

Enable or disable the on board monitoring for a parameter
File: H_FCP_DHS_3028.xls
Author: S. Manganelli



Procedure Summary

Objectives

This procedure describes the steps needed to enable or disable the monitoring of parameters globally or to enable or disable the monitoring of a specified subset of parameters.

Summary of Constraints

Default status of the ASW function "On board Monitoring":
"Started".

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

- Start Function TC(8,1,106);
- Report Function Status TC(8,5,106);
- Clear Monitoring List TC(12,4).

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

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

Output Command Sequences

HFD3028A
HFD3028B
HFD3028C
HFD3028D

Referenced Displays

ANDs	GRDs	SLDs
ZAZAI999		(None)
ZAZAQ999		

Configuration Control Information

Status : Version 6 - Unchanged
Last Checkin: 14/04/09

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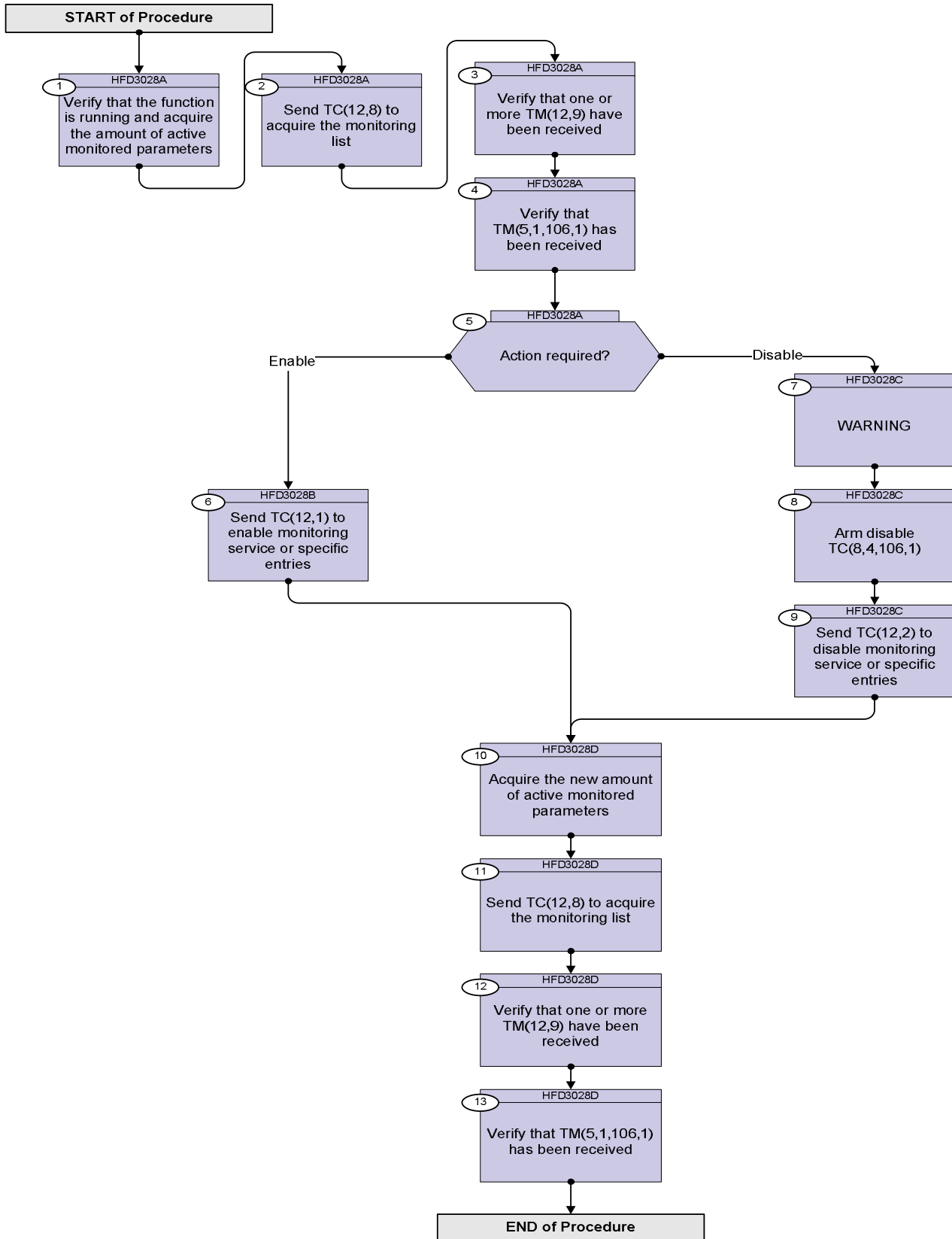


DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
12/11/07		1	Created	cmevi-hp	
10/06/08		2	TC flags / Seq type modification	S. Manganelli	
04/07/08	1	3	Dump of monitoring list introduced. TC flags updated.	cmevi-hp	
23/11/08	2	4	Update following industry inputs 16 oct 08	S. Manganelli	
22/03/09	2.2	5	Added comment about use of OPMD. No modification introduced by TAS-I input 3 march 08.	S. Manganelli	
14/04/09	2.3	6	Included comment about enabling or disabling the whole MOT service (MOT entry status unchanged) as per TAS comments to FOP 2.2	S. Manganelli	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
TC Seq. Name :HFD3028A (Acquire monit list)				
TimeTag Type: Sub Schedule ID: □				
1		Verify that the function is running and acquire the amount of active monitored parameters		Next Step: 2
		Verify Telemetry MonitSts DEH23170	= Running	AND=ZAZAI999
		Verify Telemetry AswNumMot DE871170		AND=ZAZAQ999
		Start OPMD task (monitoring model) and verify that it is updated by the procedure actions.		
2		Send TC(12,8) to acquire the monitoring list		Next Step: 3
		When the CDMS receives this request, it issues one or several reports with the current static contents of the Monitoring List (TM packet type (12,9)). When the dump of TM(12,9) has ended, an Event Report TM(5,1,106,1) indicating the number of reported TM(12,9) is issued.		
		Execute Telecommand ReportMonitList TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : Report current monitoring list, TC(12,8), no appl. data	DC20L170	
3		Verify that one or more TM(12,9) have been received		Next Step: 4
		Verify Packet Reception TM 12-9 Current Monitoring List Report Packet Details: APID: 16 Type: 12 Subtype: 9 PI1: PI2:	CurMonLstRpt	
		Verify Telemetry N_Repetition DE014170		(None)
		The following 12 parameters are repeated N times		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry Unique identifier for the datapool parameter ParameterId DE054170		(None)
		Verify Telemetry Unique Identifier of the MOT entry MonitorId DE055170		(None)
		Verify Telemetry ParamMonStatus DE056170	Enabled or Disabled	(None)
		Verify Telemetry The allowed monitoring intervals are values 1 (= 1/8 sec), 2 (= 1/4 sec), 4(= 1/2 sec), and any multiple of 8 (8=1 sec, 16=2 sec, 24=3 sec, etc.) MonitInterval DE057170	multiples of 1/8 sec	(None)
		Verify Telemetry The number of successive samples of the parameter, which must fail (or succeed) the check in order to establish a new checking status. RepNumber DE058170		(None)
		Verify Telemetry The value against which the specified Parameter shall be compared. Please note that this is the OUT OF RANGE value! CheckValue DE059170		(None)
		Verify Telemetry The «bit-masking» operation consist in «bitwise-AND» between Check-Mask and the value of the parameter to be monitored. CheckMask DE060170	bit-masking to be applied to the parameter to be monitored	(None)
		Verify Telemetry One of =, >, <, <>, >=, <= Please note that the expeted result of the expression is FALSE! CheckTypeId DE061170		(None)
		Verify Telemetry Event ID-1 is reporting the transition between an "In Range" to " Out of Range" status, its type is 2 and if declared and enabled in the EAT an onboard action will take place. Event1Id DE062170		(None)
		Verify Telemetry Event ID-2 is reporting a transition between an "Out of Range" to "In Range" status, its type is 1, ie for information only. Event2Id DE063170		(None)
		Verify Telemetry The identifier of the unit that is linked to the MOT entry LinkedUnitId DEZSH170		(None)
		Verify Telemetry The MOT entry is foreseen to be enabled when the Unit specified into the "Unit ID" field is according to the status specified into "Unit Status" field, otherwise the MOT entry is disabled. MonUnitStatus DEZU5170		(None)
4		Verify that TM(5,1,106,1) has been received		Next Step: 5

