TM packet store downlink and maintenance
File: H_FCP_DHS_3037.xls
Author: S. Manganelli

Procedure Summary

Objectives

This procedure describes the steps needed to perform one of the
following actions related to the Packet Stores:
- Report storage selection definition;
- Downlink packet store contents (except CEL and SEL, downlinked
via dedicated procedures);
- Downlink packet store contents for a specified time period;
- Delete packet store contents up to specified storage time;
- Report catalogues for selected packet store;
- Stop packet store downlink.

Summary of Constraints

TC(15,5) is rejected for CEL.

For the CEL all downlinked packets (up to stop of last download)
will be deleted with TC(15,11), while for the other packet stores
only all packets up to the specified "end time" will be deleted
(downlinked or not).

Note that TC(15,7), TC(15,11) and TC(15,12) will fail when there
is an ongoing TC(8,4,2,3) (Check Mass Memory), TC(8,4,2,4) (Map
Mass Memory), TC(8,4,2,5) (Turn Bank on/off) or TC(8,4,2,6)
(Initialise Mass Memory) using the same MM board.

Moreover TC(15,7) will fail when there is already an ongoing
TC(15,7) using the same virtual channel.

```
CEL on SSMMA          --> Store 127
Default on SSMMA      --> Store 0
SEL on SSMMA          --> Store 1
HK on SSMMA           --> Store 2
Science on SSMMA      --> Store 3

CEL on SSMMB          --> Store 255
Default on SSMMB      --> Store 128
SEL on SSMMB          --> Store 129
HK on SSMMB           --> Store 130
Science on SSMMB      --> Store 131
```

Spacecraft Configuration

Start of Procedure

CDMU in default 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

End of Procedure

CDMU in default 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

Reference File(s)

Input Command Sequences

Status   : Version 13 - Unchanged
Last Checkin: 19/04/09

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Output Command Sequences

```
                    HFD3037C
                    HFD3037D
                    HFD3037E
                    HFD3037F
                    HFD3037G
                    HFD3037A
```
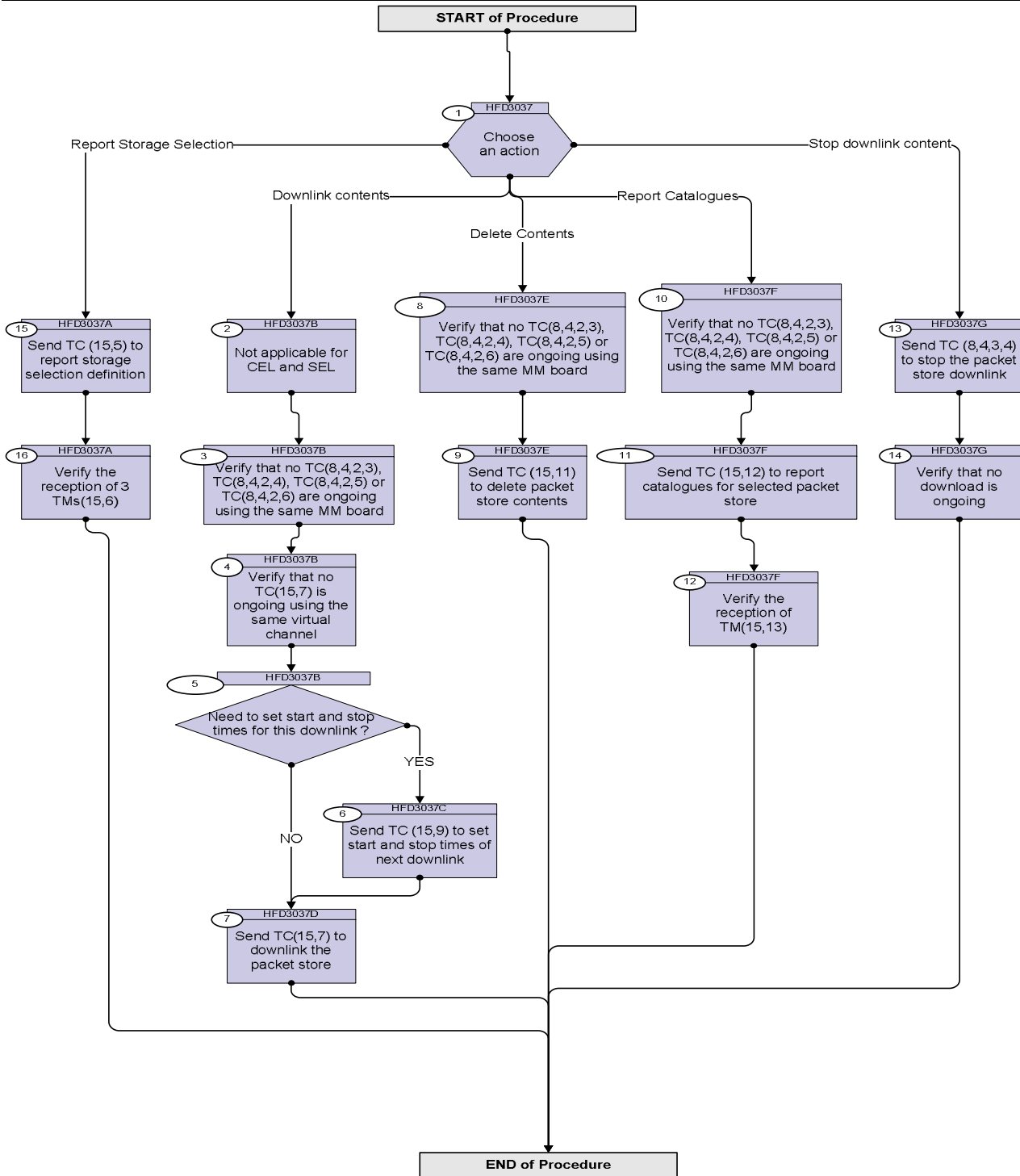
Referenced Displays

