

Dump of CDMU memories (code and constants)
File: H_COP_OBS_0210.xls
Author: lstefanov-hp



Procedure Summary

Objectives

This Herschel OBSM commissioning procedure is used to perform CDMU memory ground images update from memory dump. The procedure is meant to be used for updating the OBSM ground images in the Commissioning phase, but it can also be used for commanding and monitoring CDMU memory dumps in any other mission phase. The procedure assumes that the ground image updates are conducted in Retrieval.

The procedure assumes that full dumps of code and constant memory areas (no variable areas) are dumped for the following CDMU memory devices:

- CDMU PM PROM
- CDMU PM EEPROM1&2
- CDMU CPU RAM (OBS image)
- CDMU TTR SGM A&B

The memory dump is commanded using TC(6,5) and the memory locations content is received on ground in TM(6,6) packets.

The memory dumps are commanded using the TC sequence generated from this procedure, and not OBSM generated command stacks.

Summary of Constraints

CDMU in Operational Mode

The CDMU CPU RAM dump requests may not cross the border between Write Protected (WP) and Not Protected (NP) areas. If the border is violated, the command is rejected.

The CDMU SGM dump requests may not cross the border between: BSW Write Protected (BSW WP), ASW Write Protected (ASW WP), BSW Not Protected (BSW NP) and ASW Not Protected (ASW NP) areas. If a border is violated, the corresponding command is rejected.

The CDMU SGM dump requests shall observe the 32-bit alignment of the SGM devices. The maximum number of SAUs in a dump command shall be FFFC hex, instead of FFFF hex.

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

End of Procedure

Same as start except:
- CDMU memory dump sequence executed

Reference File(s)

Status : Version 2 - Unchanged
Last Checkin: 31/03/09

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Input Command Sequences

Output Command Sequences

OCOP0210

Referenced Displays

ANDs GRDs SLDs

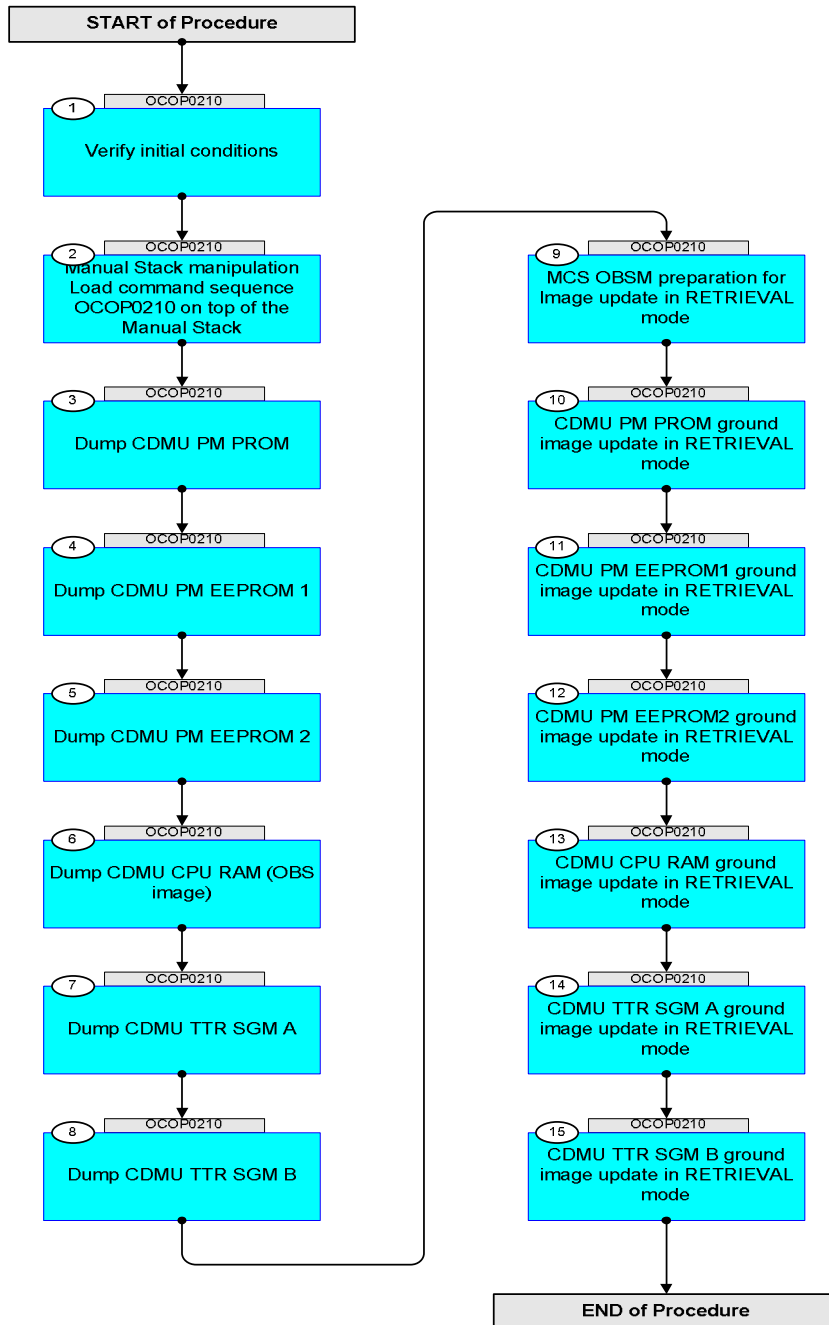
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
31/03/09		1	Created	lstefanov-hp	
31/03/09	2.3	2	1. 'S/C Configuration' at 'End of Procedure' updated on proc. cover page	lstefanov-hp	

