CCU acquisition period update
File: H_FCP_CCU_ACQP.xls
Author: E. Picallo

Procedure Summary

Objectives

The objective of this procedure is to manage the acquisition period and CCU parameters to be monitored, and enable the requierd periodic or diagnostic TM packets, in case of:

- routine monitoring (period of 512s, packets CCU A/B monit#1)
- recycling (period of 8s, packets CCU A/B monit#2)
- decontamination (period of 8s, packets CCU A/B monit#2)

As well, the procedure includes the option to stop the CCU monitoring (e.g the monitoring should be stopped before performing a DLCM)

Summary of Constraints

This procedure assumes that both CCU A & B shall always be used for monitoring, so actions is taken on both CCUs.
If one of the CCUs were switched permanently OFF after an anomaly, the procedure should be modified to use only the healthy CCU.

There are 12 CCU parameters involved decontamination. As well, some CCU parameters are involved in PACS and SPIRE recycling for instrument interfaces temperatures monitoring. In these both cases all parameters shall be selected for acquisition at 8s period.
This procedure includes the option to select only the parameters involved in recycling or decontamination to be used only if necessary.

Channels not containing thermistor or pressure transducer should be deselected from “Start Monitoring” command.
If an open thermistor interface is monitored, the excitation current activation may generate a voltage spike on cables of other same type sensors.

Wait 7 sec to avoid introduce noise due to inter-relationship between CCUA and CCUB sensor acquisition.

Spacecraft Configuration

Start of Procedure

CDMU in default configuration
Payload management function started
CCU A/B ON and declared ON and Valid on the 1553 bus

End of Procedure

CDMU in default configuration
Payload management function started
CCU A/B ON and declared ON and Valid on the 1553 bus

Reference File(s)

