:*			
1		Verify initial conditions		Next Step: 2	
		Check: - CDMU in Operational Mode - ACC in Operational Mode			
		CDMS SOE to confirm CDMU mode			
		ACMS SOE to confirm ACC mode			
2		SWITCH Mem.device type: [Switch]		Next Step: EEPROM1 3 EEPROM2 11	
3		IF Update in LIVE mode type: [If]		Next Step: THEN 4 ELSE 8	
		End of Sequence			
	OFCP224G	*TC Seq. Name :* OFCP224G (ACC EEPROM1 GI upd L) ACC PM EEPROM1 Gnd image update in LIVE mode *TimeTag Type: B* *Sub Schedule ID:*			
4		Manual Stack manipulation Load command stack files for memory dump on Manual Stack		Next Step: 5	
4.1		Load memory dump command stack			
		Select the File -> **LoadStack** option from the main menu of the Manual Stack window			
4.1.1		IF ACC PM A			

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		Select file **ACCEE1PG_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/hmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/ACCEE1PG 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			
		Note: The file name pattern above assumes that NO model was associated with the image used for command stack generation. If the memory image used has a model associated, than the fields ***N_NoModel_NoModel*** will change to reflect the CT name, ID and Version of the used Configuration Table.			
		File name **example:** - No model associated to the memory image: ACCEE1PG_DI_0002001_N_NoModel_NoModel_2008_133T123300.sun045 - CT ACCEE1PG1, ID 0003, Version 001 associated to the memory image: ACCEE1PG_DI_0002001_C_ACCEE1PG1_0003001_2008_148T093320.sun045			
4.1.2		ELSE ACC PM B			
		Select file **ACCEE1PB_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/hmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/ACCEE1PB 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
		Note: The file name pattern above assumes that NO model was associated with the image used for command stack generation. If the memory image used has a model associated, than the fields ***N_NoModel_NoModel*** will change to reflect the CT name, ID and Version of the used Configuration Table.			
		File name **example:** - No model associated to the memory image: ACCEE1PB_DI_0002001_N_NoModel_NoModel_2008_133T123300.sun045 - CT ACCEE1PB1, ID 0003, Version 001 associated to the memory image: ACCEE1PB_DI_0002001_C_ACCEE1PB1_0003001_2008_148T093320.sun045			
4.2		Check memory dump command stack loaded			
		Check that loaded stack contains one or several TCs **AC063109**.			
		Display the Manual Stack in 'Full mode' and check that the **Memory ID** parameter in the AC063109 command(s) is set to **008 hex**: **Memory ID = 008 hex** **Note**: The Memory ID of the target memory device is stored in the most significant 12 bits of the 16-bit long Mem ID TC parameter. The least significant 4 bits of the same parameter carry the most significant 4 bits of the Start Address.			
		Execute Telecommand **Dump Memory** **AC063109** *Command Parameter(s) :* **Memory ID** **AH6M0109** **008x <hex>** **Start Address** **AH6M1109** **<hex>** (Def) **Length SAU** **AH6M3109** **<hex>** (Def) *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses This Telecommand will not be included in the export		**TC**	
		Note: For a full dump of ACC EEPROM1, the stack will contain 17 TCs AC063109, covering the address range **0080.0000 hex** to **008F.FFFF hex**			
		Note: The start and end address of the EEPROM 'Image 1' are (Memory ID included): **Start Address** = **0080.0000 hex** **End Address** = **008F.FFFF hex** **Length** = **100000 hex**			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
5		Dump the EEPROM1 memory area		Next Step: 6	
5.1		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.			
5.1.1		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.			
5.1.2		Select image to be updated			
5.1.2.1		IF ACC PM A			
		Select the image to be updated for the memory device **ACCEE1PG.** The 'Image UPDATE' window opens.			
5.1.2.2		ELSE ACC PM B			
		Select the image to be updated for the memory device **ACCEE1PB.** The 'Image UPDATE' window opens.			
5.1.3		Start dump TM processing			
		In **LIVE** mode, processing of incoming real-time telemetry starts automatically after the image selection.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
5.2		Command memory dump			
		Uplink TCs **AC063109** with **ARM-GO**			
		For each command, one or several TM(6,6) packets will be received on ground.			
6		Verify reception and contents of TM(6,6)		Next Step: 7	
		Note: One or several TM(6,6) packets will be received for each memory dump command uplinked.			
		Verify Packet Reception Memory Dump - Absolute Addresses - SAU 8 Packet Mnemonic : MemDmpAbsAdd APID : 512 Type : 6 Subtype : 6 PI1 : PI2 :			
6.1		Check OBSM dump packet processing			
		Check that the OBSM is processing the incoming memory dump packets.			
7		Save merged image		Next Step: END	
		WAIT for execution completion of the last dump command.			
		Save merged image with **new ID**.			
		End of Sequence			
	OFCP224H	*TC Seq. Name :* OFCP224H (ACC EEPROM1 GI upd R) ACC PM EEPROM1 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.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
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 ACC PM A			
		Select the image to be updated for the memory device **ACCEE1PG.** The 'Image UPDATE' window opens.			
8.2.1.1		ELSE ACC PM B			
		Select the image to be updated for the memory device **ACCEE1PB.** 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.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
9.1		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.			
		IF there are **differences** reported by OBSM between the dump data and the ground image, **the merged image shall be saved** for offline analysis.			
10		Save merged image		Next Step: END	
		WAIT for retrieval completion of the last dump packet.			
		Save merged image with **new ID**.			
		End of Sequence			
	OFCP224I	*TC Seq. Name :* OFCP224I (ACC EEPROM2 GI upd L) ACC PM EEPROM2 Gnd image update in LIVE mode *TimeTag Type: B* *Sub Schedule ID:*			
11		IF Update in LIVE mode type: [If]		Next Step: THEN 12 ELSE 16	
12		Manual Stack manipulation Load command stack files for memory dump on Manual Stack		Next Step: 13	
12.1		Load memory dump command stack			
		Select the File -> **LoadStack** option from the main menu of the Manual Stack window			
12.1.1		IF ACC PM A			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Select file **ACCEE2PG_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/hmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/ACCEE2PG 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			
		Note: The file name pattern above assumes that NO model was associated with the image used for command stack generation. If the memory image used has a model associated, than the fields ***N_NoModel_NoModel*** will change to reflect the CT name, ID and Version of the used Configuration Table.			
		File name **example:** - No model associated to the memory image: ACCEE2PG_DI_0002001_N_NoModel_NoModel_2008_133T123300.sun045 - CT ACCEE2PG1, ID 0003, Version 001 associated to the memory image: ACCEE2PG_DI_0002001_C_ACCEE2PG1_0003001_2008_148T093320.sun045			
12.1.2		ELSE ACC PM B			
		Select file **ACCEE2PB_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine** from directory /home/hmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/ACCEE2PB 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
		Note: The file name pattern above assumes that NO model was associated with the image used for command stack generation. If the memory image used has a model associated, than the fields ***N_NoModel_NoModel*** will change to reflect the CT name, ID and Version of the used Configuration Table.			
		File name **example:** - No model associated to the memory image: ACCEE2PB_DI_0002001_N_NoModel_NoModel_2008_133T123300.sun045 - CT ACCEE2PB1, ID 0003, Version 001 associated to the memory image: ACCEE2PB_DI_0002001_C_ACCEE2PB1_0003001_2008_148T093320.sun045			
12.2		Check memory dump command stack loaded			
		Check that loaded stack contains one or several TCs **AC063109**.			
		Display the Manual Stack in 'Full mode' and check that the **Memory ID** parameter in the AC063109 command(s) is set to **009 hex**: **Memory ID = 009 hex** **Note**: The Memory ID of the target memory device is stored in the most significant 12 bits of the 16-bit long Mem ID TM parameter. The least significant 4 bits of the same parameter carry the most significant 4 bits of the Start Address.			
		Execute Telecommand **Dump Memory** **AC063109** *Command Parameter(s) :* **Memory ID** **AH6M0109** **009x <hex>** **Start Address** **AH6M1109** **<hex>** (Def) **Length SAU** **AH6M3109** **<hex>** (Def) *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses This Telecommand will not be included in the export		**TC**	
		Note: For a full dump of ACC EEPROM2, the stack will contain 17 TCs AC063109, covering the address range **0090.0000 hex** to **009F.FFFF hex**			
		Note: The start and end address of the EEPROM 'Image 2' are (Memory ID included): **Start Address** = **0090.0000 hex** **End Address** = **009F.FFFF hex** **Length** = **100000 hex**			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
13		Dump the EEPROM2 memory area		Next Step: 14	
13.1		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.			
13.1.1		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.			
13.1.2		Select image to be updated			
13.1.2.1		IF ACC PM A			
		Select the image to be updated for the memory device **ACCEE2PG.** The 'Image UPDATE' window opens.			
13.1.2.2		ELSE ACC PM B			
		Select the image to be updated for the memory device **ACCEE2PB.** The 'Image UPDATE' window opens.			
13.1.3		Start dump TM processing			
		In **LIVE** mode, processing of incoming real-time telemetry starts automatically after the image selection.			

