

Dump and verify OBCP code
File: H_FCP_OBS_7114.xls
Author: lstefanov-hp



Procedure Summary

Objectives

This Herschel OBSM nominal procedure is used to perform the dump and verification of the OBCP code for a selected OBCP. The OBCP code dump via TC(18,14) is executed using an OBSM generated command stack. The command stack generation is not covered by current procedure. The OBCP code is verified against the ground image using the OBSM 'Image MONITOR' function.

Summary of Constraints

The ASW function "OBCP Management" is responsible of dumping OBCPs. No OBCP can be dumped when the function is Stopped.

Default status of the function: "Stopped".

When the function is stopped, it does not accept any other telecommands than the:

- Start Function TC(8,1,107);
- Report Function Status TC(8,5,107).

Thus, if the function is stopped this procedure cannot be executed.

Spacecraft Configuration

Start of Procedure

CDMU in Nominal configuration, that is:

- PM A or B ON (nominally A)
- TM Encoder/OBT A or B active (nominally A)
- RM A and B enabled
- MM A and B ON

"OBCP Management" function Stopped or Running

End of Procedure

CDMU in Nominal configuration:

- PM A or B ON (nominally A)
- TM Encoder/OBT A or B active (nominally A)
- RM A and B enabled
- MM A and B ON

"OBCP Management" function Running
Selected OBCP dumped

Reference File(s)

Input Command Sequences

Output Command Sequences

OFCP7114

Referenced Displays

ANDs GRDs SLDs

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ZAZAI999 (None)
 ZAZ4Q999

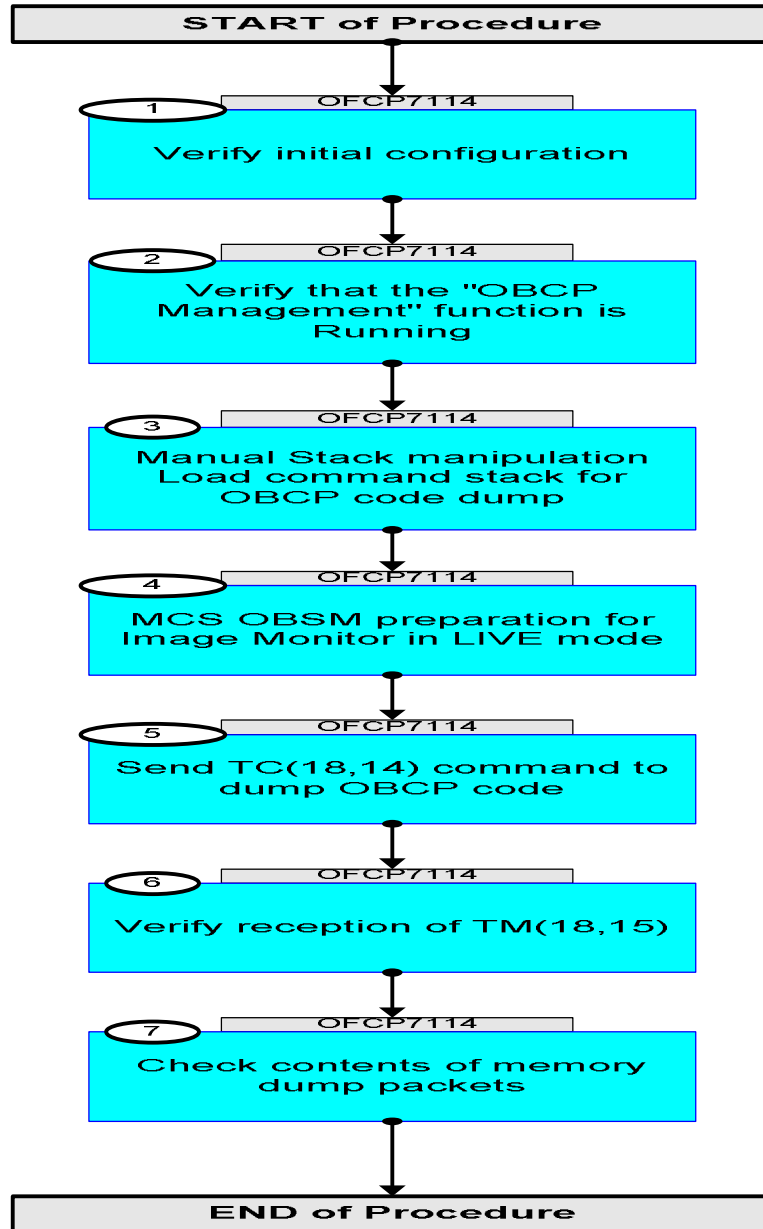
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
13/06/08	1	1	Created	lstefanov-hp	
01/04/09	2.3	2	1. steps 2, 6.1, 6.2.1 and 6.2.2 updated in line with DB for CDMS OBS v.3.8.2	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					
OFCP7114		TC Seq. Name : OFCP7114 (DmpObcpCode) Dump and verify OBCP code TimeTag Type: B Sub Schedule ID: <input type="checkbox"/>			
1		Verify initial configuration		Next Step: 2	
		Check CDMU Nominal configuration: - PM A or B ON (nominally A) - TM Encoder/OBT A or B active (nominally A) - RM A and B enabled - MM A and B ON			
2		Verify that the "OBCP Management" function is Running		Next Step: 3	
		Verify Telemetry	ObcpSts	DEH36170	= Running
				AND=ZAZAI999	
2.1		IF "OBCP Management" function NOT Running THEN Start the OBCP function via H_FCP_DHS_3046			
		H_FCP_DHS_3046 Start or stop the whole OBCP function			
3		Manual Stack manipulation Load command stack for OBCP code dump		Next Step: 4	
		Select the File -> Loadstack option from the main menu of the Manual Stack window			
		Select file OBCPCDMU_DI_XXXXYYY_N_NoModel_NoModel_YYYY_DDDThhmmss.machine from directory /home/hmcsops/HPMCS/SESSION/current/data/CMD/STACKS/OBSM/OBCPCDMU 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			


