CCU Switch ON
File: H_CRP_CCU_AB01.xls
Author: E. Picallo

Procedure Summary

Objectives

This procedure describes the steps to Power CCU A or CCU B ON

Summary of Constraints

Except for failure cases, the CCU will be operated in hot redundancy, because each CCU has the task to control a dedicated set of sensors in the cryostat.

However, the control and monitoring of the cryostat can also be accomplished by using only one CCU (part A or B). But during launch, it is mandatory that both CCU's will be powered ON to provide hot redundancy for the operation of the redundant valves by the AR-5 launcher.

To switch the CCU A/B ON it is necessary to close the LCL 37/38, thus ASW function "PCDU Management" has to be "running". At power up the CCU communication is initialised to receive commands from CDMU via MIL 1553 interface(takes 10 seconds to complete the initialization)

After switching the CCU ON, it is necessary to and mark it ON in the Unit In Use (UIU) and enable the related EAT (Event-Action Table) entry.

Thus the status of the ASW functions "Event/Action Management" have to be "running" and "FDIR Management" have to be "running"

CCU spare temperatues sensors shall be disabl

Spacecraft Configuration

Start of Procedure

CDMU in default configuration
Payload management function started
LCL 37 (CCU A)/LCL 38 (CCU B) open
CCU A/B configured "OFF" and "INVALID" on the 1553 S/C bus
CCU A/B set "OFF" on the UIU table
CCU monitoring on CCU A/B OFF
HK packets CCU A/CCU B monit#1 and #2 disabled

End of Procedure

CDMU in default configuration
Payload management function started
LCL 37 (CCU A)/LCL 38 (CCU B) close
CCU A/B configured "ON" and "VALID" on the 1553 S/C bus
CCU A/B set "ON" on the UIU table
CCU monitoring on CCU A/B ON
HK packets CCU A/CCU B monit#1 or #2 enabled

Reference File(s)

Input Command Sequences

Output Command Sequences

CCU Switch ON
File: H_CRP_CCU_AB01.xls
Author: E. Picallo

HRKAB011
HRKAB012

Referenced Displays

ANDs **GRDs** **SLDs**
ZAZ9L999

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
31/07/08	1	1	Created	E. Picallo	
15/09/08		2	TC DC005161 (Configure SDBFDIR) M12 / F12 flag setting update	E. Picallo	
26/11/08		3	Start monitoring on CCU at 8s period option added	E. Picallo	
09/01/09	2	4	CDMU ASW V3.8 and BSW V2.4 alignment	E. Picallo	
17/03/09		5	Disabled spare sensors for monitoring	E. Picallo	
25/03/09	2.2	6	In Steps 8.1 and 16.1 comment on default acq. period added	E. Picallo	

