

Set RM Alarm Temporisation Delays
File: H_CRP_AOC_D2TD.xls
Author: dsalt-hp



Procedure Summary

Objectives

All alarm signals processed by the RM are subject to temporisation filtering. The filter allows the filtered alarm to become active only if the input is active for more than the specified temporisation delay. The duration of the delay is programmable for all external alarms and the watchdog.

The most likely reason for modifying temporisation delays in flight may be the need to increase the filtering of ARAD alarm in order to avoid triggering due to increased sensor noise.

Temporisation delays must be specified directly in the binary format used for temporisation values by the RM. The algorithm for converting numbers to this format is specified in the box attached to the procedure.

USAGE:

The procedure may be applied in two situations:

1. Changing the value of temporisation delay for one of the ARAD alarms or the watchdog
2. Restoring the value of one of the temporisation registers after a bit flip. Apart from registers specifying alarm temporisation delays, the same data format is also used for registers specifying the activation delay and RM toggle delays. These registers have been included in the tables of register data below.

NOTES:

All RM registers are 32 bits wide. The storage of temporisation values requires only 16 bits. The most significant 16 bits of all temporisation registers are always set to 0.

Summary of Constraints

N/A

Spacecraft Configuration

Start of Procedure

N/A

End of Procedure

N/A

Reference File(s)

Input Command Sequences

Output Command Sequences

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HRAD2TD1
 HRAD2TD2
 HRAD2TD3
 HRAD2TD4
 HRAD2TD5
 HRAD2TD6
 HRAD2TD7
 HRAD2TD8
 HRAD2TD9
 HRAD2TDA
 HRAD2TDB
 HRAD2TDC
 HRAD2TDD
 HRAD2TDE
 HRAD2TDF
 HRAD2TDG
 HRAD2TDH
 HRAD2TDI