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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					
	OCOP0210	TC Seq. Name : OCOP0210 (CDMU Mem Dump) CDMU memories dump (code and constants) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>			
1		Verify initial conditions		Next Step: 2	
		Check: - CDMU in Operational mode			
		CDMS SOE to confirm CDMU mode			
2		Manual Stack manipulation Load command sequence OCOP0210 on top of the Manual Stack		Next Step: 3	
2.1		Sequence data FP: N/A TT: N/A			
3		Dump CDMU PM PROM		Next Step: 4	
		For a full CDMU PM PROM dump (Memory ID = 0000 included in the address): Start Address = 0000.0000 hex End Address = 0000.FFFF hex Length = 10000 hex			
		Uplink the memory dump commands with ARM-GO			
		IMPORTANT: All commands in the sequence have delta release times and will be dispatched by the ARM-GO			
		Note: Ground image updates or dump data monitoring against already existing OBSM ground images will be done in Retrieval mode. This can be done in paralel with memory dump commands uplink.			
		2 TCs for CDMU PM PROM dump			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
4		Dump CDMU PM EEPROM 1		Next Step: 5	
		For a full CDMU PM EEPROM1 dump (Memory ID = 008 included in the address): Start Address = 0080.0000 hex End Address = 008F.FFFF hex Length = 100000 hex			
		17 TCs for CDMU PM EEPROM1 dump			
	ET=+ UT=+00.00.20	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
5		Dump CDMU PM EEPROM 2		Next Step: 6	
		For a full CDMU PM EEPROM2 dump (Memory ID = 009 included in the address): Start Address = 0090.0000 hex End Address = 009F.FFFF hex Length = 100000 hex			
		17 TCs for CDMU PM EEPROM2 dump			
	ET+= UT+=00.00.20	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
6		Dump CDMU CPU RAM (OBS image)		Next Step: 7	
		For a dump of the CDMU CPU RAM OBS image (Memory ID = 02 included in the address): Start Address = 0200.0000 hex End Address = 020F.FFBF hex Length = FFFC0 hex			

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		<p>IMPORTANT: The CDMU CPU RAM dump request may not cross the border between Write Protected (WP) and Not Protected (NP) areas. If the border is violated, the command is rejected.</p> <p>The allocation of CPU RAM between WP and NP memory is defined at link time. The BSW constant, WriteProtectedRamEndAddr_C, points to the first byte of the unprotected RAM.</p> <p>For Herschel CDMU OBS v.3.8.2.1 WriteProtectedRamEndAddr_C = 020C.BAD0 hex</p>			
		17 TCs for CDMU CPU RAM (OBS image only) dump			
	ET+= UT+=00.00.20	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
7		Dump CDMU TTR SGM A		Next Step: 8	
		IMPORTANT: - On each SGM A and B, the memory area is split in two parts where the first part is write protected and second part is unprotected. - Each protected and unprotected area is divided into one part allocated to the ASW and one part allocated to the BSW			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		For CDMU ASW v.3.8.0 and BSW v.2.2, the definitions of the 4 SGM A memory areas are (Memory ID = 00B hex included): SGM BSW WP Start Address = 00B0.0000 hex Length = 80 hex SGM ASW WP Start Address = 00B0.0080 hex Length = 3FF80 hex			
		SGM BSW NP Start Address = 00B4.0000 hex Length = 46100 hex SGM ASW NP Start Address = 00B8.6100 hex Length = 39F00 hex			
		IMPORTANT: All accesses to SGM memory must be 32-bit transfers, aligned to 32-bit boundaries.			
		14 TCs for CDMU TTR SGM A dump			
7.1		Dump CDMU SGM A BSW Write Protected area			
		For a full CDMU SGM A BSW WP area dump (Memory ID = 00B hex included): Start Address = 00B0.0000 hex End Address = 00B0.007F hex Length = 80 hex			
		1 TC for CDMU SGM A BSW WP area dump			
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
7.2		Dump CDMU SGM A ASW Write Protected area			
		For a full CDMU SGM A ASW WP area dump (Memory ID = 00B hex included): Start Address = 00B0.0080 hex End Address = 00B3.FFFF hex Length = 3FF80 hex			
		4 TCs for CDMU SGM A ASW WP area dump			