CCU Switch ON
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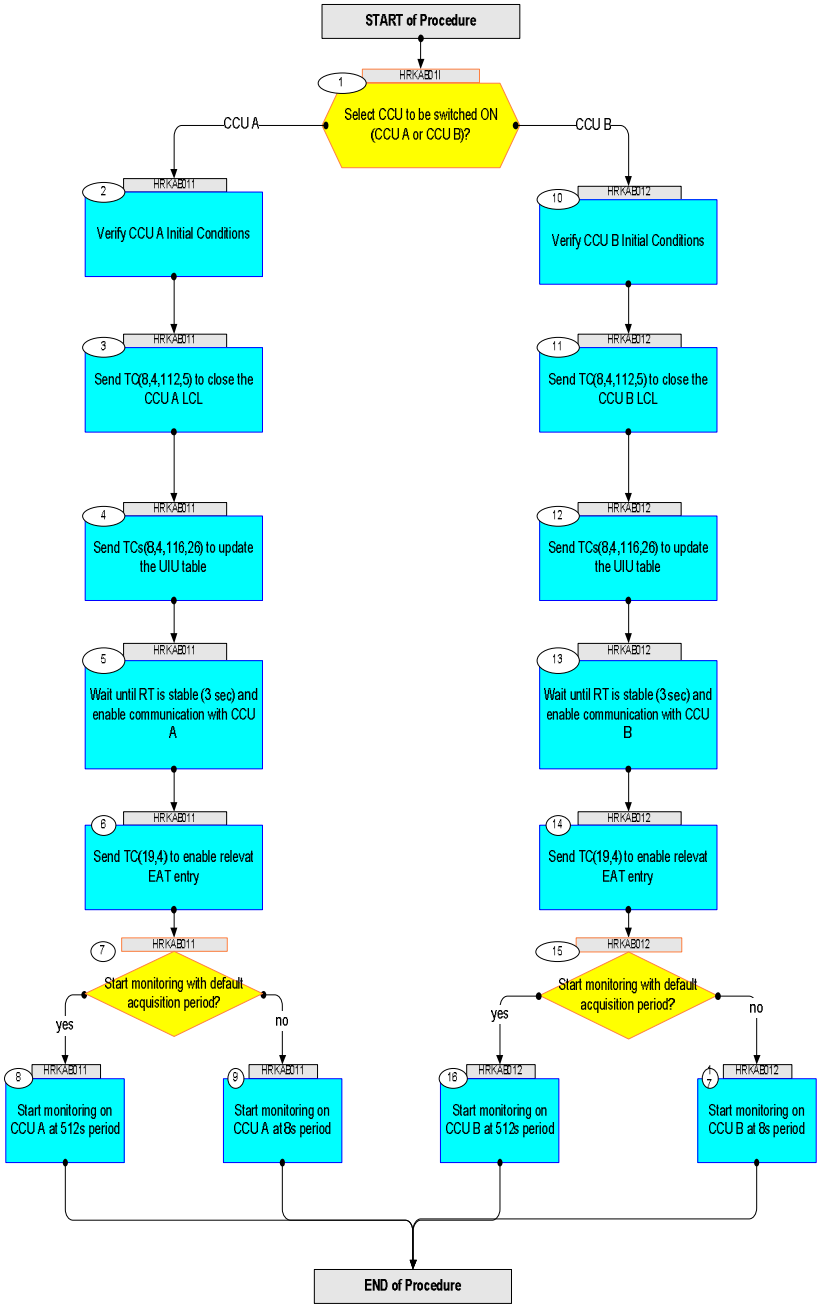
Procedure Flowchart Overview



CCU Switch ON
File: H_CRP_CCU_AB01.xls
Author: E. Picallo

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		TC Seq. Name :HRKAB01I (CCU Switch ON Init) *TimeTag Type:* *Sub Schedule ID:*		
1		*Select CCU to be switched ON* *(CCU A or CCU B)?*		Next Step: CCU A 2 CCU B 10
		TC Seq. Name :HRKAB011 (CCU A Switch ON) *TimeTag Type: N* *Sub Schedule ID:*		
2		*Verify CCU A Initial Conditions*		Next Step: 3
		Verify LCL37 (CCU A) Status Telemetry **Ccu_A_L37_S WM12A565**	**= OFF**	AND=ZAZ9L999
		Verify LCL37 (CCU A) current Telemetry **Ccu_A_L37_I WM106565**	**>= 0.00 A** **<= 0.10 A**	AND=ZAZ9L999
3		*Send TC(8,4,112,5) to close the CCU A LCL*		Next Step: 4
		Execute Switch LCL37 (CCU A) ON Telecommand **SwOn_Ccu_A_L37** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : PCDU: TC(8,4,112,5) CCU A - switch LCL_37 on	**DC37D170**	
		Verify LCL37 (CCU A) Status Telemetry **Ccu_A_L37_S WM12A565**	**= ON**	AND=ZAZ9L999
		Verify LCL37 (CCU A) current Telemetry **Ccu_A_L37_I WM106565**		AND=ZAZ9L999
4		*Send TCs(8,4,116,26) to update the UIU table*		Next Step: 5