Referenced Displays

ANDs **GRDs** **SLDs**
 ZAAM3999
 ZAA07999

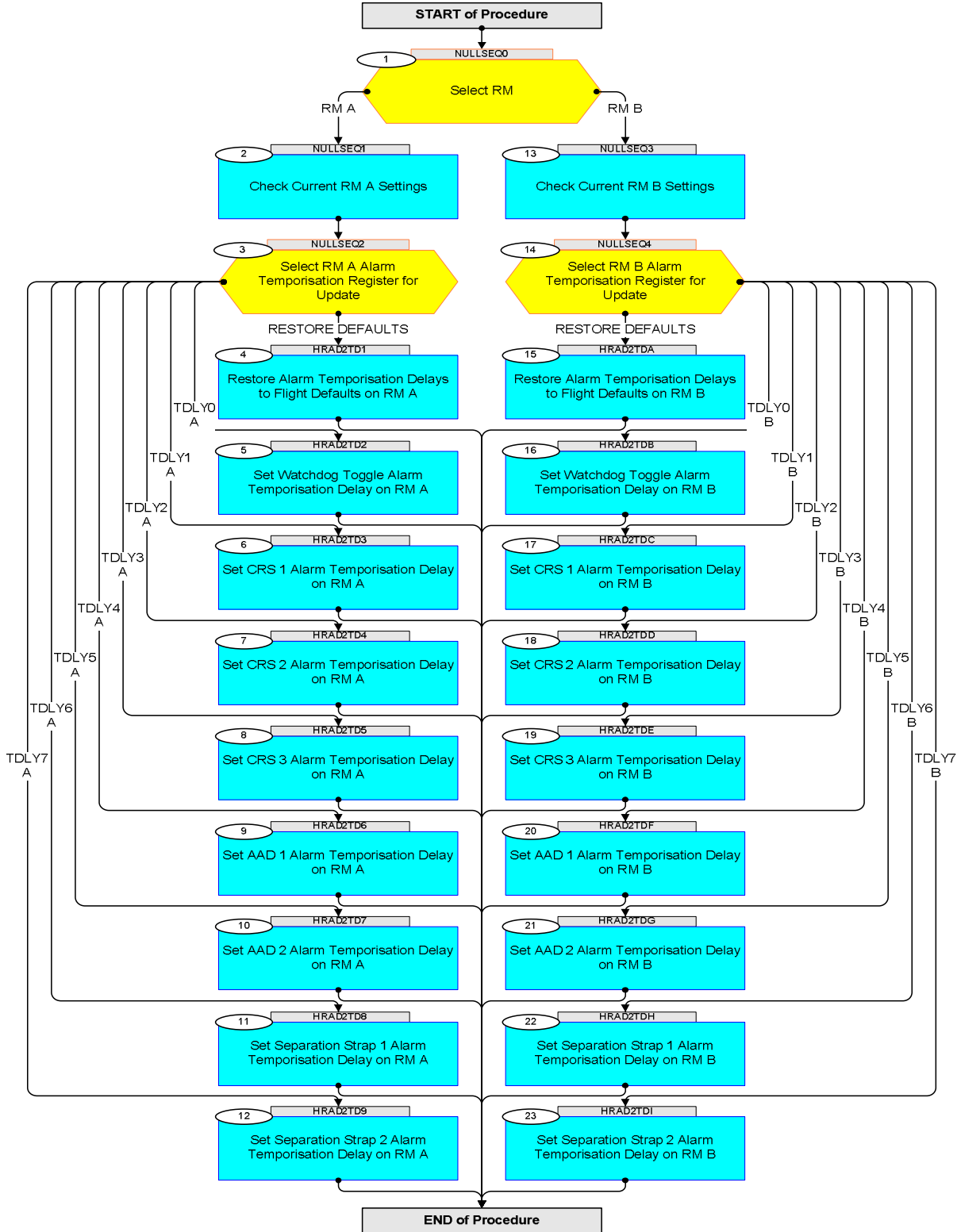
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
09/01/09		1	Created	dsalt-hp	
09/01/09	2	2	Redundant sequence references removed from end of procedure	dsalt-hp	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
<p><i>TC Seq. Name : NULLSEQ0 ()</i></p> <p><i>TimeTag Type: N</i> <i>Sub Schedule ID:</i></p> <p style="text-align: center;"><input type="checkbox"/></p>				
1		Select RM		Next Step: RM A 2 RM B 13
		<p>Select the reconfiguration module that needs change of alarm temporisation delay settings:</p> <p style="margin-left: 40px;">RM A -> GO TO STEP 2</p> <p style="margin-left: 40px;">RM B -> GO TO STEP 13</p>		
<p><i>TC Seq. Name : NULLSEQ1 ()</i></p> <p><i>TimeTag Type:</i> <i>Sub Schedule ID:</i></p> <p style="text-align: center;"><input type="checkbox"/></p>				
2		Check Current RM A Settings		Next Step: 3
		<p>This step verifies if the current temporisation delay settings are as expected. The temporisation delay settings can be read as part of the telemetry packet returned by the TC_GET_RM_STATUS command.</p>		
2.1		Uplink Sequence HFADRMR1		<input type="checkbox"/>
		Execute Sequence HFADRMR1 GetRmAstatusReport		
2.2		Check RM Alarm Enable/Disable Configuration		<input type="checkbox"/>
		Verify Telemetry <div style="display: flex; justify-content: space-between; width: 80%; margin-left: auto; margin-right: auto;"> RMH_TDLY0_MSB AEXU8109 <to be read> AND=ZAAM3999 </div>		
		Verify Telemetry <div style="display: flex; justify-content: space-between; width: 80%; margin-left: auto; margin-right: auto;"> RMH_TDLY0_LSB AEXU9109 <to be read> AND=ZAAM3999 </div>		
		Verify Telemetry <div style="display: flex; justify-content: space-between; width: 80%; margin-left: auto; margin-right: auto;"> RMH_TDLY0 AD004109 <to be read> AND=ZAAM3999 </div>		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMH_TDLY1_MSB AEXUA109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1_LSB AEXUB109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1 AD005109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2_MSB AEXUC109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2_LSB AEXUD109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2 AD006109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_MSB_Reserved AEXUE109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_LSB_Reserved AEXUF109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY3-Reserv AD007109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4_MSB AEXUG109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4_LSB AEXUH109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4 AD008109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_MSB AEXUJ109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_LSB AEXUK109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5 AD009109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_MSB AEXUL109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_LSB AEXUM109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6 AD010109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_MSB AEXUN109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_LSB AEXUP109	<to be read>	AND=ZAAM3999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMH_TDLY7 AD011109	<to be read>	AND=ZAAM3999
<p><i>TC Seq. Name : NULLSEQ2 ()</i></p> <p><i>TimeTag Type:</i> <i>Sub Schedule ID:</i></p> <p>□</p>				
3		Select RM A Alarm Temporisation Register for Update		Next Step: RESTORE DEFAULTS 4 TDLY0 A 5 TDLY1 A 6 TDLY2 A 7 TDLY3 A 8 TDLY4 A 9 TDLY5 A 10 TDLY6
				A 11 TDLY7 A 12
		<p><i>Options are to restore the default temporisation delay settings for flight or to set a user-defined temporisation delay for the individual alarms:</i></p> <p><i>Restore flight defaults -> GO TO STEP 4</i> <i>Temporisation Delay 0 (WD Toggle)</i></p> <p><i>Temporisation Delay 1 (CRS1) -> GO TO STEP 5</i> <i>Temporisation Delay 2 (CRS2) -> GO TO STEP 6</i> <i>Temporisation Delay 3 (CRS3) -> GO TO STEP 7</i> <i>Temporisation Delay 4 (AAD1) -> GO TO STEP 8</i> <i>Temporisation Delay 5 (AAD2) -> GO TO STEP 9</i> <i>Temporisation Delay 6 (Sep. Strap 1) -> GO TO STEP 10</i> <i>Temporisation Delay 7 (Sep. Strap 2) -> GO TO STEP 11</i> <i>Temporisation Delay 7 (Sep. Strap 2) -> GO TO STEP 12</i></p>		
<p><i>TC Seq. Name : HRAD2TD1 (SetRmAtdlyFlightDef)</i></p> <p><i>TimeTag Type: N</i> <i>Sub Schedule ID:</i></p> <p>□</p>				