Input Command Sequences

CCU acquisition period update
File: H_FCP_CCU_ACQP.xls
Author: E. Picallo

Output Command Sequences

HFKACQPI
HFKACQP1
HFKACQP2
HFKACQP3
HFKACQP4
HFKACQP5

Referenced Displays

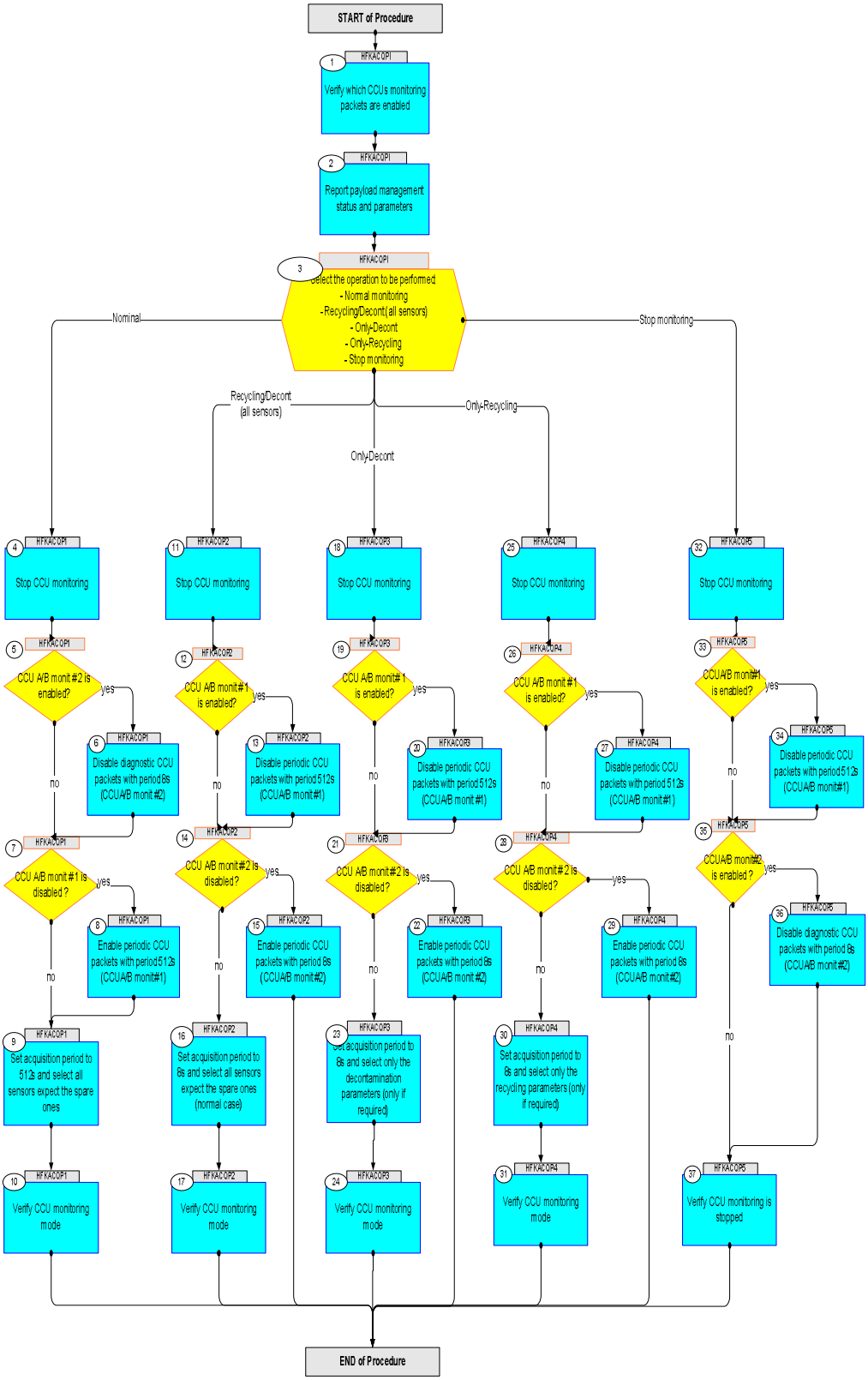
ANDs **GRDs** **SLDs**

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
29/07/08		1	Created	E. Picallo	
30/07/08		2	Update to acquire all CCU sensors during recycling	E. Picallo	
30/07/08	1	3	Time tagged sequences for Nominal an Recycling mode	E. Picallo	
19/08/08		4	Spare channels monitoring disabled during nominal and recycling mode (Link to NCR-3837)	E. Picallo	
21/10/08		5	Display mode update	E. Picallo	
03/12/08		5.01	Validation : pkts description correction	E. Picallo	
18/12/08	2	6	TC PerformCcuManag to start monitoring updated to disable ALL Spare channels	E. Picallo	
20/02/09	2.1	7	Add comments for Decont/Recycling monitoring at 8s period□ Only-Recycling and Only-Decont cases addded	E. Picallo	
25/03/09	2.2	8	Step 8 simplified by using default, i.e. period=0xFFFF□ Step 21.1 comment updated (only decont. parameters are acquired)□ Step 27.1 comment updated (only cryo recycling parameters are acquired)	E. Picallo	
13/07/09		9	Wait time of 7 sec to avoid introduce noise due to inter-relationship between CCUA and CCUB sensor acquisition added	E. Picallo	
22/07/09	2.5	10	wait time if 2 sec between deactivation/activation of HK packets added	E. Picallo	