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **H_FdirMarkUnitOn_Templ** *Command Parameter(s) :* **H_ConfStsUnitId DHZ00170** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	**DC93H159** **CcuA**	
4.1		*Verify CCU A status in UIU table*		
		Verify Telemetry **CcuAFuncSts DEL97171**	**= On**	AND=ZAZ9L999
5		*Wait until RT is stable (3 sec) and enable communication with CCU A*		Next Step: 6
		In the TC(8,4,10,1) it is necessary to set, in this case, the following parameters: **- Remote terminal address = 7 (CCU A)** **- RTA ON/OFF status = On** **- RTA Valid/Invalid = Valid** **The remaining parameters of the TC have been set but they are not important because are masked.**		
		Execute Telecommand (CCU A = valid) **ConfigureSDBFDIR** *Command Parameter(s) :* **RTA DH011161** **M0 DH030161** **M1 DH031161** **M2 DH032161** **M3 DH033161** **M4 DH034161** **M5 DH035161** **M6 DH036161** **M7 DH037161** **F0 DH018161** **F1 DH019161**	**DC005161** **CCU A** **Update status** **Ignore Flag** **Ignore Flag** **Ignore Flag** **Update status** **Ignore Flag** **Ignore Flag** **Ignore Flag** **ON** **Dead**	

Step No.	Time	Activity/Remarks		TC/TLM	Display/ Branch
		F2	**DH020161**	**Sick TC**	
		F3	**DH021161**	**Sick TM**	
		F4	**DH022161**	**Valid**	
		F5	**DH023161**	**Non-vital**	
		F6	**DH024161**	**NOMINAL**	
		F7	**DH025161**	**OFF**	
		M12	**DH051161**	**Ignore Flag**	
		M_C	**DH043161**	**Ignore CNT**	
		M8	**DH038161**	**Ignore Flag**	
		M9	**DH039161**	**Ignore Flag**	
		M10	**DH040161**	**Ignore Flag**	
		M11	**DH041161**	**Ignore Flag**	
		F12	**DH050161**	**DISABLED**	
		CNT	**DH042161**	**LoopCnt1**	
		F8	**DH026161**	**Bus A**	
		F9	**DH027161**	**Unhealthy**	
		F10	**DH028161**	**Unhealthy**	
		F11	**DH029161**	**DISABLED**	
		TC Control Flags :			
			GBM IL DSE		
			--Y -- ---		
		Subsch. ID : 10			
		Det. descr. : Configure SDB FDIR			
5.1		*Verify CCU A status on the 1553 S/C bus*			
		Verify Telemetry			
		CCUA_OnOff	**DED3G161**	**= ON**	AND=ZAZ9L999
		Verify Telemetry			
		CCUA_ValidInval	**DED3K161**	**= Valid**	AND=ZAZ9L999
6		*Send TC(19,4) to enable relevat EAT entry*			Next Step: 7
		When this request is received, the action-telecommand associated with the event TM (5,x,158) shall be enabled. In the TC(19,4) it is necessary to set the following parameters: N, number of events to be enabled, equal to 1. APID, identifier of the Application Process generating this event report, equal to 16 (CDMU). Event ID, identifier of the event to be enabled, equal to 158.			

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **EnableActions** *Command Parameter(s) :* **N_Repetition** **DH041170** **APID_for_EAT_TC** **DH236170** **EventId** **DH146170** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Enable Actions TC(19,4)	**DCT84170** **1 <dec>** (Def) **CDMS** (Def) **158 <dec>**	
7		*Start monitoring with default acquisition period?*		Next Step: yes 8 no 9
		Select the default acquisition period in case of routine monitoring (period of 512s) or in case of recycling or decontamination select acquisition period of 8s.		
8		*Start monitoring on CCU A at 512s period*		Next Step: END
		In this step the CCU A routine monitoring is started by setting the default acquisition period (0xFFF) i.e. All sensors for CCU A except the spare ones are acquired at 512 sec		
8.1		*Send TC(8,4,111,1) to start monitoring on CCU A*		□
		Execute Telecommand **PerformCcuManag** *Command Parameter(s) :* **CcuUnitCode** **DH084170** **Period** **DH085170** **CcuDataWord2** **DH086170** **CcuDataWord3** **DH087170** **CcuDataWord4** **DH088170** **CcuDataWord5** **DH089170** **CcuDataWord6** **DH090170** *TC Control Flags :* **GBM IL DSE** **--Y -- ---**	**DCT53170** **CcuA** (Def) **FFFF <hex>** **FFF7 <hex>** **F7FF <hex>** **FDFF <hex>** **BFFF <hex>** **FFFF <hex>**	
		Subsch. ID : 10 Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)		
8.2		*Report payload management status*		□