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
4		Restore Alarm Temporisation Delays to Flight Defaults on RM A		Next Step: END
		<i>This step restores the default temporisation delay settings for flight. Default configuration is as highlighted in the table attached at the back of this procedure.</i>		
4.1		Uplink Sequence HRAD2TD1		<input type="checkbox"/>
4.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Disable	DCM22170	
		TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	GBM IL DSE --Y -- ---	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= DISABLED	AND=ZAA07999
4.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>
		Execute Telecommand Load Memory	AC062109	
		Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109	00C0 <hex> 5900 <hex> 4 <dec> (Def) 00009C06 <hex> B980 <hex>	
		TC Control Flags : Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	GBM IL DSE --Y -- ---	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <div style="text-align: right;">Load Memory</div> Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109	
		Execute Telecommand <div style="text-align: right;">Load Memory</div> Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109	
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <div style="text-align: right;">Load Memory</div> Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109 00C0 <hex> 591C <hex> 4 <dec> (Def) 0000B70E <hex> E294 <hex>	
4.1.3		Verify Update via RM A Status Report		□
		Execute Telecommand <div style="text-align: right;">Get RM-A status</div> Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109 Enable 86 Enable 86	
		Verify Packet Reception <div style="text-align: center;">TM 8-6 for RM Status parametrized</div> Packet Details: <div style="text-align: right;">APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1</div>	A86_RMStatus	
		Verify Telemetry <div style="text-align: right;">RMH_TDLY0_MSB AEXU8109</div>	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry <div style="text-align: right;">RMH_TDLY0_LSB AEXU9109</div>	= 6 <dec>	AND=ZAAM3999
		Verify Telemetry <div style="text-align: right;">RMH_TDLY0 AD004109</div>	998.5 ms	AND=ZAAM3999
		Verify Telemetry <div style="text-align: right;">RMH_TDLY1_MSB AEXUA109</div>	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry <div style="text-align: right;">RMH_TDLY1_LSB AEXUB109</div>	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry <div style="text-align: right;">RMH_TDLY1 AD005109</div>	249.7 ms	AND=ZAAM3999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMH_TDLY2_MSB AEXUC109	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2_LSB AEXUD109	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2 AD006109	249.7 ms	AND=ZAAM3999
		Verify Telemetry RMH_MSB_Reserved AEXUE109	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_LSB_Reserved AEXUF109	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY3-Reserv AD007109	249.7 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4_MSB AEXUG109	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4_LSB AEXUH109	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4 AD008109	249.7 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_MSB AEXUJ109	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_LSB AEXUK109	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5 AD009109	249.7 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_MSB AEXUL109	= 146 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_LSB AEXUM109	= 11 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6 AD010109	29900.9 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_MSB AEXUN109	= 183 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_LSB AEXUP109	= 14 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7 AD011109	299827.3 ms	AND=ZAAM3999
4.1.4		Enable RM A		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Ext_ACC_RM_A_Enable	DCM21170	
		TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	GBM IL DSE --Y -- ---	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999
<p>TC Seq. Name : HRAD2TD2 (SetRmATdly0WdTg)</p> <p>TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= Memory Checksum MemCrc=</p> <p style="text-align: right;"><dec> <dec></p>				
5		Set Watchdog Toggle Alarm Temporisation Delay on RM A		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the watchdog toggle alarm.		
5.1		Uplink Sequence HRAD2TD2		<input type="checkbox"/>
5.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Disable	DCM22170	
		TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	GBM IL DSE --Y -- ---	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= DISABLED	AND=ZAA07999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch																					
5.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>																					
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																							
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																							
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00C0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5900 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td style="width: 30%;">GBM IL DSE</td> <td style="width: 40%;"></td> </tr> <tr> <td></td> <td>--Y -- --</td> <td></td> </tr> </table> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00C0 <hex>	Start Address	AH6M1109	5900 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc		GBM IL DSE			--Y -- --		AC062109	
Memory ID	AH6M0109	00C0 <hex>																							
Start Address	AH6M1109	5900 <hex>																							
Length SAU	AH6M2109	4 <dec> (Def)																							
Memory Data 32	AH6M6109	MemData																							
Memory Checksum	AH6M7109	MemCrc																							
	GBM IL DSE																								
	--Y -- --																								
5.1.3		Verify Update via RM A Status Report		<input type="checkbox"/>																					

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">Get RM-A status</p> Command Parameter(s) : RMStat DF86Cmd AH841001 Enable 86 RMStat DD86Cmd AH842001 Enable 86 TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109	
		Verify Packet Reception <p style="text-align: center;">TM 8-6 for RM Status parametrized</p> Packet Details: <p style="text-align: right;">APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1</p>	A86_RMStatus	
		Verify Telemetry <p style="text-align: center;">RMH_TDLY0_MSB AEXU8109</p>	<user defined setting>	AND=ZAAM3999
		Verify Telemetry <p style="text-align: center;">RMH_TDLY0_LSB AEXU9109</p>	<user defined setting>	AND=ZAAM3999
		Verify Telemetry <p style="text-align: center;">RMH_TDLY0 AD004109</p>	<user defined setting>	AND=ZAAM3999
		Verify Telemetry <p style="text-align: center;">RMH_TDLY0 AD004109</p>	<user defined setting>	AND=ZAAM3999
5.1.4		Enable RM A		☐
		Execute Telecommand <p style="text-align: right;">Ext_ACC_RM_A_Enable</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	DCM21170	
		Verify Telemetry <p style="text-align: center;">RMA_fromTTR-RMA AEE91050</p>	= ENABLED	AND=ZAA07999
		Verify Telemetry <p style="text-align: center;">RMA_fromTTR-RMB AEE92050</p>	= ENABLED	AND=ZAA07999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TD3 (SetRmATdly1Crsl) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
6		Set CRS 1 Alarm Temporisation Delay on RM A		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the CRS 1 alarm.		
6.1		Uplink Sequence HRAD2TD3		<input type="checkbox"/>
6.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= DISABLED	AND=ZAA07999
6.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00C0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5904 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00C0 <hex>	Start Address	AH6M1109	5904 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00C0 <hex>																	
Start Address	AH6M1109	5904 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
6.1.3		Verify Update via RM A Status Report		□															

