

S/C Mode transition from Earth Acquisition to Survival
 File: H_CRP_DHS_3062.xls
 Author: S. Manganelli



Procedure Summary

Objectives

This procedure describes the steps needed to perform the S/C transition from Earth Acquisition mode to Survival mode.

Summary of Constraints

The S/C mode is changed through a TC that emulates the sequence of commands sent by the RM for CCS 0/6/11/13 depending on the PAP set in use. To work correctly, this procedure requires both RMs to be disabled. This is because the RMs would react to the commanded activity as if it would be a failure on board. At the end of the procedure the RMs must be re-enabled.

**** WARNING: the CDMU will NOT be protected by the RMs while they are disabled, so this is a very critical operation. Extra ground support should be available when running this procedure. Only the SOM can authorize this procedure..

Spacecraft Configuration

Start of Procedure

CDMU Earth Acquisition mode

End of Procedure

CDMU survival mode

Reference File(s)

Input Command Sequences

Output Command Sequences

HRD3062A
 HRD3062B
 HRD3062C
 HRD3062E
 HRD3062F

Referenced Displays

ANDs	GRDs	SLDs
ZAZAA999		(None)
ZAZAI999		
ZAZ7R999		

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
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Status : Version 5 - Unchanged
 Last Checkin: 04/05/09

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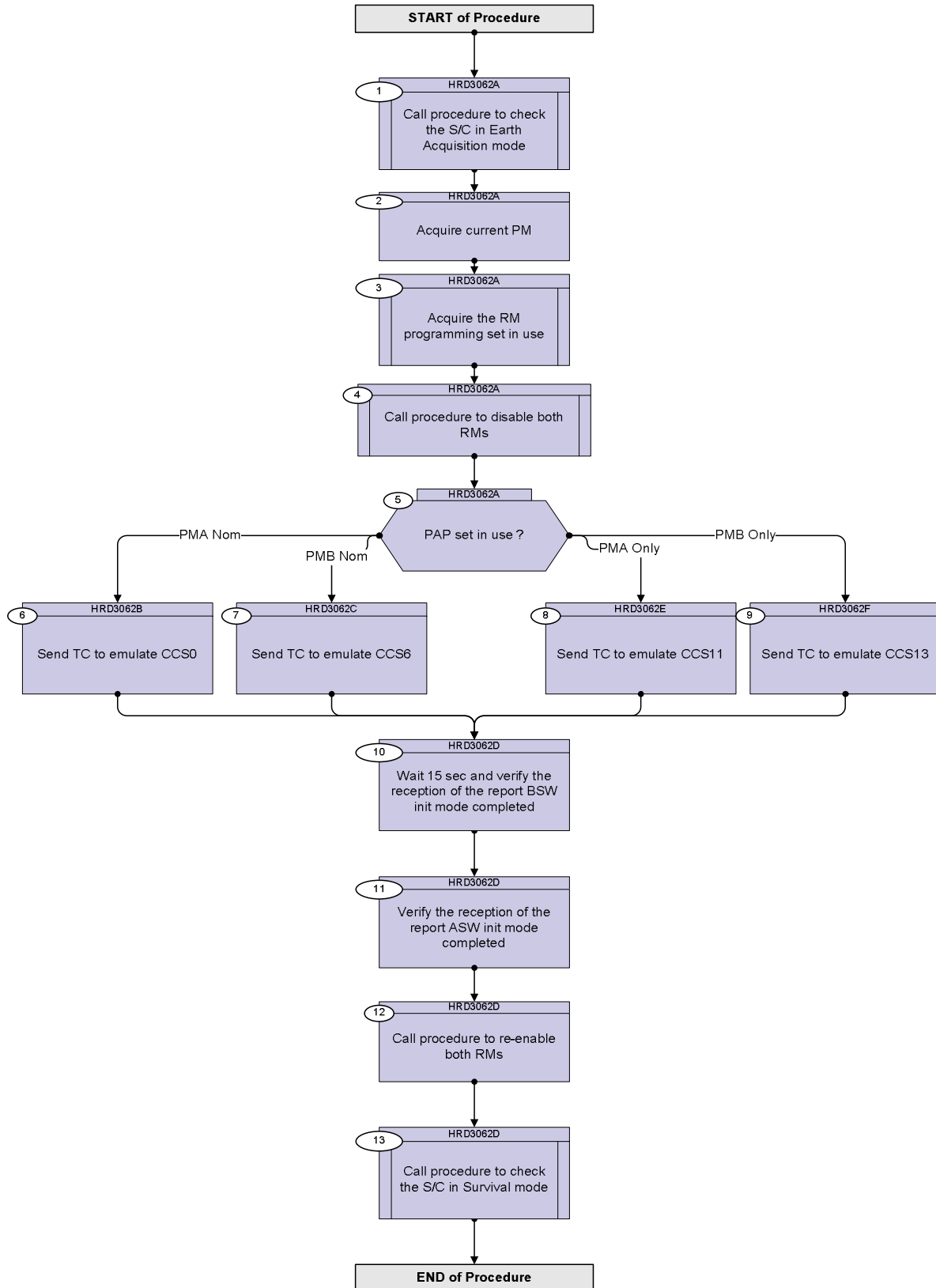