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **ReportPayloadManagSts** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Report Payload Management Status TC(8,5,111)	**DC12M170**	
		Verify payload management is started and CCUA monitoring status is enabled and that CCU A current period is 512 sec		
		Verify Packet Reception **TM 8-6-111 Payload Management Status Report - running idle** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**PayldMngRun** **16** **8** **6** **28671** **0**	
		Verify Packet Telemetry (Pkt = PayldMngRun) **Function_ID** **DE008170**	= **Payload_Manag**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **PayldManagActId** **DE249170**	= **RunningIdle**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **SID** **DE010170**	= **0 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CCUAMonStatus** **DEZA4170**	= **Enabled**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CCUBMonStatus** **DEZA5170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltPeriod** **DE250170**	= **512 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW2** **DE251170**	= **FFF7 <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW3** **DE252170**	= **F7FF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW4** **DE253170**	= **FDFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW5** **DE254170**	= **BFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW6** **DE255170**	= **FFFD <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrPeriod** **DE256170**	= **512 <dec>**	(None)

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW2 DE257170**	= **FFF7 <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW3 DE258170**	= **F7FF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW4 DE259170**	= **FDFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW5 DE260170**	= **BFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW6 DE261170**	= **FFFD <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltPeriod DE262170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW2 DE263170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW3 DE264170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW4 DE265170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW5 DE266170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW6 DE267170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrPeriod DE268170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW2 DE269170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW3 DE270170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW4 DE271170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW5 DE272170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW6 DE273170**		
8.3		*Enable CCU A monitoring packet*		□
		Enable and CCU_A monit#1 (HK ID = 68 SID = 0x2618)		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **EnableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Enable Generation of Telemetry Packets	**DC900180** **1 <dec>** (Def) **HK Report** **68 <dec>**	
8.4		*Verify the monitoring Mode#1 - 512 seconds per pkt. on CCU A is acquiered*		□
		Verify Packet Reception **Her Monitoring 1 Data from CCUA - generation period 512 s** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**D_H_CCU_A_M1** **18** **3** **25** **9752**	
9		*Start monitoring on CCU A at 8s period*		Next Step: END
		In this step the CCU A recycling / decontamination monitoring is started i.e.Set acquisition period to 8s and select all sensors for CCU A except the spare ones.		
9.1		*Send TC(8,4,111,1) to start monitoring on CCU A*		□
		Execute Telecommand **PerformCcuManag** *Command Parameter(s) :* **CcuUnitCode** **DH084170** **Period** **DH085170** **CcuDataWord2** **DH086170** **CcuDataWord3** **DH087170** **CcuDataWord4** **DH088170** **CcuDataWord5** **DH089170** **CcuDataWord6** **DH090170** *TC Control Flags :* **GBM IL DSE** **--Y -- ---**	**DCT53170** **CcuA** (Def) **8 <hex>** **FFF7 <hex>** **F7FF <hex>** **FDFF <hex>** **BFFF <hex>** **FFFD <hex>**	
		Subsch. ID : 10 Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
9.2		*Report payload management status*		
		Execute Telecommand **ReportPayloadManagSts** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Report Payload Management Status TC(8,5,111)	**DC12M170**	
		Verify payload management is started and CCUA monitoring status is enabled and that CCU A current period is 8 sec		
		Verify Packet Reception **TM 8-6-111 Payload Management Status Report - running idle** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**PayldMngRun** **16** **8** **6** **28671** **0**	
		Verify Packet Telemetry (Pkt = PayldMngRun) **Function_ID** **DE008170**	= **Payload_Manag**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **PayldManagActId** **DE249170**	= **RunningIdle**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **SID** **DE010170**	= **0 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CCUAMonStatus** **DEZA4170**	= **Enabled**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CCUBMonStatus** **DEZA5170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltPeriod** **DE250170**	= **512 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW2** **DE251170**	= **FFF7 <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW3** **DE252170**	= **F7FF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW4** **DE253170**	= **FDFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW5** **DE254170**	= **BFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW6** **DE255170**	= **FFFD <hex>**	(None)