Set RM Alarm Temporisation Delays
 File: H_CRP_AOC_D2TD.xls
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-A status Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109 Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY1_MSB AEXUA109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1_LSB AEXUB109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1 AD005109	<user defined setting>	AND=ZAAM3999
6.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TD4 (SetRmATdly2Crs2) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
7		Set CRS 2 Alarm Temporisation Delay on RM A		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the CRS 2 alarm.		
7.1		Uplink Sequence HRAD2TD4		<input type="checkbox"/>
7.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= DISABLED	AND=ZAA07999
7.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00C0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5908 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00C0 <hex>	Start Address	AH6M1109	5908 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00C0 <hex>																	
Start Address	AH6M1109	5908 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
7.1.3		Verify Update via RM A Status Report		□															

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-A status Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status GBM IL DSE --Y -- ---	ACZZ4109 Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY2_MSB AEXUC109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2_LSB AEXUD109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2 AD006109	<user defined setting>	AND=ZAAM3999
7.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific GBM IL DSE --Y -- ---	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TD5 (SetRmATdly3Crs3) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
8		Set CRS 3 Alarm Temporisation Delay on RM A		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the CRS 3 alarm.		
8.1		Uplink Sequence HRAD2TD5		<input type="checkbox"/>
8.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= DISABLED	AND=ZAA07999
8.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00C0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>590C <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00C0 <hex>	Start Address	AH6M1109	590C <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00C0 <hex>																	
Start Address	AH6M1109	590C <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
8.1.3		Verify Update via RM A Status Report		□															

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-A status Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status GBM IL DSE --Y -- ---	ACZZ4109 Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_MSB_Reserved AEXUE109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_LSB_Reserved AEXUF109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY3-Reserv AD007109	<user defined setting>	AND=ZAAM3999
8.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific GBM IL DSE --Y -- ---	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TD6 (SetRmATdly4Aad1) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
9		Set AAD 1 Alarm Temporisation Delay on RM A		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the AAD 1 alarm.		
9.1		Uplink Sequence HRAD2TD6		<input type="checkbox"/>
9.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= DISABLED	AND=ZAA07999
9.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00C0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5910 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00C0 <hex>	Start Address	AH6M1109	5910 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00C0 <hex>																	
Start Address	AH6M1109	5910 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
9.1.3		Verify Update via RM A Status Report		□															

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">Get RM-A status</p> Command Parameter(s) : RMStat DF86Cmd AH841001 Enable 86 RMStat DD86Cmd AH842001 Enable 86 TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109	
		Verify Packet Reception <p style="text-align: center;">TM 8-6 for RM Status parametrized</p> Packet Details: <p style="text-align: right;">APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1</p>	A86_RMStatus	
		Verify Telemetry <p style="text-align: center;">RMH_TDLY4_MSB AEXUG109</p>	<user defined setting>	AND=ZAAM3999
		Verify Telemetry <p style="text-align: center;">RMH_TDLY4_LSB AEXUH109</p>	<user defined setting>	AND=ZAAM3999
		Verify Telemetry <p style="text-align: center;">RMH_TDLY4 AD008109</p>	<user defined setting>	AND=ZAAM3999
9.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: right;">Ext_ACC_RM_A_Enable</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	DCM21170	
		Verify Telemetry <p style="text-align: center;">RMA_fromTTR-RMA AEE91050</p>	= ENABLED	AND=ZAA07999
		Verify Telemetry <p style="text-align: center;">RMA_fromTTR-RMB AEE92050</p>	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TD7 (SetRmATdly5Aad2) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
10		Set AAD 2 Alarm Temporisation Delay on RM A		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the AAD 2 alarm.		
10.1		Uplink Sequence HRAD2TD7		<input type="checkbox"/>
10.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= DISABLED	AND=ZAA07999
10.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00C0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5914 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00C0 <hex>	Start Address	AH6M1109	5914 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00C0 <hex>																	
Start Address	AH6M1109	5914 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
10.1.3		Verify Update via RM A Status Report		□															

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-A status Command Parameter(s) : RMStat DF86Cmd AH841001 Enable 86 RMStat DD86Cmd AH842001 Enable 86 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status	ACZZ4109	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY5_MSB AEXUJ109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_LSB AEXUK109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5 AD009109	<user defined setting>	AND=ZAAM3999
10.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TD8 (SetRmATdly6Sep1) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
11		Set Separation Strap 1 Alarm Temporisation Delay on RM A		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the separation strap 1 alarm.		
11.1		Uplink Sequence HRAD2TD8		<input type="checkbox"/>
11.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM A Disable - Mission Specific	DCM22170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050 = DISABLED		AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050 = DISABLED		AND=ZAA07999
11.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00C0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5918 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00C0 <hex>	Start Address	AH6M1109	5918 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00C0 <hex>																	
Start Address	AH6M1109	5918 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
11.1.3		Verify Update via RM A Status Report		□															