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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		File name example: OBCPCDMU_DI_0002001_N_NoModel_NoModel_2008_133T123400_sun045			
3.1		Check OBCP code dump command stack loaded			
		The value of the ObcpId parameter depends on the OBCP selected.			
		Execute Telecommand <div style="text-align: right; margin-right: 20px;">DumpObcp</div> Command Parameter(s) : <div style="text-align: right; margin-right: 20px;">ObcpId DH135170</div> TC Control Flags : <div style="text-align: right; margin-right: 20px;">GBM IL DSE --Y -- ---</div> Subsch. ID : 10 Det. descr. : TEMPLATE DumpOBCP TC(18,14) This Telecommand will not be included in the export	DCT79170	TC	Selected OBCP ID
4		MCS OBSM preparation for Image Monitor in LIVE mode		Next Step: 5	
		Note: It is assumed that the OBSM application is already running and the OBSM Desktop is displayed on the MCS client. Starting the OBSM application is not covered by the current procedure.			
4.1		Select 'Image 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.			
4.2		Select image to be monitored			
		Select the image to be updated for the memory device OBCPCDMU . The 'Image MONITOR' window opens.			
5		Send TC(18,14) command to dump OBCP code		Next Step: 6	
		Uplink TC with ARM GO			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <div style="text-align: right; margin-right: 100px;">DumpObcP</div> Command Parameter(s) : <div style="text-align: right; margin-right: 100px;">ObcPId DH135170</div> TC Control Flags : <div style="text-align: right; margin-right: 100px;">GBM IL DSE</div> <div style="text-align: right; margin-right: 100px;">--Y -- ---</div> Subsch. ID : 10 Det. descr. : TEMPLATE DumpOBCP TC(18,14) This Telecommand will not be included in the export	DCT79170	TC	
		Note: Following successful execution of TC(18,14), one or several TM(18,15) are received on ground.			
6		Verify reception of TM(18,15)		Next Step: 7	
		Note: One or more TM(18,15) packets will be received for the OBCP code dump command uplinked.			
		Note: The OBCP procedure is dumped at a 6 packets per second rate, thus reporting an OBCP of maximum length requires 39 seconds. IMPORTANT Execution of other TC of OBCP management function are delayed during a dump.			
		Note: If the length of an OBCP code allows its reporting with a single TM(18,15) packet, the Segment-Identifier will be set to zero. If the length of an OBCP code requires, for its reporting, a sequence of TM packets, each of them shall be identified by a unique Segment-Identifier and shall carry a segment of the overall OBCP code. If the dumped OBCP is divided into K Segments, the Segment-ID shall always start with 1, and be incremented up to K (allowed range : 1 to 254). After transmission of the K TM-packets, a TM(18,15) shall be sent with Segment-ID set to FF hex, and Length set to zero.			
6.1		IF OBCP code dumped in a single TM(18,15) packet			