12/11/08		1	Created	cmevi-hp	
			Updated following OBSW 3_8		
11/01/09	2	2	Removed parameters of Boot report (not manageable, use excel instead)	S. Manganelli	
			Added disabling and enabling of RMs		
13/04/09	2.3	3	Modified procedure cover comments Calls to ESOC instantiated mode check procedures	S. Manganelli	
04/05/09		4	Inserted selection steps for PMA only / PMB only cases as per TAS-I inputs. Modified AND reference.	S. Manganelli	
04/05/09	2.4	5	Modified front page summary.	S. Manganelli	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
TC Seq. Name :HRD3062A (Check EAM mode)				
TimeTag Type: Sub Schedule ID: □				
1		Call procedure to check the S/C in Earth Acquisition mode		Next Step: 2
		Execute Procedure: H_FCP_DHS_EACK CDMU checks in earth acquisition mode		
2		Acquire current PM		Next Step: 3
		Verify Telemetry Active_PM_Board DEDM1160		AND=ZAZAA999
3		Acquire the RM programming set in use		Next Step: 4
3.1		Start TTR management		□
		Verify Telemetry TtrSts DEL17170 = Stopped		AND=ZAZAI999
		If the TTR Management function is already running go to next step.		
		Execute Telecommand StartTtrManag TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : Start Ttr Management TC(8,1,109)	DCN06170	
		Verify Telemetry TtrSts DEL17170 = Running		AND=ZAZAI999
3.2		Read PAP in use on RMA		□

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand CRMA_RMH_PAPpointerReg TC Control Flags : Subsch. ID : 10 Det. descr. : CROME A: Read RMH PAP Pointer Register GBM IL DSE --Y -- --	DCW0Z159	
		Verify Packet Reception TM 8-6-109-17 TTR Management - Crome Register Report Packet Details: APID: 16 Type: 8 Subtype: 6 PI1: 27921 PI2: 0	CromeRegRpt	
		Verify Packet Telemetry CromeId DE285170	= Crome_A	AND=ZAZ7R999
		Verify Packet Telemetry CromeAddr DE329170	= 07005830 <hex>	(None)
		Verify Packet Telemetry CromeData DE367170	note down	(None)
		Possible values in RM PAP Pointer: Set 1 PMA Nom --> 0x02000030 Set 2 PMB Nom--> 0x020000A8 Set 3 PMA only--> 0x02000104 Set 4 PMB only--> 0x0200012C		
3.3		Read Attempt pointer in use on RMA		<input type="checkbox"/>
		Execute Telecommand CRMA_RMH_AT_pointerReg TC Control Flags : Subsch. ID : 10 Det. descr. : CROME A: Read RMH AT Pointer Register GBM IL DSE --Y -- --	DCW0Y159	
		Verify Packet Reception TM 8-6-109-17 TTR Management - Crome Register Report Packet Details: APID: 16 Type: 8 Subtype: 6 PI1: 27921 PI2: 0	CromeRegRpt	
		Verify Packet Telemetry CromeId DE285170	= Crome_A	AND=ZAZ7R999
		Verify Packet Telemetry CromeAddr DE329170	= 07005828 <hex>	(None)