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrPeriod DE256170**	= **8 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW2 DE257170**	= **FFF7 <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW3 DE258170**	= **F7FF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW4 DE259170**	= **FDFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW5 DE260170**	= **BFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW6 DE261170**	= **FFFD <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltPeriod DE262170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW2 DE263170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW3 DE264170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW4 DE265170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW5 DE266170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW6 DE267170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrPeriod DE268170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW2 DE269170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW3 DE270170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW4 DE271170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW5 DE272170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW6 DE273170**		
9.3		*Enable CCU A monitoring packet*		□
		Enable and CCU_A monit#2 (HK ID = 102 SID = 0x5924)		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **EnableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Enable Generation of Telemetry Packets	**DC900180** **1 <dec>** (Def) **Diag Report** **102 <dec>**	
9.4		*Verify the monitoring Mode#2 - 8 seconds per pkt. on CCU A is acquiered*		□
		Verify Packet Reception **Her Monitoring 2 Data from CCUA - generation period 8 s** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**D_H_CCU_A_M1** **18** **3** **26** **22820**	
		TC Seq. Name :HRKAB012 (CCU B Switch ON) *TimeTag Type: N* *Sub Schedule ID:* □		
10		*Verify CCU B Initial Conditions*		Next Step: 11
		Verify LCL38 (CCU B) Status Telemetry **Ccu_B_L38_S** **WMA2A565**	**= OFF**	AND=ZAZ9L999
		Verify LCL38 (CCU B) current Telemetry **Ccu_B_L38_I** **WMA06565**	**>= 0.00 A** **<= 0.10 A**	AND=ZAZ9L999
11		*Send TC(8,4,112,5) to close the CCU B LCL*		Next Step: 12
		Execute Switch LCL38 (CCU B) ON Telecommand **SwOn_Ccu_B_L38** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : PCDU: TC(8,4,112,5) CCU B - switch LCL_38 on	**DC38D170**	

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify LCL38 (CCU B) Status Telemetry **Ccu_B_L38_S WMA2A565**	**= ON**	AND=ZAZ9L999
		Verify LCL38 (CCU B) current Telemetry **Ccu_B_L38_I WMA06565**		AND=ZAZ9L999
12		*Send TCs(8,4,116,26) to update the UIU table*		Next Step: 13
		Execute Telecommand **H_FdirMarkUnitOn_Templ** *Command Parameter(s) :* **H_ConfStsUnitId DHZ00170** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE FDIR: Mark Unit On, TC(8,4,116,26), Herschel Version	**DC93H159** **CcuB**	
12.1		*Verify CCU B status in UIU table*		
		Verify Telemetry **CcuBFuncSts DEL96171**	**= On**	AND=ZAZ9L999
13		*Wait until RT is stable (3 sec) and enable communication with CCU B*		Next Step: 14
		In the TC(8,4,10,1) it is necessary to set, in this case, the following parameters: **- Remote terminal address = 8 (CCU B)** **- RTA ON/OFF status = On** **- RTA Valid/Invalid = Valid** **The remaining parameters of the TC have been set but they are not important because are masked.**		
		Execute Telecommand (CCU B = valid) **ConfigureSDBFDIR** *Command Parameter(s) :* **RTA DH011161** **M0 DH030161** **M1 DH031161** **M2 DH032161** **M3 DH033161** **M4 DH034161** **M5 DH035161** **M6 DH036161** **M7 DH037161** **F0 DH018161** **F1 DH019161**	**DC005161** **CCU B** **Update status** **Ignore Flag** **Ignore Flag** **Ignore Flag** **Update status** **Ignore Flag** **Ignore Flag** **Ignore Flag** **ON** **Dead**	