ANDs	GRDs	SLDs
ZAD22999		(None)
ZAZAO999		
ZAZ7P999		
ZAZ7T999		
ZAZ0G999		
ZAZ0J999		
ZAZ0M999		

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
28/11/07		1	Created	cmevi-hp	
10/12/07		2	Formal parameters introduced.	cmevi-hp	
24/01/08		3	Batch update of TC flags	S. Manganelli	
13/02/08		4	Comments from TAS-I processed. Formal parameter STOREID introduced in steps 12, 13 and 14.	cmevi-hp	
21/07/08	1	5	Command to ask for Packet Store Cat report added in step 28.	cmevi-hp	
03/09/08		6	DB update following OBSW 3_6 (Packet type changed)	S. Manganelli	
23/11/08		7	Updated following Industry inputs 16 oct 08 - TC structures to be verified	S. Manganelli	
10/01/09	2	8	Updated following OBSW 3_8	S. Manganelli	
26/02/09		9	Commands to ask for reports with with stores pointers added in step 13.	cmevi-hp	
27/02/09		10	Some TM checks added in sequence HFD3037G	cmevi-hp	
02/03/09	2.1	11	Formal parameter list in sequence HFD3037G corrected	cmevi-hp	
15/03/09	2.2	12	Fixed MOIS FP bug	S. Manganelli	
19/04/09	2.3	13	Added warning comment at step 6.4 to describe interpretation of TC DownlinkTimeAfter	S. Manganelli	

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Procedure Flowchart Overview