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	ET=+ UT=+00.00.20	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
7.3		Dump CDMU SGM A BSW Not Protected area			
		For a full CDMU SGM A BSW NP area dump (Memory ID = 00B hex included): Start Address = 00B4.0000 hex End Address = 00B8.60FF hex Length = 46100 hex			
		5 TCs for CDMU SGM A BSW NP area dump			
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
7.4		Dump CDMU SGM A ASW Not Protected area			
		For a full CDMU SGM A ASW NP area dump (Memory ID = 00B hex included): Start Address = 00B8.6100 hex End Address = 00BB.FFFF hex Length = 39F00 hex			
		4 TCs for CDMU SGM A ASW NP area dump			
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
8		Dump CDMU TTR SGM B		Next Step: 9	
		IMPORTANT: - On each SGM A and B, the memory area is split in two parts where the first part is write protected and second part is unprotected. - Each protected and unprotected area is divided into one part allocated to the ASW and one part allocated to the BSW			
		For CDMU ASW v.3.8.0 and BSW v.2.2, the definitions of the 4 SGM B memory areas are (Memory ID = 00E hex included): SGM BSW WP Start Address = 00E0.0000 hex Length = 80 hex SGM ASW WP Start Address = 00E0.0080 hex Length = 3FF80 hex			
		SGM BSW NP Start Address = 00E4.0000 hex Length = 46100 hex SGM ASW NP Start Address = 00E8.6100 hex Length = 39F00 hex			
		IMPORTANT: All accesses to SGM memory must be 32-bit transfers, aligned to 32-bit boundaries.			
		14 TCs for CDMU TTR SGM B dump			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
8.1		Dump CDMU SGM B BSW Write Protected area			
		For a full CDMU SGM B BSW WP area dump (Memory ID = 00E hex included): Start Address = 00E0.0000 hex End Address = 00E0.007F hex Length = 80 hex			
		1 TC for CDMU SGM B BSW WP area dump			
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
8.2		Dump CDMU SGM B ASW Write Protected area			
		For a full CDMU SGM B ASW WP area dump (Memory ID = 00E hex included): Start Address = 00E0.0080 hex End Address = 00E3.FFFF hex Length = 3FF80 hex			
		4 TCs for CDMU SGM B ASW WP area dump			
	ET+= UT+=00.00.20	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET+= UT+=00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
8.3		Dump CDMU SGM B BSW Not Protected area			
		For a full CDMU SGM B BSW NP area dump (Memory ID = 00E hex included): Start Address = 00E4.0000 hex End Address = 00E8.60FF hex Length = 46100 hex			
		5 TCs for CDMU SGM B BSW NP area dump			
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
8.4		Dump CDMU SGM B ASW Not Protected area			
		For a full CDMU SGM B ASW NP area dump (Memory ID = 00E hex included): Start Address = 00E8.6100 hex End Address = 00EB.FFFF hex Length = 39F00 hex			
		4 TCs for CDMU SGM B ASW NP area dump			
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	
	ET=+ UT=+00.00.40	Execute Telecommand DumpMem_AbsAddr Command Parameter(s) : Memory_ID DH003180 Start_Address DH004180 N DH105180 Subsch. ID : 10 Det. descr. : Dump Memory Using Absolute Addresses	DC602180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
9		MCS OBSM preparation for Image update in RETRIEVAL mode		Next Step: 10	
		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.			
		Note: Following steps assume Image UPDATE from dump data is executed. IF dump data is to be monitored against already existing OBSM ground images, 'Image UPDATE' preparation activities in the following steps shall be replaced by 'Image MONITOR'.			
10		CDMU PM PROM ground image update in RETRIEVAL mode		Next Step: 11	
10.1		Select 'Image UPDATE' from the menu			
		Select the Image menu of the <i>OBSM Desktop</i> . From the Image menu, select Update . The 'Image Catalog' window opens.			
10.2		Select image to be updated			
10.2.1		IF CDMU PM A			
		Select the image to be updated for the memory device CDMUPRPG . The 'Image UPDATE' window opens.			
10.2.2		ELSE CDMU PM B			
		Select the image to be updated for the memory device CDMUPRPB . The 'Image UPDATE' window opens.			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
10.3		Start dump TM packets processing			
		Set retrieval start and stop time and start retrieval of TM packets using the PLAY buttons.			
10.4		Retrieve and process TM(6,6) packets			
		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.			
10.5		Save merged image			
		Save merged image with new ID .			
11		CDMU PM EEPROM1 ground image update in RETRIEVAL mode		Next Step: 12	
11.1		Select 'Image UPDATE' from the menu			
		Select the Image menu of the <i>OBSM Desktop</i> . From the Image menu, select Update . The 'Image Catalog' window opens.			
11.2		Select image to be updated			
11.2.1		IF CDMU PM A			