Step No.	Time	Activity/Remarks		TC/TLM	Display/ Branch
		F2	**DH020161**	**Sick TC**	
		F3	**DH021161**	**Sick TM**	
		F4	**DH022161**	**Valid**	
		F5	**DH023161**	**Non-vital**	
		F6	**DH024161**	**NOMINAL**	
		F7	**DH025161**	**OFF**	
		M12	**DH051161**	**Ignore Flag**	
		M_C	**DH043161**	**Ignore CNT**	
		M8	**DH038161**	**Ignore Flag**	
		M9	**DH039161**	**Ignore Flag**	
		M10	**DH040161**	**Ignore Flag**	
		M11	**DH041161**	**Ignore Flag**	
		F12	**DH050161**	**DISABLED**	
		CNT	**DH042161**	**LoopCnt1**	
		F8	**DH026161**	**Bus A**	
		F9	**DH027161**	**Unhealthy**	
		F10	**DH028161**	**Unhealthy**	
		F11	**DH029161**	**DISABLED**	
		TC Control Flags :			
			GBM IL DSE		
			--Y -- ---		
		Subsch. ID : 10			
		Det. descr. : Configure SDB FDIR			
13.1		*Verify CCU B status on the 1553 S/C bus*			
		Verify Telemetry			
		CCUB_OnOff	**DED41161**	**= ON**	AND=ZAZ9L999
		Verify Telemetry			
		CCUB_ValidInval	**DED45161**	**= Valid**	AND=ZAZ9L999
14		*Send TC(19,4) to enable relevat EAT entry*			Next Step: 15
		When this request is received, the action-telecommand associated with the event TM (5,x,159) shall be enabled. In the TC(19,4) it is necessary to set the following parameters: N, number of events to be enabled, equal to 1. APID, identifier of the Application Process generating this event report, equal to 16 (CDMU). Event ID, identifier of the event to be enabled, equal to 159.			

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **EnableActions** *Command Parameter(s) :* **N_Repetition DH041170** **APID_for_EAT_TC DH236170** **EventId DH146170** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Enable Actions TC(19,4)	**DCT84170** **1 <dec>** (Def) **CDMS** (Def) **159 <dec>**	
15		*Start monitoring with default acquisition period?*		Next Step: yes 16 no 17
		Select the default acquisition period in case of routine monitoring (period of 512s) or in case of recycling or decontamination select acquisition period of 8s.		
16		*Start monitoring on CCU B at 512s period*		Next Step: END
		In this step the CCU B routine monitoring is started by setting the default acquisition period (0xFFF) i.e. All sensors for CCU B except the spare ones are acquired at 512 sec		
16.1		*Send TC(8,4,111,1) to start monitoring on CCU B*		□
		Execute Telecommand **PerformCcuManag** *Command Parameter(s) :* **CcuUnitCode DH084170** **Period DH085170** **CcuDataWord2 DH086170** **CcuDataWord3 DH087170** **CcuDataWord4 DH088170** **CcuDataWord5 DH089170** **CcuDataWord6 DH090170** *TC Control Flags :* **GBM IL DSE** **--Y -- ---**	**DCT53170** **CcuB** **FFFF <hex>** **FEFF <hex>** **FFFF <hex>** **FCFF <hex>** **FFFF <hex>** **FFFD <hex>**	
		Subsch. ID : 10 Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)		
16.2		*Report payload management status*		□

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **ReportPayloadManagSts** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Report Payload Management Status TC(8,5,111)	**DC12M170**	
		Verify payload management is started and CCU B monitoring status is enabled and that CCU B current period is 512 sec		
		Verify Packet Reception **TM 8-6-111 Payload Management Status Report - running idle** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**PayldMngRun** **16** **8** **6** **28671** **0**	
		Verify Packet Telemetry (Pkt = PayldMngRun) **Function_ID** **DE008170**	= **Payload_Manag**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **PayldManagActId** **DE249170**	= **RunningIdle**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **SID** **DE010170**	= **0 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CCUAMonStatus** **DEZA4170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CCUBMonStatus** **DEZA5170**	= **Enabled**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltPeriod** **DE250170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW2** **DE251170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW3** **DE252170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW4** **DE253170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW5** **DE254170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW6** **DE255170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrPeriod** **DE256170**		(None)