		If the OBCP code size doesn't exceed 1016 bytes , a single TM(18,15) packet is needed			
		The N_Repet_8bit parameter in the TM(18,15) packet has a value between 1 and 1016 , depending on the size of the OBCP code. The number of ObcPCode parameters is equal to the value of N_Repet_8bit .			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Verify Packet Reception TM 18-15 Dump of a copy of an OBCP Packet Mnemonic : ObcpDump APID : 16 Type : 18 Subtype : 15 PI1 : PI2 :			
		Verify Telemetry ProcedureID DE293170	Sel. OBCP ID	AND=ZAZ4Q999	
		Verify Telemetry ObcpSegmId DE313170	= 0 <dec>	(None)	
		Verify Telemetry N_Repet_8bit DE315170	= N	(None)	
		The following parameter is repeated N times			
		Verify Telemetry ObcpCode DE314170	= OBCP code	(None)	
6.2		IF OBCP code dumped in several TM(18,15) packets			
		If the OBCP code size exceeds 1016 bytes , several TM(18,15) packets are needed			
		Note: If the dumped OBCP is divided into K Segments, the Segment-ID shall always start with 1, and be incremented up to K (allowed range : 1 to 254). After transmission of the K TM-packets, a TM(18,15) shall be sent with Segment-ID set to FF hex, and Length set to zero.			
6.2.1		Check the K TM(18,15) packets required to dump the OBCP code			
		The ObcpSegmId parameter has a value between 1 and K (max.254). The N_Repet_8bit parameter in the first K-1 TM(18,15) packets has a value of 1016 . The N_Repet_8bit parameter in the K TM(18,15) packet has a value between 1 and 1016 , depending on the size of the OBCP code. The number of ObcpCode parameters is equal to the value of N_Repet_8bit.			
		Verify Packet Reception TM 18-15 Dump of a copy of an OBCP Packet Mnemonic : ObcpDump APID : 16 Type : 18 Subtype : 15 PI1 : PI2 :			
		Verify Telemetry ProcedureID DE293170	Sel. OBCP ID	AND=ZAZ4Q999	
		Verify Telemetry ObcpSegmId DE313170	1 to K (max.254)	(None)	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Verify Telemetry N_Repet_8bit DE315170	= N	(None)	
		The following parameter is repeated N times			
		Verify Telemetry ObcpCode DE314170	= OBCP code	(None)	
6.2.2		Check the last TM(18,15) packet at the end of the dump			
		The ObcpSegmId parameter has a value of FF hex . The N_Repet_8bit parameter has a value of 0 . There are no ObcpCode parameters in the packet.			
		Verify Packet Reception TM 18-15 Dump of a copy of an OBCP Packet Mnemonic : ObcpDump APID : 16 Type : 18 Subtype : 15 PI1 : PI2 :			
		Verify Telemetry ProcedureID DE293170	Sel. OBCP ID	AND=ZAZ4Q999	
		Verify Telemetry ObcpSegmId DE313170	= FF <hex>	(None)	
		Verify Telemetry N_Repet_8bit DE315170	= 0 <dec>	(None)	
7		Check contents of memory dump packets		Next Step: END	
		Verify that there are NO OBSM reported differences between the OBCP code 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.			
7.1		Save merged image			
		IF there are mismatches reported by OBSM, save merged image with with new ID .			
End of Sequence					
End of Procedure					