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Telemetry CromeData DE367170	note down	(None)
		Possible values in RM Attempt Pointer: Set 1 PMA Nom--> 0x02000000 Set 2 PMB Nom--> 0x02000078 Set 3 PMA only--> 0x020000F0 Set 4 PMB only--> 0x02000118		
3.4		Read PAP in use on RMB		<input type="checkbox"/>
		Execute Telecommand CRMB_RMH_PAPpointerReg TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 10 Det. descr. : CROME B: Read RMH PAP Pointer Register	DCW2X159	
		Verify Packet Reception TM 8-6-109-17 TTR Management - Crome Register Report Packet Details: APID: 16 Type: 8 Subtype: 6 PI1: 27921 PI2: 0	CromeRegRpt	
		Verify Packet Telemetry CromeId DE285170	= Crome_B	AND=ZAZ7R999
		Verify Packet Telemetry CromeAddr DE329170	= 07005830 <hex>	(None)
		Verify Packet Telemetry CromeData DE367170	note down	(None)
		Possible values in RM PAP Pointer: Set 1 PMA Nom --> 0x02000030 Set 2 PMB Nom--> 0x020000A8 Set 3 PMA only--> 0x02000104 Set 4 PMB only--> 0x0200012C		
3.5		Read Attempt pointer in use on RMB		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand CRMB_RM_H_AT_pointerReg TC Control Flags : Subsch. ID : 10 Det. descr. : CROME B: Read RMH AT Pointer Register GBM IL DSE --Y -- --	DCW2W159	
		Verify Packet Reception TM 8-6-109-17 TTR Management - Crome Register Report Packet Details: APID: 16 Type: 8 Subtype: 6 PI1: 27921 PI2: 0	CromeRegRpt	
		Verify Packet Telemetry CromeId DE285170	= Crome_B	AND=ZAZ7R999
		Verify Packet Telemetry CromeAddr DE329170	= 07005828 <hex>	(None)
		Verify Packet Telemetry CromeData DE367170	note down	(None)
		Possible values in RM Attempt Pointer: Set 1 PMA Nom--> 0x02000000 Set 2 PMB Nom--> 0x02000078 Set 3 PMA only--> 0x020000F0 Set 4 PMB only--> 0x02000118		
3.6		<i>Stop TTR management</i>		□
		Verify Telemetry TtrSts DEL17170	= Running	AND=ZAZAI999
		If the TTR Management function is already stopped go to next step.		
		Execute Telecommand StopTtrManag TC Control Flags : Subsch. ID : 10 Det. descr. : Stop Ttr Management TC(8,2,109) GBM IL DSE --Y -- --	DCN07170	
		Verify Telemetry TtrSts DEL17170	= Stopped	AND=ZAZAI999
4		<i>Call procedure to disable both RMS</i>		Next Step: 5