Set RM Alarm Temporisation Delays
 File: H_CRP_AOC_D2TD.xls
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-A status Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status GBM IL DSE --Y -- ---	ACZZ4109 Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY6_MSB AEXUL109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_LSB AEXUM109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6 AD010109	<user defined setting>	AND=ZAAM3999
11.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific GBM IL DSE --Y -- ---	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<i>TC Seq. Name : HRAD2TD9 (SetRmATdly7Sep2)</i> <i>TimeTag Type: N</i> <i>Sub Schedule ID:</i> <i>Formal Parameter List :</i> Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
12		Set Separation Strap 2 Alarm Temporisation Delay on RM A		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the separation strap 2 alarm.		
12.1		Uplink Sequence HRAD2TD9		<input type="checkbox"/>
12.1.1		Disable RM A		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: center;">Ext_ACC_RM_A_Disable</p> <i>TC Control Flags :</i> <p style="text-align: center;">GBM IL DSE --Y -- --</p> <i>Subsch. ID : 10</i> <i>Det. descr. : External ACC RM A Disable - Mission Specific</i>	DCM22170	
		Verify Telemetry <p style="text-align: center;">RMA_fromTTR-RMA AEE91050</p> <p style="text-align: center;">= DISABLED</p>		AND=ZAA07999
		Verify Telemetry <p style="text-align: center;">RMA_fromTTR-RMB AEE92050</p> <p style="text-align: center;">= DISABLED</p>		AND=ZAA07999
12.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00C0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>591C <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00C0 <hex>	Start Address	AH6M1109	591C <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00C0 <hex>																	
Start Address	AH6M1109	591C <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
12.1.3		Verify Update via RM A Status Report		□															

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-A status Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-A status GBM IL DSE --Y -- ---	ACZZ4109 Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY7_MSB AEXUN109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_LSB AEXUP109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7 AD011109	<user defined setting>	AND=ZAAM3999
12.1.4		Enable RM A		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_A_Enable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM A Enable - Mission Specific GBM IL DSE --Y -- ---	DCM21170	
		Verify Telemetry RMA_fromTTR-RMA AEE91050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMA_fromTTR-RMB AEE92050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : NULLSEQ3 () TimeTag Type: Sub Schedule ID: <input type="checkbox"/>				
13		Check Current RM B Settings		Next Step: 14
		<i>This step verifies if the current temporisation delay settings are as expected. The temporisation delay settings can be read as part of the telemetry packet returned by the TC_GET_RM_STATUS command.</i>		
13.1		Uplink Sequence HFADRM2		<input type="checkbox"/>
		Execute Sequence HFADRM2 GetRmBstatusReport		
13.2		Check RM Alarm Enable/Disable Configuration		<input type="checkbox"/>
		Verify Telemetry RMH_TDLY0_MSB AEXU8109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY0_LSB AEXU9109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY0 AD004109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1_MSB AEXUA109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1_LSB AEXUB109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1 AD005109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2_MSB AEXUC109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2_LSB AEXUD109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2 AD006109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_MSB_Reserved AEXUE109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_LSB_Reserved AEXUF109	<to be read>	AND=ZAAM3999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMH_TDLY3-Reserv AD007109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4_MSB AEXUG109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4_LSB AEXUH109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4 AD008109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_MSB AEXUJ109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_LSB AEXUK109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5 AD009109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_MSB AEXUL109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_LSB AEXUM109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6 AD010109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_MSB AEXUN109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_LSB AEXUP109	<to be read>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7 AD011109	<to be read>	AND=ZAAM3999

TC Seq. Name : NULLSEQ4 ()

TimeTag Type:
 Sub Schedule ID:

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
14		Select RM B Alarm Temporisation Register for Update		Next Step: TDLY2 B 18 TDLY3 B 19 RESTORE DEFAULTS 15 TDLY0 B 16 TDLY1 B 17 TDLY4 B 20 TDLY5 B 21 TDLY6
				B 22 TDLY7 B 23
		Options are to restore the default temporisation delay settings for flight or to set a user-defined temporisation delay for the individual alarms: Restore flight defaults -> GO TO STEP 15 Temporisation Delay 0 (WD Toggle) -> GO TO STEP 16 Temporisation Delay 1 (CRS1) -> GO TO STEP 17 Temporisation Delay 2 (CRS2) -> GO TO STEP 18 Temporisation Delay 3 (CRS3) -> GO TO STEP 19 Temporisation Delay 4 (AAD1) -> GO TO STEP 20 Temporisation Delay 5 (AAD2) -> GO TO STEP 21 Temporisation Delay 6 (Sep. Strap 1) -> GO TO STEP 22 Temporisation Delay 7 (Sep. Strap 2) -> GO TO STEP 23		
TC Seq. Name :HRAD2TDA (SetRmBtdlyFlightDef) TimeTag Type: N Sub Schedule ID: □				
15		Restore Alarm Temporisation Delays to Flight Defaults on RM B		Next Step: END
		This step restores the default temporisation delay settings for flight. Default configuration is as highlighted in the table attached at the back of this procedure.		

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
15.1		Uplink Sequence HRAD2TDA		<input type="checkbox"/>
15.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= DISABLED	AND=ZAA07999
15.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>
		Execute Telecommand Load Memory Command Parameter(s) : Memory ID AH6M0109 00F0 <hex> Start Address AH6M1109 5900 <hex> Length SAU AH6M2109 4 <dec> (Def) Memory Data 32 AH6M6109 00009C06 <hex> Memory Checksum AH6M7109 B980 <hex> TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109	
		Execute Telecommand Load Memory Command Parameter(s) : Memory ID AH6M0109 00F0 <hex> Start Address AH6M1109 5904 <hex> Length SAU AH6M2109 4 <dec> (Def) Memory Data 32 AH6M6109 00009C04 <hex> Memory Checksum AH6M7109 99C2 <hex> TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109	