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW2 DE257170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW3 DE258170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW4 DE259170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW5 DE260170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW6 DE261170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltPeriod DE262170**	= **512 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW2 DE263170**	= **FEFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW3 DE264170**	= **FFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW4 DE265170**	= **FCFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW5 DE266170**	= **FFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW6 DE267170**	= **FFFD <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrPeriod DE268170**	= **512 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW2 DE269170**	= **FEFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW3 DE270170**	= **FFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW4 DE271170**	= **FCFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW5 DE272170**	= **FFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW6 DE273170**	= **FFFD <hex>**	(None)
16.3		*Enable CCU B monitoring packet*		
		Enable and CCU_B monit#1 (HK ID = 71 SID = 0x2AAA)		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **EnableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Enable Generation of Telemetry Packets	**DC900180** **1 <dec>** (Def) **HK Report** **71 <dec>**	
16.4		*Verify the monitoring Mode#1 - 512 seconds per pkt. on CCU B is acquiered*		□
		Verify Packet Reception **Her Monitoring 1 Data from CCUB - generation period 512 s** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**D_H_CCU_B_M1** **18** **3** **25** **10922**	
17		*Start monitoring on CCU B at 8s period*		Next Step: END
		In this step the CCU B routine monitoring started i.e. Set acquisition period to 8s and select all sensors for CCU B except the spare ones.		
17.1		*Send TC(8,4,111,1) to start monitoring on CCU B*		□
		Execute Telecommand **PerformCcuManag** *Command Parameter(s) :* **CcuUnitCode** **DH084170** **Period** **DH085170** **CcuDataWord2** **DH086170** **CcuDataWord3** **DH087170** **CcuDataWord4** **DH088170** **CcuDataWord5** **DH089170** **CcuDataWord6** **DH090170** *TC Control Flags :* **GBM IL DSE** **--Y -- ---**	**DCT53170** **CcuB** **8 <hex>** **FEFF <hex>** **FFFF <hex>** **FCFF <hex>** **FFFF <hex>** **FFFD <hex>**	
		Subsch. ID : 10 Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
17.2		*Report payload management status*		
		Execute Telecommand **ReportPayloadManagSts** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Report Payload Management Status TC(8,5,111)	**DC12M170**	
		Verify payload management is started and CCU B monitoring status is enabled and that CCU B current period is 8 sec		
		Verify Packet Reception **TM 8-6-111 Payload Management Status Report - running idle** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**PayldMngRun** **16** **8** **6** **28671** **0**	
		Verify Packet Telemetry (Pkt = PayldMngRun) **Function_ID** **DE008170**	= **Payload_Manag**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **PayldManagActId** **DE249170**	= **RunningIdle**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **SID** **DE010170**	= **0 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CCUAMonStatus** **DEZA4170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CCUBMonStatus** **DEZA5170**	= **Enabled**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltPeriod** **DE250170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW2** **DE251170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW3** **DE252170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW4** **DE253170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW5** **DE254170**		
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuADfltMonDW6** **DE255170**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrPeriod DE256170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW2 DE257170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW3 DE258170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW4 DE259170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW5 DE260170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuACurrMonDW6 DE261170**		(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltPeriod DE262170**	= **512 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW2 DE263170**	= **FEFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW3 DE264170**	= **FFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW4 DE265170**	= **FCFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW5 DE266170**	= **FFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBDfltMonDW6 DE267170**	= **FFFD <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrPeriod DE268170**	= **8 <dec>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW2 DE269170**	= **FEFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW3 DE270170**	= **FFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW4 DE271170**	= **FCFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW5 DE272170**	= **FFFF <hex>**	(None)
		Verify Packet Telemetry (Pkt = PayldMngRun) **CcuBCurrMonDW6 DE273170**	= **FFFD <hex>**	(None)
17.3		*Enable CCU B monitoring packet*		□
		Enable and CCU_B monit#2 (HK ID = 104 SID = 0x5C30)		

CCU Switch ON
File: H_CRP_CCU_AB01.xls
Author: E. Picallo

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **EnableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Enable Generation of Telemetry Packets	**DC900180** **1 <dec>** (Def) **Diag Report** **104 <dec>**	
17.4		*Verify the monitoring Mode#2 - 8 seconds per pkt. on CCU B is acquiered*		□
		Verify Packet Reception **Her Monitoring 2 Data from CCUB - generation period 8 s** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**D_H_CCU_B_M1** **18** **3** **26** **23600**	
		End of Procedure		