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		WARNING: the following procedure has to be executed twice, the first time to disable RM A and the second to disable RM B		
		Execute Procedure: H_CRP_DHS_3011 Enable or disable Reconfiguration Module		
5		PAP set in use ?		Next Step: PMA Nom 6 PMB Nom 7 PMA Only 8 PMB Only 9
<p>TC Seq. Name :HRD3062B (Emulate CCS0)</p> <p>TimeTag Type: Sub Schedule ID:</p> <p><input type="checkbox"/></p>				
6		Send TC to emulate CCS0		Next Step: 10
		Execute Telecommand <div style="text-align: right;">PAP0_DoD_PMA_Nom</div> TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 10 Det. descr. : PAP#0 DoD - (PMA Nominal) - High Priority Standard	DCZA0159	
<p>TC Seq. Name :HRD3062C (Emulate CCS6)</p> <p>TimeTag Type: Sub Schedule ID:</p> <p><input type="checkbox"/></p>				
7		Send TC to emulate CCS6		Next Step: 10
		Execute Telecommand <div style="text-align: right;">PAP0_DoD_PMB_Nom</div> TC Control Flags : <div style="text-align: right;">GBM IL DSE --Y -- ---</div> Subsch. ID : 10 Det. descr. : PAP#0 DoD - (PMB Nominal) - High Priority Standard	DCZB0159	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<p><i>TC Seq. Name :HRD3062E (Emulate CCS11)</i></p> <p><i>TimeTag Type:</i> <i>Sub Schedule ID:</i></p> <p>□</p>				
8		Send TC to emulate CCS11		Next Step: 10
		Execute Telecommand <p style="text-align: right;">PAP0_DoD_PMA_Only</p> <i>TC Control Flags :</i> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <i>Subsch. ID : 10</i> <i>Det. descr. : PAP#0 DoD - (PMA Only) - High Priority Standard</i>	DCZAA159	
<p><i>TC Seq. Name :HRD3062F (Emulate CCS13)</i></p> <p><i>TimeTag Type:</i> <i>Sub Schedule ID:</i></p> <p>□</p>				
9		Send TC to emulate CCS13		Next Step: 10
		Execute Telecommand <p style="text-align: right;">PAP0_DoD_PMB_Only</p> <i>TC Control Flags :</i> <p style="text-align: right;">GBM IL DSE --Y -- ---</p> <i>Subsch. ID : 10</i> <i>Det. descr. : PAP#0 DoD - (PMB Only) - High Priority Standard</i>	DCZBA159	
<p><i>TC Seq. Name :HRD3062D (Check Survival mode)</i></p> <p><i>TimeTag Type:</i> <i>Sub Schedule ID:</i></p> <p>□</p>				
10		Wait 15 sec and verify the reception of the report BSW init mode completed		Next Step: 11

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Reception CdmuBsw Event 5-4 Boot Report and Reconfiguration Log Packet Details: APID: 16 Type: 5 Subtype: 4 PI1: 134 PI2: 134	D_EvRp_534	
		Use Excel Spreadsheet to decommutate the event		
11		Verify the reception of the report ASW init mode completed		Next Step: 12
		Verify Packet Reception CdmuAsw Event 5-1 Initialisation Completed Packet Details: APID: 16 Type: 5 Subtype: 1 PI1: 25857 PI2: 0	D_EvRp_058	
		Verify Packet Telemetry (Pkt = D_EvRp_058) TM5xEventID DEZSJ170 = InitCompleted		(None)
		Verify Packet Telemetry (Pkt = D_EvRp_058) SID DE010170 = 0 <dec>		(None)
		Verify Packet Telemetry (Pkt = D_EvRp_058) CdmuObswVerNr DE114170		(None)
		Verify Packet Telemetry (Pkt = D_EvRp_058) DebugInfo DE115170 = 0 <dec>		(None)
		Verify Packet Telemetry (Pkt = D_EvRp_058) SatelliteId DE116170 = Herschel		(None)
		Verify Packet Telemetry (Pkt = D_EvRp_058) InitTimeCoars16 DE178170		(None)
		Verify Packet Telemetry (Pkt = D_EvRp_058) Time_Fine DE052170		(None)
		Verify Packet Telemetry (Pkt = D_EvRp_058) EventSeqCounter DE069170		(None)
12		Call procedure to re-enable both RMs		Next Step: 13
		WARNING: the following procedure has to be executed twice, the first time to enable RM A and the second to enable RM B		

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		Execute Procedure: H_CRP_DHS_3011 Enable or disable Reconfiguration Module		
13		Call procedure to check the S/C in Survival mode		Next Step: END
		Execute Procedure: H_FCP_DHS_SRCK CDMU checks in Survival Mode		
End of Procedure				