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <div style="text-align: right;">Load Memory</div> Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109 00F0 <hex> 5908 <hex> 4 <dec> (Def) 00009C04 <hex> 99C2 <hex>	
		Execute Telecommand <div style="text-align: right;">Load Memory</div> Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109 00F0 <hex> 590C <hex> 4 <dec> (Def) 00009C04 <hex> 99C2 <hex>	
		Execute Telecommand <div style="text-align: right;">Load Memory</div> Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109 00F0 <hex> 5910 <hex> 4 <dec> (Def) 00009C04 <hex> 99C2 <hex>	

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <div style="text-align: right;">Load Memory</div> Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109 00F0 <hex> 5914 <hex> 4 <dec> (Def) 00009C04 <hex> 99C2 <hex>	
		Execute Telecommand <div style="text-align: right;">Load Memory</div> Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109 00F0 <hex> 5918 <hex> 4 <dec> (Def) 0000920B <hex> 4B22 <hex>	
		Execute Telecommand <div style="text-align: right;">Load Memory</div> Command Parameter(s) : Memory ID AH6M0109 Start Address AH6M1109 Length SAU AH6M2109 Memory Data 32 AH6M6109 Memory Checksum AH6M7109 TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses	AC062109 00F0 <hex> 591C <hex> 4 <dec> (Def) 0000B70E <hex> E294 <hex>	
15.1.3		Verify Update via RM B Status Report		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-B status Command Parameter(s) : RMStat DF86Cmd AH841001 Enable 86 RMStat DD86Cmd AH842001 Enable 86 TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY0_MSB AEXU8109	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY0_LSB AEXU9109	= 6 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY0 AD004109	998.5 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1_MSB AEXUA109	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1_LSB AEXUB109	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1 AD005109	249.7 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2_MSB AEXUC109	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2_LSB AEXUD109	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY2 AD006109	249.7 ms	AND=ZAAM3999
		Verify Telemetry RMH_MSB_Reserved AEXUE109	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_LSB_Reserved AEXUF109	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY3-Reserv AD007109	249.7 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4_MSB AEXUG109	= 156 <dec>	AND=ZAAM3999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry RMH_TDLY4_LSB AEXUH109	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4 AD008109	249.7 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_MSB AEXUJ109	= 156 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_LSB AEXUK109	= 4 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5 AD009109	249.7 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_MSB AEXUL109	= 146 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_LSB AEXUM109	= 11 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6 AD010109	29900.9 ms	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_MSB AEXUN109	= 183 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_LSB AEXUP109	= 14 <dec>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7 AD011109	299827.3 ms	AND=ZAAM3999
15.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Enable TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050		AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TDB (SetRmBTdly0WdTg) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
16		Set Watchdog Toggle Alarm Temporisation Delay on RM B		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the watchdog toggle alarm.		
16.1		Uplink Sequence HRAD2TDB		<input type="checkbox"/>
16.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050 = DISABLED		AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050 = DISABLED		AND=ZAA07999
16.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00F0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5900 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00F0 <hex>	Start Address	AH6M1109	5900 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00F0 <hex>																	
Start Address	AH6M1109	5900 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
16.1.3		Verify Update via RM B Status Report		□															

Set RM Alarm Temporisation Delays
 File: H_CRP_AOC_D2TD.xls
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-B status Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109 Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY0_MSB AEXU8109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY0_LSB AEXU9109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY0 AD004109	<user defined setting>	AND=ZAAM3999
16.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Enable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
 File: H_CRP_AOC_D2TD.xls
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TDC (SetRmBTdly1Crsl) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
17		Set CRS 1 Alarm Temporisation Delay on RM B		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the CRS 1 alarm.		
17.1		Uplink Sequence HRAD2TDC		<input type="checkbox"/>
17.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050 = DISABLED		AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050 = DISABLED		AND=ZAA07999
17.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00F0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5904 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00F0 <hex>	Start Address	AH6M1109	5904 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00F0 <hex>																	
Start Address	AH6M1109	5904 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
17.1.3		Verify Update via RM B Status Report		□															

Set RM Alarm Temporisation Delays
 File: H_CRP_AOC_D2TD.xls
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-B status Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status GBM IL DSE --Y -- ---	ACZZ5109 Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY1_MSB AEXUA109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1_LSB AEXUB109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY1 AD005109	<user defined setting>	AND=ZAAM3999
17.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Enable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific GBM IL DSE --Y -- ---	DCM24170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
 File: H_CRP_AOC_D2TD.xls
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TDD (SetRmBTdly2Crs2) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
18		Set CRS 2 Alarm Temporisation Delay on RM B		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the CRS 2 alarm.		
18.1		Uplink Sequence HRAD2TDD		<input type="checkbox"/>
18.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050 = DISABLED		AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050 = DISABLED		AND=ZAA07999
18.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00F0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5908 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00F0 <hex>	Start Address	AH6M1109	5908 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00F0 <hex>																	
Start Address	AH6M1109	5908 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
18.1.3		Verify Update via RM B Status Report		□															