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Reception CdmuAsw Event 5-1-106-1 TM 12-9 Dump Ended Packet Details: APID: 16 Type: 5 Subtype: 1 PI1: 27137 PI2: 0	D_EvRp_033	
		Verify Packet Telemetry TM5xEventID DEZSJ170	= TM_12_9DmpEnd	(None)
		Verify Packet Telemetry Numbers of TM(12,9) issued to dump the complete MOT contents. NrOfTmPktIssued DE072170		(None)
5		Action required?		Next Step: Enable 6 Disable 7
TC Seq. Name :HFD3028B (Enable monitoring) TimeTag Type: Sub Schedule ID: <input type="checkbox"/>				
6		Send TC(12,1) to enable monitoring service or specific entries		Next Step: 10
		<u>WARNING: the following TC is of variable length and therefore does not allow the definition of a generic procedure.</u>		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<p>In the TC(12,1) it is necessary to set the following parameters:</p> <ul style="list-style-type: none"> - N: number of parameters for which monitoring is to be enabled; - Parameter-ID: unique identification of a datapool parameter; - Monitoring ID: unique identifier of a MOT entry, it associates a certain parameter with a specific Check Definition and with specific Event Packets. If applicable, the action which will be initiated in case of monitoring event is defined on-board by the Event/ Action Service. <p>When the CDMS receives this request :</p> <ul style="list-style-type: none"> - If N > 0 the specified parameters in the Monitoring List start being monitored, provided the Linked Unit is at its specified status. <p>Command DCT26170 with N = 0 enables the MOT service (different from the Monitoring function status), i.e. any MOT entry currently enabled will be taken into account.</p> <p>Note: the actual status of the MOT entries are not affected by this command, e.g. MOT entries which were disabled prior to the command being sent will remain disabled.</p>		
		WARNING: the following TCs are intended to be just examples.		
6.1		Enable all MOT entries		<input type="checkbox"/>
		<pre> Execute Telecommand EnabMonitOfParam_Templ Command Parameter(s) : N_Repetition DH041170 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : TEMPLATE Enable Monitoring of Parameter, TC(12,1) </pre>	DCT26170 0 <dec>	
6.2		Enable a subset of MOT entries		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch													
		Execute Telecommand <p style="text-align: center;">EnabMonitOfParam_Templ</p> <i>Command Parameter(s) :</i> <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">N_Repetition</td> <td>DH041170</td> <td style="text-align: right;">1 <dec> (Def)</td> </tr> <tr> <td style="text-align: right;">ParameterId</td> <td>DH042170</td> <td style="text-align: right;">Parameter_ID</td> </tr> <tr> <td style="text-align: right;">MonitorId</td> <td>DH043170</td> <td style="text-align: right;">Monitoring_ID</td> </tr> </table> <i>TC Control Flags :</i> <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">GBM IL DSE</td> <td></td> </tr> <tr> <td style="text-align: right;">--Y -- ---</td> <td></td> </tr> </table> <i>Subsch. ID : 10</i> <i>Det. descr. : TEMPLATE Enable Monitoring of Parameter,</i> <i>TC(12,1)</i> This Telecommand will not be included in the export	N_Repetition	DH041170	1 <dec> (Def)	ParameterId	DH042170	Parameter_ID	MonitorId	DH043170	Monitoring_ID	GBM IL DSE		--Y -- ---		DCT26170	
N_Repetition	DH041170	1 <dec> (Def)															
ParameterId	DH042170	Parameter_ID															
MonitorId	DH043170	Monitoring_ID															
GBM IL DSE																	
--Y -- ---																	
<i>TC Seq. Name :HFD3028C (Disable monitoring)</i> <i>TimeTag Type:</i> <i>Sub Schedule ID:</i> <input type="checkbox"/>																	
7		WARNING		Next Step: 8													
		Disable Monitoring of Parameters telecommand is used for deactivating the monitoring service globally or disabling the monitoring of parameters given in the telecommand. It is considered critical and therefore it needs to be armed before usage by Arm Disable Monitoring TC(8,4,106,1).															
8		Arm disable TC(8,4,106,1)		Next Step: 9													
		Execute Telecommand <p style="text-align: center;">ArmDisableMon</p> <i>TC Control Flags :</i> <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">GBM IL DSE</td> <td></td> </tr> <tr> <td style="text-align: right;">--Y -- ---</td> <td></td> </tr> </table> <i>Subsch. ID : 10</i> <i>Det. descr. : Arm Disable On Board Monitoring,</i> <i>TC(8,4,106,1)</i>	GBM IL DSE		--Y -- ---		DC54F170										
GBM IL DSE																	
--Y -- ---																	
9		Send TC(12,2) to disable monitoring service or specific entries		Next Step: 10													
		<u>WARNING: the following TC is of variable length and therefore does not allow the definition of a generic procedure.</u>															