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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 CDMEE1PG . The 'Image UPDATE' window opens.			
11.2.2		ELSE CDMU PM B			
		Select the image to be updated for the memory device CDMEE1PB . The 'Image UPDATE' window opens.			
11.3		Start dump TM packets processing			
		Set retrieval start and stop time and start retrieval of TM packets using the PLAY buttons.			
11.4		Retrieve and process TM(6,6) packets			
		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.			
11.5		Save merged image			
		Save merged image with new ID .			
12		CDMU PM EEPROM2 ground image update in RETRIEVAL mode		Next Step: 13	
12.1		Select 'Image UPDATE' from the menu			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Select the Image menu of the <i>OBSM Desktop</i> . From the Image menu, select Update . The 'Image Catalog' window opens.			
12.2		Select image to be updated			
12.2.1		IF CDMU PM A			
		Select the image to be updated for the memory device CDMEE2PG . The 'Image UPDATE' window opens.			
12.2.2		ELSE CDMU PM B			
		Select the image to be updated for the memory device CDMEE2PB . The 'Image UPDATE' window opens.			
12.3		Start dump TM packets processing			
		Set retrieval start and stop time and start retrieval of TM packets using the PLAY buttons.			
12.4		Retrieve and process TM(6,6) packets			
		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.			
12.5		Save merged image			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Save merged image with new ID .			
13		CDMU CPU RAM ground image update in RETRIEVAL mode		Next Step: 14	
13.1		Select 'Image UPDATE' from the menu			
		Select the Image menu of the <i>OBSM Desktop</i> . From the Image menu, select Update . The 'Image Catalog' window opens.			
13.2		Select image to be updated			
13.2.1		IF CDMU PM A			
		Select the image to be updated for the memory device CDMRMCPU . The 'Image UPDATE' window opens.			
13.2.2		ELSE CDMU PM B			
		Select the image to be updated for the memory device CDMRMCPB . The 'Image UPDATE' window opens.			
13.3		Start dump TM packets processing			
		Set retrieval start and stop time and start retrieval of TM packets using the PLAY buttons.			
13.4		Retrieve and process TM(6,6) packets			
		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			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		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.			
13.5		Save merged image			
		Save merged image with new ID .			
14		CDMU TTR SGM A ground image update in RETRIEVAL mode		Next Step: 15	
14.1		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.			
14.2		Select image to be updated			
		Select the image to be updated for the memory device CSGMAMEM . The 'Image UPDATE' window opens.			
14.3		Start dump TM packets processing			
		Set retrieval start and stop time and start retrieval of TM packets using the PLAY buttons.			
14.4		Retrieve and process TM(6,6) packets			
		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			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		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.			
14.5		Save merged image			
		Save merged image with new ID .			
15		CDMU TTR SGM B ground image update in RETRIEVAL mode		Next Step: END	
15.1		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.			
15.2		Select image to be updated			
		Select the image to be updated for the memory device CSGMBMEM . The 'Image UPDATE' window opens.			
15.3		Start dump TM packets processing			
		Set retrieval start and stop time and start retrieval of TM packets using the PLAY buttons.			
15.4		Retrieve and process TM(6,6) packets			
		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			

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