START of Procedure

1 HFD3037
Choose an action

Report Storage Selection

Stop downlink content

Downlink contents

Report Catalogues

Delete Contents

15 HFD3037A
Send TC (15,5) to report storage selection definition

2 HFD3037B
Not applicable for CEL and SEL

8 HFD3037E
Verify that no TC(8,4,2,3), TC(8,4,2,4), TC(8,4,2,5) or TC(8,4,2,6) are ongoing using the same MM board

10 HFD3037F
Verify that no TC(8,4,2,3), TC(8,4,2,4), TC(8,4,2,5) or TC(8,4,2,6) are ongoing using the same MM board

13 HFD3037G
Send TC (8,4,3,4) to stop the packet store downlink

16 HFD3037A
Verify the reception of 3 TMs(15,6)

3 HFD3037B
Verify that no TC(8,4,2,3), TC(8,4,2,4), TC(8,4,2,5) or TC(8,4,2,6) are ongoing using the same MM board

9 HFD3037E
Send TC (15,11) to delete packet store contents

11 HFD3037F
Send TC (15,12) to report catalogues for selected packet store

14 HFD3037G
Verify that no download is ongoing

4 HFD3037B
Verify that no TC(15,7) is ongoing using the same virtual channel

12 HFD3037F
Verify the reception of TM(15,13)

5 HFD3037B
Need to set start and stop times for this downlink ?

YES

NO

6 HFD3037C
Send TC (15,9) to set start and stop times of next downlink

7 HFD3037D
Send TC(15,7) to downlink the packet store

END of Procedure

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		TC Seq. Name :HFD3037 (Dummy sequence) *TimeTag Type:* *Sub Schedule ID:*		
1		*Choose an action*		Next Step: Downlink contents 2 Delete Contents 8 Report Catalogues 10 Stop downlink content 13 Report Storage Selection 15
		TC Seq. Name :HFD3037B (Dummy) *TimeTag Type:* *Sub Schedule ID:*		
2		*Not applicable for CEL and SEL* **CEL downlink is done by H_FCP_DHS_3014** **SEL downlink is done by H_FCP_DHS_3015**		Next Step: 3
3		*Verify that no TC(8,4,2,3), TC(8,4,2,4), TC(8,4,2,5) or TC(8,4,2,6) are ongoing using the same MM board*		Next Step: 4
		Verify Telemetry TC_8-4-2-3_x DEE0J161	= FALSE	AND=ZAD22999
		Verify Telemetry TC_8-4-2-4_x DEE0K161	= FALSE	AND=ZAD22999
		Verify Telemetry TC_8-4-2-5_x DEE0L161	= FALSE	AND=ZAD22999
		Verify Telemetry TC_8-4-2-6_x DEE0M161	= FALSE	AND=ZAD22999
4		*Verify that no TC(15,7) is ongoing using the same virtual channel*		Next Step: 5
		The Virtual Channel allocation is reported in TM(15,6)		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
4.1		*Check no TC(15,7) using VC2 is ongoing*		
		Verify Telemetry DownloadOnVC2 **DELA1160**	**= 0 <dec>**	AND=ZAZAO999
4.2		*Check no TC(15,7) using VC3 is ongoing*		
		Verify Telemetry DownloadOnVC3 **DELA2160**	**= 0 <dec>**	AND=ZAZAO999
5		*Need to set start and stop times for this downlink ?*		Next Step: NO 7 YES 6
		TC Seq. Name :HFD3037C (Set time next dwnlnk) *TimeTag Type: B* *Sub Schedule ID:* *Formal Parameter List :* Store_Id STOREID= <dec>		
6		*Send TC (15,9) to set start and stop times of next downlink*		Next Step: 7
		When this request is received by the CDMS, the time period for the next packet retrieval from Packet Stores will be set (different from the default setting). **When the downlinking is actually started at reception of Telecommand (15,7) the CDMS downlinks the contents of the specified Packet Store falling within the specified time period.** **Whatever the value of Time Span, the retrieval ends at the latest when the last packet stored at the time of reception of the request has been downlinked.** **After completion of execution of the packet retrieval the downlink time period shall be set to its default values, i.e. the next packet retrieval starts where the last retrieval has ended.**		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		In the TC(15,9) it is necessary to set the following parameters: **- Store ID: identifier of the Packet Store from which TM packets are to be downlinked;** **- Time Span: indicates how the packet range is specified.** The four possible values are # "**All**" (value = 0), the full contents of the Packet Store are to be downlinked; # "**Between**" (value = 1), the set of packets whose storage times are between Storage Time 1 and Storage Time 2 inclusive; # "**Before**" (value = 2), the set of packets whose storage times are Less than or equal to Storage Time 1; # "**After**" (value = 3), the set of packets whose storage times are Greater than or equal to Storage Time 1. **- Storage Time 1, Storage Time 2: optionals, the absolute time(s) defining the boundary(ies) of the range of packets to be downlinked.** Storage Time 1 is present if Time Span is not "All". Storage Time 2 is only present if Time Span is "Between".		
		WARNING: only one of the following TCs must be sent.		
6.1		*The entire contents of the specified Packet Store will be downloaded at reception of the next TC(15,7)*		

		Execute Telecommand
		                          DownlinkTimeP_All
		
		Command Parameter(s) :
		          Store_Id DH003160
		
		TC Control Flags :
		                    GBM IL DSE
		                    --Y -- ---
		Subsch. ID : 10
		Det. descr. : Downlink Full Contents of Packet Store
		This Telecommand will not be included in the export
			DC163160
			
			pkt store nr	

6.2		*The contents of the specified Packet Store between two Absolute dates (inclusive) will be downloaded at reception of the next TC(15,7)*		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch

		Execute Telecommand
		        DownlinkTimeP_Between
		
		Command Parameter(s) :
		      Store_Id **DH003160**
		   Storage_Time **DH062160**
		   Storage_Time **DH062160**
		
		TC Control Flags :
		          GBM IL DSE
		          --Y -- ---
		
		Subsch. ID : 10
		Det. descr. : Downlink Packets between Storage Time1
		and Storage Time2
		This Telecommand will not be included in the export
			DC164160
			
			The pkt store nr
			Absolute_time_1
			Absolute_time_2	

		or the following command if no valid TCO is available		

		Execute Telecommand
		        DownlinkTimeP_Between
		
		Command Parameter(s) :
		      Store_Id **XH005991**
		   Coarse Time **XH027991**
		    Fine Time **XH028991**
		   Coarse Time **XH027991**
		    Fine Time **XH028991**
		
		TC Control Flags :
		          GBM IL DSE
		          --Y -- ---
		
		Subsch. ID : 10
		Det. descr. : Downlink Packets between Storage Time1
		and Storage Time2
		
		This Telecommand will not be included in the export
			XC306991
			
			STOREID
			Coarse_time_1
			Fine_time_1
			Coarse_time_2
			Fine_time_2	

6.3		*The contents of the specified Packet Store prior to a specific date will be downloaded at reception of the next TC(15,7)*		

		Execute Telecommand
		        DownlinkTimeP_Before
		
		Command Parameter(s) :
		      Store_Id **DH003160**
		   Storage_Time **DH062160**
		
		TC Control Flags :
		          GBM IL DSE
		          --Y -- ---
		
		Subsch. ID : 10
		Det. descr. : Downlink Packets before Storage Time1
		This Telecommand will not be included in the export
			DC165160
			
			pkt store nr
			Absolute_time_1	

		or the following command if no valid TCO is available		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch

		Execute Telecommand
		
		                    DownlinkTimeP_Before
		
		Command Parameter(s) :
		            Store_Id XH005991
		            Coarse Time XH027991
		            Fine Time XH028991
		
		TC Control Flags :
		                          GBM IL DSE
		                          --Y -- ---
		
		Subsch. ID : 10
		Det. descr. : Downlink Packets before Storage Time1
		This Telecommand will not be included in the export
			XC307991
			
			pkt store nr
			Coarse_time_1
			Fine_time_1	

6.4		*The contents of the specified Packet Store after a specific date will be downloaded at reception of the next TC(15,7)*		

		Execute Telecommand
		
		                    DownlinkTimeP_After
		
		Command Parameter(s) :
		            Store_Id DH003160
		            Storage_Time DH062160
		
		TC Control Flags :
		                          GBM IL DSE
		                          --Y -- ---
		
		Subsch. ID : 10
		Det. descr. : Downlink Packets after Storage Time1
		This Telecommand will not be included in the export
			DC166160
			
			pkt store nr
			Absolute_time_1	

		or the following command if no valid TCO is available		
		WARNING: after this TC is executed, the **last** data included in next downlink shall be approximately the one **recorded at the time of reception of this TC**, even if data recorded later is available. For this reason THIS TC SHOULD BE UPLINKED JUST BEFORE THE TC TO START THE PACKET STORE DOWNLINK		

		Execute Telecommand
		
		                    DownlinkTimeP_After
		
		Command Parameter(s) :
		            Store_Id XH005991
		            Coarse Time XH027991
		            Fine Time XH028991
		
		TC Control Flags :
		                          GBM IL DSE
		                          --Y -- ---
		