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<p>In the TC(12,2) it is necessary to set the following parameters:</p> <ul style="list-style-type: none"> - N: number of parameters for which monitoring is to be disabled; - Parameter-ID: unique identification of a parameter, as also used for the Housekeeping Service; - Monitoring ID: associates a certain parameter with a specific Check Definition and with specific Event Packets. If applicable, the action which will be initiated in case of monitoring event is defined on-board by the Event/ Action Service. <p>When the CDMS receives this request :</p> <ul style="list-style-type: none"> - If $N > 0$ the monitoring of these parameters in the Monitoring List is stopped. <p>Command DCT27170 with $N = 0$ disables the MOT service, i.e. no MOT entries are taken into account even if their status is enabled.</p> <p>Note: the actual status of the MOT entries are not affected by this command, e.g. MOT entries which were enabled prior to the command being sent will remain enabled.</p>		
		WARNING: the following TCs are intended to be just examples.		
9.1		Disable all MOT entries		<input type="checkbox"/>
		It is strongly recommended not to disable the entire monitoring service.		
		<pre> Execute Telecommand DisMonitOfParam_Templ Command Parameter(s) : N_Repetition DH041170 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : TEMPLATE Disable Monitoring of Parameter, TC(12,2) This Telecommand will not be included in the export </pre>	DCT27170 0 <dec>	
9.2		disable a subset of MOT entries		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">DisMonitOfParam_Templ</p> Command Parameter(s) : N_Repetition DH041170 ParameterId DH042170 MonitorId DH043170 TC Control Flags : <p style="text-align: right;"> GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : TEMPLATE Disable Monitoring of Parameter, TC(12,2) This Telecommand will not be included in the export	DCT27170	
TC Seq. Name :HFD3028D (Acquire mon list (2)) TimeTag Type: Sub Schedule ID: <input type="checkbox"/>				
10		Acquire the new amount of active monitored parameters		Next Step: 11
		AswNumMot DE871170		AND=ZAZAQ999
11		Send TC(12,8) to acquire the monitoring list		Next Step: 12
		When the CDMS receives this request, it issues one or several reports with the current static contents of the Monitoring List (TM packet type (12,9)). When the dump of TM(12,9) has ended, an Event Report TM(5,1,106,1) indicating the number of reported TM(12,9) is issued.		
		Execute Telecommand <p style="text-align: right;">ReportMonitList</p> TC Control Flags : <p style="text-align: right;"> GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : Report current monitoring list, TC(12,8), no appl. data	DC20L170	
12		Verify that one or more TM(12,9) have been received		Next Step: 13

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Reception TM 12-9 Current Monitoring List Report Packet Details: APID: 16 Type: 12 Subtype: 9 PI1: PI2:	CurMonLstRpt	
		Verify Telemetry N_Repetition DE014170		(None)
		The following 12 parameters are repeated N times		
		Verify Telemetry ParameterId DE054170		(None)
		Verify Telemetry MonitorId DE055170		(None)
		Verify Telemetry ParamMonStatus DE056170		(None)
		Verify Telemetry MonitInterval DE057170		(None)
		Verify Telemetry RepNumber DE058170		(None)
		Verify Telemetry CheckValue DE059170		(None)
		Verify Telemetry CheckMask DE060170		(None)
		Verify Telemetry CheckTypeId DE061170		(None)
		Verify Telemetry Event1Id DE062170		(None)
		Verify Telemetry Event2Id DE063170		(None)
		Verify Telemetry LinkedUnitId DEZSH170		(None)
		Verify Telemetry MonUnitStatus DEZU5170		(None)
13		Verify that TM(5,1,106,1) has been received		Next Step: END
		Verify Packet Reception CdmuAsw Event 5-1-106-1 TM 12-9 Dump Ended Packet Details: APID: 16 Type: 5 Subtype: 1 PI1: 27137 PI2: 0	D_EvRp_033	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Telemetry TM5xEventID DEZSJ170	= TM_12_9DmpEnd	(None)
		Verify Packet Telemetry NrOfTmPktIssued DE072170		
End of Procedure				