Set RM Alarm Temporisation Delays
 File: H_CRP_AOC_D2TD.xls
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">Get RM-B status</p> Command Parameter(s) : RMStat DF86Cmd AH841001 Enable 86 RMStat DD86Cmd AH842001 Enable 86 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
		Verify Packet Reception <p style="text-align: center;">TM 8-6 for RM Status parametrized</p> Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry <p style="text-align: center;">RMH_TDLY2_MSB AEXUC109</p>	<user defined setting>	AND=ZAAM3999
		Verify Telemetry <p style="text-align: center;">RMH_TDLY2_LSB AEXUD109</p>	<user defined setting>	AND=ZAAM3999
		Verify Telemetry <p style="text-align: center;">RMH_TDLY2 AD006109</p>	<user defined setting>	AND=ZAAM3999
18.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: right;">Ext_ACC_RM_B_Enable</p> TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry <p style="text-align: center;">RMB_fromTTR-RMA AEE93050</p>	= ENABLED	AND=ZAA07999
		Verify Telemetry <p style="text-align: center;">RMB_fromTTR-RMB AEE94050</p>	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
 File: H_CRP_AOC_D2TD.xls
 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TDE (SetRmBTdly3Crs3) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
19		Set CRS 3 Alarm Temporisation Delay on RM B		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the CRS 3 alarm.		
19.1		Uplink Sequence HRAD2TDE		<input type="checkbox"/>
19.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050		AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= DISABLED	AND=ZAA07999
19.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00F0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>590C <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00F0 <hex>	Start Address	AH6M1109	590C <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00F0 <hex>																	
Start Address	AH6M1109	590C <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
19.1.3		Verify Update via RM B Status Report		□															

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-B status Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109 Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_MSB_Reserved AEXUE109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_LSB_Reserved AEXUF109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY3-Reserv AD007109	<user defined setting>	AND=ZAAM3999
19.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Enable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TDF (SetRmBTdly4Aad1) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
20		Set AAD 1 Alarm Temporisation Delay on RM B		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the AAD 1 alarm.		
20.1		Uplink Sequence HRAD2TDF		<input type="checkbox"/>
20.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050		AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= DISABLED	AND=ZAA07999
20.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00F0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5910 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00F0 <hex>	Start Address	AH6M1109	5910 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00F0 <hex>																	
Start Address	AH6M1109	5910 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
20.1.3		Verify Update via RM B Status Report		□															

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-B status Command Parameter(s) : RMStat DF86Cmd AH841001 RMStat DD86Cmd AH842001 TC Control Flags : Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status GBM IL DSE --Y -- ---	ACZZ5109 Enable 86 Enable 86	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY4_MSB AEXUG109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4_LSB AEXUH109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY4 AD008109	<user defined setting>	AND=ZAAM3999
20.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Enable TC Control Flags : Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific GBM IL DSE --Y -- ---	DCM24170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TDG (SetRmBTdly5Aad2) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
21		Set AAD 2 Alarm Temporisation Delay on RM B		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the AAD 2 alarm.		
21.1		Uplink Sequence HRAD2TDG		<input type="checkbox"/>
21.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050 = DISABLED		AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050 = DISABLED		AND=ZAA07999
21.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00F0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5914 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00F0 <hex>	Start Address	AH6M1109	5914 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00F0 <hex>																	
Start Address	AH6M1109	5914 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
21.1.3		Verify Update via RM B Status Report		□															

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-B status Command Parameter(s) : RMStat DF86Cmd AH841001 Enable 86 RMStat DD86Cmd AH842001 Enable 86 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY5_MSB AEXUJ109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5_LSB AEXUK109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY5 AD009109	<user defined setting>	AND=ZAAM3999
21.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Enable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TDH (SetRmBTdly6Sep1) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
22		Set Separation Strap 1 Alarm Temporisation Delay on RM B		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the separation strap 1 alarm.		
22.1		Uplink Sequence HRAD2TDH		<input type="checkbox"/>
22.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= DISABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= DISABLED	AND=ZAA07999
22.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00F0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>5918 <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00F0 <hex>	Start Address	AH6M1109	5918 <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00F0 <hex>																	
Start Address	AH6M1109	5918 <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
22.1.3		Verify Update via RM B Status Report		□															

Set RM Alarm Temporisation Delays
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 Author: dsalt-hp



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-B status Command Parameter(s) : RMStat DF86Cmd AH841001 Enable 86 RMStat DD86Cmd AH842001 Enable 86 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY6_MSB AEXUL109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6_LSB AEXUM109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY6 AD010109	<user defined setting>	AND=ZAAM3999
22.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Enable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAA07999

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
TC Seq. Name : HRAD2TDI (SetRmBTdly7Sep2) TimeTag Type: N Sub Schedule ID: Formal Parameter List : Memory Data 32 MemData= <dec> Memory Checksum MemCrc= <dec>				
23		Set Separation Strap 2 Alarm Temporisation Delay on RM B		Next Step: END
		This step allows the user to set a user-defined temporisation delay for the separation strap 2 alarm.		
23.1		Uplink Sequence HRAD2TDI		<input type="checkbox"/>
23.1.1		Disable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Disable TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : External ACC RM B Disable - Mission Specific	DCM25170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050 = DISABLED		AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050 = DISABLED		AND=ZAA07999
23.1.2		Load RM Alarm Temporisation Delay Settings		<input type="checkbox"/>