		Subsch. ID : 10
		Det. descr. : Downlink Packets after Storage Time1
		This Telecommand will not be included in the export
			XC308991
			
			pkt store nr
			Coarse_time_1
			Fine_time_1	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		TC Seq. Name :HFD3037D (Start D/L pkt store) *TimeTag Type: B* *Sub Schedule ID:*		
7		*Send TC(15,7) to downlink the packet store*		Next Step: END
		This Telecommand actually starts the downlinking of stored TM packets.		
		If no Telecommand (15,9) with a new downlink time period has been sent, the default downlink period will start at the previous end time of the addressed Packet Store, and last to the time of reception of the TC(15,7) under execution.		
		If a TM packet subset selection is commanded, this selection will only be effective until the requested downlinking session has finished. The default condition for the subset selection is that all data, that are stored in a Packet Store, are downlinked later on.		
		When this request is received by the CDMS, the contents of the specified Packet Store matching with the specified packet subset is downlinked. **If a certain TM packet definition has no matching entry in the list of stored TM packets for the Packet Store, it will be ignored and the downlinking of the rest of the data will be unaffected.**		
		In the TC(15,7) it is necessary to set the following parameters: **- Store ID: identifier of the Packet Store from which TM packets are to be downlinked;** **- N1: number of TM packet APIDs in the Packet Store Storage Selection Definitions that follows;**		
		- APID: identifier of the unit/application for which TM packets are downlinked; **- Type: the associated Telemetry source packet Type;** **- N2: number of Subtype definitions that follow;** **- Sub-Type: the associated Telemetry packet Subtype of the specified Type;**		
		WARNING: only one of the following TCs must be sent.		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
7.1		*All types of TM packets from all Application Processes, which are stored in the specified Packet Store, are to be downlinked within the time range set by a previously sent TC(15,9)*		
		N1=0		

		Execute Telecommand
		
		                    DownlinkPktStoreCont_A
		
		Command Parameter(s) :
		                    Store_Id DH003160
		
		TC Control Flags :
		                              GBM IL DSE
		                              --Y -- ---
		
		Subsch. ID : 10
		Det. descr. : Downlink Packet Store Contents - All stored TM packets
		This Telecommand will not be included in the export
			DC162160
			
			pkt store nr	

7.2		*The specified Type of Telemetry packet from the Application Process, covering all Subtypes, which are stored in the specified Packet Store, are to be downlinked within the time range set by a previously sent TC(15,9)*		
		N1 > 0 and N2 = 0 The following is an example of SUM(N1) + SUM(N2) being odd. **In ESOC we can however ALWAYS use DC161160 because the MCS takes care of inserting the missing byte when necessary at the end of the command data.**		

		Execute Telecommand
		
		                    DownlinkPktStoreCont_O
		
		Command Parameter(s) :
		                    Store_Id DH003160
		                    N1 DH004160
		            App_Process_Id DH065160
		                    Type DH066160
		                    N2 DH005160
		
		TC Control Flags :
		                              GBM IL DSE
		                              --Y -- ---
		
		Subsch. ID : 10
		Det. descr. : Downlink Packet Store Contents. - SUM(N1+N2) odd.
		
		This Telecommand will not be included in the export
			DC171160
			
			pkt store nr
			1 <dec> (Def)
			Application_ID
			Type
			0 <dec>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
7.3		*The specified Type and related Subtypes of Telemetry packets from the Application Process which are stored in the specified Packet Store, are to be downlinked within the time range set by a previously sent TC(15,9)*		
		N1 > 0 and N2 > 0 The following is an example of SUM(N1) + SUM(N2) being even.		

		Execute Telecommand
		        DownlinkPktStoreCont_E
		
		Command Parameter(s) :
		    Store_Id DH003160
		    N1 DH004160
		  App_Process_Id DH065160
		    Type DH066160
		    N2 DH005160
		   Sub-Type DH067160
		
		TC Control Flags :
		       GBM IL DSE
		       --Y -- ---
		Subsch. ID : 10
		
		Det. descr. : Downlink Packet Store Contents. - SUM(N1+N2) even.
		This Telecommand will not be included in the export
			DC161160
			
			pkt store nr
			1 <dec> (Def)
			Application_ID
			Type
			1 <dec> (Def)
			Subtype	

		TC Seq. Name :HFD3037E (Del store content) *TimeTag Type: B* *Sub Schedule ID:*		
8		*Verify that no TC(8,4,2,3), TC(8,4,2,4), TC(8,4,2,5) or TC(8,4,2,6) are ongoing using the same MM board*		Next Step: 9
		Verify Telemetry **TC_8-4-2-3_x** DEE0J161	**= FALSE**	AND=ZAD22999
		Verify Telemetry **TC_8-4-2-4_x** DEE0K161	**= FALSE**	AND=ZAD22999
		Verify Telemetry **TC_8-4-2-5_x** DEE0L161	**= FALSE**	AND=ZAD22999
		Verify Telemetry **TC_8-4-2-6_x** DEE0M161	**= FALSE**	AND=ZAD22999
9		*Send TC (15,11) to delete packet store contents*		Next Step: END