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13.2		Command memory dump			
		Uplink TCs **AC063109** with **ARM-GO**			
		For each command, one or several TM(6,6) packets will be received on ground.			
14		Verify reception and contents of TM(6,6)		Next Step: 15	
		Note: One or several TM(6,6) packets will be received for each memory dump command uplinked.			
		Verify Packet Reception Memory Dump - Absolute Addresses - SAU 8 Packet Mnemonic : MemDmpAbsAdd APID : 512 Type : 6 Subtype : 6 PI1 : PI2 :			
14.1		Check OBSM dump packet processing			
		Check that the OBSM is processing the incoming memory dump packets.			
15		Save merged image		Next Step: END	
		WAIT for execution completion of the last dump command.			
		Save merged image with **new ID**.			
		End of Sequence			
	OFCP224J	*TC Seq. Name :* OFCP224J (ACC EEPROM2 GI upd R) ACC PM EEPROM2 Gnd image update in Retrieval mode *TimeTag Type:* *Sub Schedule ID:*			
16		MCS OBSM preparation for Image update in RETRIEVAL mode		Next Step: 17	
		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.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
16.1		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.			
16.2		Select image to be updated			
16.2.1		IF ACC PM A			
		Select the image to be updated for the memory device **ACCEE2PG.** The 'Image UPDATE' window opens.			
16.2.1.1		ELSE ACC PM B			
		Select the image to be updated for the memory device **ACCEE2PB.** The 'Image UPDATE' window opens.			
16.3		Start dump TM packets processing			
		Set **retrieval start** and **stop time** and start retrieval of TM packets using the **PLAY buttons**.			
17		Retrieve and process TM(6,6) packets		Next Step: 18	
		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.			

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18		Save merged image		Next Step: END	
		WAIT for retrieval completion of the last dump packet.			
		Save merged image with **new ID**.			
		End of Sequence			
		End of Procedure			