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch															
		<p>When loading this command sequence on the Manual Stack, it will ask you to enter values for the formal parameters inside the sequence. The formal parameters are:</p> <ul style="list-style-type: none"> - MemData = Alarm temporisation delay in the timing format prescribed at the back of this procedure. Storage of timing data uses two integer numbers: V, in the range 0 .. 255 and exponent E, in the range 0 .. 15. Time is then equal to $(V * 2^E + 1) * 0.1$ msec. For timing data stored in registers, the datastring to be loaded into the 32-bit register can be obtained as follows: register content = '0000' & V [hex] & E [hex], with V and E expressed as 1 byte hex strings. 																	
		<ul style="list-style-type: none"> - MemCrc = CRC-CCITT (0xFFFF) checksum calculated over the entire datastring described above. Do not forget the leading four zeros (!). To verify your own checksum calculation you could use the following webpage: http://www.lammertbies.nl/comm/info/crc-calculation.html?crc=0000b70e&method=hex 																	
		<p>Execute Telecommand</p> <p style="text-align: right;">Load Memory</p> <p>Command Parameter(s) :</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Memory ID</td> <td style="width: 30%;">AH6M0109</td> <td style="width: 40%;">00F0 <hex></td> </tr> <tr> <td>Start Address</td> <td>AH6M1109</td> <td>591C <hex></td> </tr> <tr> <td>Length SAU</td> <td>AH6M2109</td> <td>4 <dec> (Def)</td> </tr> <tr> <td>Memory Data 32</td> <td>AH6M6109</td> <td>MemData</td> </tr> <tr> <td>Memory Checksum</td> <td>AH6M7109</td> <td>MemCrc</td> </tr> </table> <p>TC Control Flags :</p> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <p>Subsch. ID : 20 Det. descr. : TC(6,2) Load Memory Using Absolute Addresses</p>	Memory ID	AH6M0109	00F0 <hex>	Start Address	AH6M1109	591C <hex>	Length SAU	AH6M2109	4 <dec> (Def)	Memory Data 32	AH6M6109	MemData	Memory Checksum	AH6M7109	MemCrc	AC062109	
Memory ID	AH6M0109	00F0 <hex>																	
Start Address	AH6M1109	591C <hex>																	
Length SAU	AH6M2109	4 <dec> (Def)																	
Memory Data 32	AH6M6109	MemData																	
Memory Checksum	AH6M7109	MemCrc																	
23.1.3		Verify Update via RM B Status Report		□															

Set RM Alarm Temporisation Delays
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand Get RM-B status Command Parameter(s) : RMStat DF86Cmd AH841001 Enable 86 RMStat DD86Cmd AH842001 Enable 86 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Get RM-B status	ACZZ5109	
		Verify Packet Reception TM 8-6 for RM Status parametrized Packet Details: APID: 512 Type: 8 Subtype: 6 PI1: 41600 PI2: 1	A86_RMStatus	
		Verify Telemetry RMH_TDLY7_MSB AEXUN109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7_LSB AEXUP109	<user defined setting>	AND=ZAAM3999
		Verify Telemetry RMH_TDLY7 AD011109	<user defined setting>	AND=ZAAM3999
23.1.4		Enable RM B		<input type="checkbox"/>
		Execute Telecommand Ext_ACC_RM_B_Enable TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 10 Det. descr. : External ACC RM B Enable - Mission Specific	DCM24170	
		Verify Telemetry RMB_fromTTR-RMA AEE93050	= ENABLED	AND=ZAA07999
		Verify Telemetry RMB_fromTTR-RMB AEE94050	= ENABLED	AND=ZAA07999
End of Procedure				

Set RM Alarm Temporisation Delays
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Tables & Figures

Register name	Register address RMA (hex)	Register address RMB (hex)	Usage	Default time (msec)	Binary representation (hex)
ADLY	00C05888	00F05888	Activation delay	1996.9	9C07
TGDLY0	00C05880	00F05880	Toggle delay #1	50.1 (RMA) 54.9 (RMB)	FA01 (RMA) 8902 (RMB)
TGDLY1	00C05884	00F05884	Toggle delay #2	60.1 (RMA) 54.9 (RMB)	9602 (RMA) 8902 (RMB)
TDLY0	00C05900	00F05900	Temporisation delay #1 (WD toggle)	998.5	9C06
TDLY1	00C05904	00F05904	Temporisation delay #2 (CRS1)	249.7	9C04
TDLY2	00C05908	00F05908	Temporisation delay #3 (CRS2)	249.7	9C04
TDLY3	00C0590C	00F0590C	Unused (CRS3 on Planck)	249.7	9C04
TDLY4	00C05910	00F05910	Temporisation delay #5 (AAD1)	249.7	9C04
TDLY5	00C05914	00F05914	Temporisation delay #6 (AAD2)	249.7	9C04
TDLY6	00C05918	00F05918	Temporisation delay #7 (Sep. strap 1)	29900.9	920B
TDLY7	00C0591C	00F0591C	Temporisation delay #8 (Sep. strap 2)	299827.3	B70E

Timing format

The storage of timing data always uses two integer numbers: a value, V, in the range 0 .. 255 and an exponent, E, in the range 0 .. 15. The actual timing is derived from these two numbers using the formula:

$$\text{Time} = (V * 2^E + 1) * 0.1 \text{ msec.}$$

This format allows the representation of timing values in the range from 0.1 msec to 836 seconds.

For timing data stored in registers, the integer number loaded into the register can be obtained as follows:

$$\text{Register} = (V \ll 8) + E,$$

where \ll represents a bit-wise left shift. The bit layout for retry delays is different to allow more efficient packing of bits in PAP tables.

Conversion to RM format

For any value T, representing time in milliseconds, the value and exponent for the representation used by the RM can be obtained as follows:

$$E = \max(\text{floor}(\log_2((T / 0.1 - 1) / 255)), 0)$$

$$V = \text{floor}((T / 0.1 - 1) / 2^E)$$

A check must obviously be applied that the numbers remain in the ranges specified above. The choice of value and exponent is not unique, and the algorithm above is optimised to achieve the best resolution (lowest exponent).