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		When this request is received by the CDMS, the packets in the specified Packet Stores (all Packet Stores if N = 0), which have a storage time earlier than or equal to the specified time, are deleted. The deletion ends at the latest when the last packets stored at the time of reception of the request have been deleted. Note: In case of the CEL, where no time storage concept applies, the TC(15,11) will always delete all downlinked packets. While deletion from a Packet Store is in progress, the storage operation of arriving packets will not be interrupted.		
		In the TC(15,11) it is necessary to set the following parameters: - End Time: the absolute time defining the upper boundary (inclusive) of the packet range to be deleted. - N: number of Packet Stores. By convention, N = 0 means "All Packet Stores". - Store ID: identifier of the Packet Store from which TM packets are to be deleted.		
		WARNING: only one of the following TCs must be sent.		
9.1		*Delete all packets stores contents up to the specified storage time*		

		Execute Telecommand
		                     DelAllPktStores
		
		Command Parameter(s) :
		          End_Time DH063160
		
		TC Control Flags :
		               GBM IL DSE
		               --Y -- ---
		Subsch. ID : 10
		Det. descr. : Delete All Packet Stores
		This Telecommand will not be included in the export
			DC168160
			
			End_Absolute_Time	

		or the following command if no valid TCO is available		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch

		Execute Telecommand
		
		      DelPktStoreContents
		
		 Command Parameter(s) :
		    Coarse Time XH027991
		    Fine Time XH028991
		       N XH004991
		    Store_Id XH005991
		
		 TC Control Flags :
		         GBM IL DSE
		         --Y -- ---
		 Subsch. ID : 10
		 Det. descr. : Delete Packet Stores Contents up to
		 Specified Storage Time
		 This Telecommand will not be included in the export
			XC309991
			
			 End_Coarse_Time
			 End_Fine_Time
			 1 <dec> (Def)
			 pkt store nr	

9.2		*Delete packets stores contents up to specified storage time.*		
		<u>**WARNING: the following TC is a variable length TC which does**</u> <u>**not allow the definition of a generic procedure.**</u> <u>**The following is therefore only an example.**</u>		

		Execute Telecommand
		
		      DelPktStoreContents
		
		 Command Parameter(s) :
		    End_Time DH063160
		       N DH002160
		    Store_Id DH003160
		
		 TC Control Flags :
		         GBM IL DSE
		         --Y -- ---
		 Subsch. ID : 10
		 Det. descr. : Delete Packet Stores Contents up to
		 Specified Storage Time
		 This Telecommand will not be included in the export
			DC167160
			
			 End_Absolute_time
			 1 <dec> (Def)
			 pkt store nr	

		or the following command if no valid TCO is available		

		Execute Telecommand
		
		      DelPktStoreContents
		
		 Command Parameter(s) :
		    Coarse Time XH027991
		    Fine Time XH028991
		       N XH004991
		    Store_Id XH005991
		
		 TC Control Flags :
		         GBM IL DSE
		         --Y -- ---
		 Subsch. ID : 10
		 Det. descr. : Delete Packet Stores Contents up to
		 Specified Storage Time
		 This Telecommand will not be included in the export
			XC309991
			
			 End_Coarse_time
			 End_Fine_time
			 1 <dec> (Def)
			 pkt store nr	

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                                    Fop Issue :              3.0
                                    Issue Date:           13/04/10
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		TC Seq. Name :HFD3037F (Report catalogues) *TimeTag Type: N* *Sub Schedule ID:* *Formal Parameter List :* Packet store ID Store_id=	<dec>	
10		*Verify that no TC(8,4,2,3), TC(8,4,2,4), TC(8,4,2,5) or TC(8,4,2,6) are ongoing using the same MM board*		Next Step: 11
		Verify Telemetry **TC_8-4-2-3_x** DEE0J161	**= FALSE**	AND=ZAD22999
		Verify Telemetry **TC_8-4-2-4_x** DEE0K161	**= FALSE**	AND=ZAD22999
		Verify Telemetry **TC_8-4-2-5_x** DEE0L161	**= FALSE**	AND=ZAD22999
		Verify Telemetry **TC_8-4-2-6_x** DEE0M161	**= FALSE**	AND=ZAD22999
11		*Send TC (15,12) to report catalogues for selected packet store*		Next Step: 12
		When this request is received by the CDMS, the catalogues for the specified Packet Stores are reported with TM(15,13).		

		Execute Telecommand
		              ReportCatSelPktStore
		
		Command Parameter(s) :
		              Store_Id DH003160
		
		TC Control Flags :
		                    GBM IL DSE
		                    --Y -- ---
		Subsch. ID : 10
		Det. descr. : Report Catalogues for Selected Packet Store
			DC169160
			
			Store_id	

12		*Verify the reception of TM(15,13)*		Next Step: END
		For the Critical Event Log, ie (PktStoreID = 127 or 255): • **SAD and EAD are TTR internal addresses** • **FIRST_PTR, DLNK_PTR, CUR_PTR, DLNK_END_PTR and WR_PTR are byte offsets from SAD.** • **All storage times are set to zero** **For all other Packet Stores in the Mass Memory, all pointers and addresses are MM internal addresses.**		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Reception PacketStoresCat 000 *Packet Details:* APID: Type: Subtype: PI1: PI2:	**PkStCat 000** 16 15 13 0	
		Verify Packet Telemetry **PKS_ID** DE069160		(None)
		Verify Packet Telemetry **TYP** DE070160	**Cyclic or Linear**	(None)
		Verify Packet Telemetry If the store is non-empty: Start address of the oldest packet in the store. Else: Equal to SAD. **FIRST_PTR** DE071160		(None)
		Verify Packet Telemetry If a downlink of the store is ongoing: Start address of the 1st packet of the downlink. Else, if a downlink of the store has succeeded: Start address of the 1st packet after the latest successful downlink Else: FIRST_PTR **DLNK_PTR** DE072160		(None)
		Verify Packet Telemetry If a downlink of the store is ongoing: Start address of next packet to be downlinked. Else: Equal to DLNK_PTR **CUR_PTR** DE073160		(None)
		Verify Packet Telemetry If a downlink of the store has been started since last PM board reset: Address of the last byte of the latest started downlink (regardless of status or result). Else: 0 **DLNK_END_PTR** DE074160		(None)
		Verify Packet Telemetry Address where next incoming packet will be stored, if it fits. Else: Address of the byte after the youngest packet in the store. **WR_PTR** DE075160		(None)
		Verify Packet Telemetry If the store is non-empty and NOT CEL: Storage time for the oldest packet in the store. Else: 0 **FIRST_TIM** DE076160		(None)
		Verify Packet Telemetry If NOT CEL and a downlink is ongoing, with a start time defined in TC(15,9): That start time. Else, if NOT CEL and a downlink has succeeded since last PM board reset: The storage time defining the end of that downlink. Else: 0 **DLNK_TIM** DE077160		(None)

TM packet store downlink and maintenance
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Telemetry If NOT CEL and a downlink is ongoing: Storage time of next packet to be downlinked, rounded upwards to the nearest PSIT entry. Else: Equal to DLNK_TIM. **CUR_TIM** **DE078160**		(None)
		Verify Packet Telemetry If NOT CEL and a downlink has been started since last PM board reset: Storage time defining the end of the latest started downlink (regardless of status or result). Else: 0 **DLNK_END_TIM** **DE079160**		(None)
		Verify Packet Telemetry If the store is non-empty and not CEL: Storage time of the youngest packet in the store, rounded downwards to the nearest PSIT entry. Else: 0 **LAST_WR_TIM** **DE080160**		(None)
		Verify Packet Telemetry Packet store start address. **SAD** **DE081160**		(None)
		Verify Packet Telemetry Packet store end address. **EAD** **DE082160**		(None)
		TC Seq. Name :HFD3037G (Stop D/L) *TimeTag Type: N* *Sub Schedule ID:* *Formal Parameter List :* Store_Id STOREID= Packet store ID Store_Id=	`<dec>` `<dec>`	
13		*Send TC (8,4,3,4) to stop the packet store downlink*		Next Step: 14
		A typical scenario when the following command has to be sent is when, in the recovery process following a missed DTCP, the user has to stop the on-going downlink because at the end of the DTCP. In this case is extremely important to get the value of all the pointers just before stopping the downlink. The value of the CUR_PTR will be used to find out from where to dump in the next DTCP.		
		Execute Telecommand **ReportCatSelPktStore** *Command Parameter(s) :* **Store_Id** **DH003160** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Report Catalogues for Selected Packet Store	**DC169160** **STOREID**	

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Issue Date: 13/04/10

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		Note the value of the parameter below according to the store of interest. e.g CUR_TIM_XXX for Store_ID = XXX		
		Verify Telemetry CUR_TIM_000 XM365991		AND=ZAZ7P999
		Verify Telemetry CUR_TIM_001 XM366991		AND=ZAZ7P999
		Verify Telemetry CUR_TIM_002 XM367991		AND=ZAZ7T999
		Verify Telemetry CUR_TIM_003 XM368991		AND=ZAZ7T999
		Verify Telemetry CUR_TIM_128 XM374991		AND=ZAZ0G999
		Verify Telemetry CUR_TIM_129 XM375991		AND=ZAZ0J999
		Verify Telemetry CUR_TIM_130 XM376991		AND=ZAZ0J999
		Verify Telemetry CUR_TIM_131 XM377991		AND=ZAZ0M999
		Execute Telecommand StopPktStrDownLink Command Parameter(s) : ID DH036160 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Stop Packet Store Downlink	DC810160 Store_Id	
		Execute Telecommand ReportCatSelPktStore Command Parameter(s) : Store_Id DH003160 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : Report Catalogues for Selected Packet Store	DC169160 STOREID	
14		Verify that no download is ongoing		Next Step: END
14.1		Check that no downlink is ongoing		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry **DownloadCEL** **DELA3160**	**= 0 <dec>**	AND=ZAZAO999
		Verify Telemetry **DownloadOnVC2** **DELA1160**	**= 0 <dec>**	AND=ZAZAO999
		Verify Telemetry **DownloadOnVC3** **DELA2160**	**= 0 <dec>**	AND=ZAZAO999
		TC Seq. Name :HFD3037A (Report storage defin) *TimeTag Type: N* *Sub Schedule ID:* *Formal Parameter List :* Packet store ID Store_Id=	<dec>	
15		*Send TC (15,5) to report storage selection definition*		Next Step: 16
		When this request is received by the CDMS, the storage selection definition for the specified Packet Store is read and a report (15,6) is generated. **WARNING: Request to report definition for Critical Event Log will be rejected.**		

		Execute Telecommand
		                              ReportStorageSelDef
		
		Command Parameter(s) :
		                    Store_Id **DH003160**
		
		TC Control Flags :
		                              GBM IL DSE
		                              --Y -- ---
		Subsch. ID : 10
		Det. descr. : Report Storage Selection Definition
			DC160160
			
			Store_Id	

16		*Verify the reception of 3 TMs(15,6)*		Next Step: END
		Each TM(15,6) lists matching packets for up to eight consecutive APIDs. If there are no matching packets for any of these eight APIDs, the N1 field in that TM(15,6) will be set to 0, indicating that this TM(15,6) doesn't list any matching packets.		

		Verify Packet Reception
		Storage Selection Definition Report - Packet Store 0
		Packet Details:
		                              APID:
		                              Type:
		                              Subtype:
		                              PI1:
		                              PI2:
			StorageSel
			
			16
			15
			6	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry **Store-ID** DE050160	**= Store_Id**	(None)
		Verify Telemetry **Store-Type** DE051160	**Cyclic or Linear**	(None)
		Verify Telemetry **Storage_Sts** DE063160	**Enabled or Disabled**	(None)
		Verify Telemetry **Virtual-Chn** DE052160	**Dump on VC2 or VC3**	(None)
		Verify Telemetry Number of APID/Type criteria **N1** DE064160	**can be equal to** 0	(None)
		The following parameters are repeated N1 times		
		Verify Telemetry **APID** DE065160		(None)
		Verify Telemetry **Type** DE066160		(None)
		Verify Telemetry Number of Subtype criteria for a given APID/Type **N2** DE067160	**can be equal to** 0	(None)
		The following parameter is repeated N1xN2 times		
		Verify Telemetry **Sub-Type** DE068160		(None)

End of Procedure