CCU acquisition period update
File: H_FCP_CCU_ACQP.xls
Author: E. Picallo

Procedure Flowchart Overview



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		TC Seq. Name :HFKACQPI (CCU ACQ Period Init) CCU A/B Acquisition Period update *TimeTag Type: N* *Sub Schedule ID:*		
1		*Verify which CCUs monitoring packets are enabled*		Next Step: 2
		Acquire the list of the current enabled TM packets and verify: **- if the periodic packets CCUA monit#1 and CCUB monit#1 are enabled:** **CCUA monit#1 -> type=3, subtype=25, packet-ID=68** **CCUB monit#1 -> type=3, subtype=25, packet-ID=71** **- if the diagnostic packets CCUA monit#2 and CCUB monit#2 are enabled:** **CCUA monit#2 -> type=3, subtype=26, packet-ID=102** **CCUB monit#2 -> type=3, subtype=26, packet-ID=104**		
1.1		*Send TC(14,3) to acquire the list of the current enabled TM packets*		
		When this request is received, the enabled telemetry source packet of the CDMU are determined and a report (14,4) is generated		
		Execute Telecommand **ReportEnabledTm** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Report Enabled Telemetry Packets	**DC904180**	
1.2		*Verify that TM(14,4) has been received*		
		Verify Packet Reception **TM Packet Generation Status Report** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**TMpktGenRep** **16** **14** **4**	
		Verify Packet Telemetry **N** **DE140180**		
		Verify Packet Telemetry **Type** **DE141180**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Packet Telemetry **Sub-Type DE142180**		
		Verify Packet Telemetry **Packet-ID DE143180**		
2		*Report payload management status and parameters*		Next Step: 3
		Verify the CCU A/B Monitoring Status and current period		
		Execute Procedure: **H_FCP_CCU_REPO** **Payload management status Report**		
3		*Select the operation to be performed:* *- Normal monitoring* *- Recycling/Decont (all sensors)* *- Only-Decont* *- Only-Recycling* *- Stop monitoring*		Next Step: Nominal 4 Recycling/Decont (all sensors) 11 Only-Decont 18 Only-Recycling 25 Stop monitoring 32
		TC Seq. Name :HFKACQP1 (CCU ACQ Nominal mode) CCU A/B Nominal monitoring mode (Period 512 sec all sensors) *TimeTag Type: B* *Sub Schedule ID:*		
4		*Stop CCU monitoring*		Next Step: 5
		Send TC(8,4,111,1) to stop the CCU monitoring: **-> Unit: CCU A / CCU B** **-> Monitoring period: 0x0000 to stop monitoring** **-> Data word#2 to word#6 set to 0xFFFF**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuA** (Def) **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuB** **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	
5		*CCU A/B monit # 2 is enabled?*		Next Step: yes 6 no 7
		According to the acquired the list of the current enabled TM packets: **If the diagnostic packets CCUA monit#2 and CCUB monit#2 are enabled then disable them.**		
6		*Disable diagnostic CCU packets with period 8s (CCUA/B monit #2)*		Next Step: 7
		Disable and CCU_A monit#2 **(HK ID = 102 SID = 0x5924)** **Disable and CCU_B monit#2** **(HK ID = 104 SID = 0x5C30)**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.16 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **Diag Report** **102 <dec>**	
	ET=+00.00.02 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **Diag Report** **104 <dec>**	
7		*CCU A/B monit # 1 is disabled ?*		Next Step: yes 8 no 9
		According to the acquired the list of the current enabled TM packets: **If the periodic packets CCUA monit#1 and CCUB monit#1 are disabled then enable them.**		
8		*Enable periodic CCU packets with period 512s (CCUA/B monit #1)*		Next Step: 9
		Enable and CCU_A monit#1 **(HK ID = 68 SID = 0x2618)** **Enable and CCU_B monit#1** **(HK ID = 71 SID = 0x2AAA)**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.02 UT=+	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>**	
	ET=+00.00.02 UT=+	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>**	
9		*Set acquisition period to 512s and select all sensors expect the spare ones*		Next Step: 10
		Send TC(8,4,111,1) to monitor all the sensors expect the spare ones: **- Unit: CCU A** **- Monitoring period: set to default 0xFFFF (512 sec)** **- Data word#2 set to 0xFFF7** **- Data word#3 set to 0xF7FF** **- Data word#4 set to 0xFDFF** **- Data word#5 set to 0xBFFF** **- Data word#6 set to 0xFFFD**		
		Wait 7 sec to avoid introduce noise due to inter-relationship between CCUA and CCUB sensor acquisition		
		Send TC(8,4,111,1) to set monitoring all the sensors expect the spare ones: **- Unit: CCU B** **- Monitoring period: set to default 0xFFFF (512 sec)** **- Data word#2 set to 0xFEFF** **- Data word#3 set to 0xFFFF** **- Data word#4 set to 0xFCFF** **- Data word#5 set to 0xFFFF** **- Data word#6 set to 0xFFFD**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+00.00.01 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuA** (Def) **FFFF <hex>** **FFF7 <hex>** **F7FF <hex>** **FDFF <hex>** **BFFF <hex>** **FFFD <hex>**	
	ET=+00.00.07 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuB** **FFFF <hex>** **FEFF <hex>** **FFFF <hex>** **FCFF <hex>** **FFFF <hex>** **FFFD <hex>**	
10		*Verify CCU monitoring mode*		Next Step: END
10.1		*Report payload management status and parameters*		
		Verify Monitoring mode current period is 512 sec. and all sensors except the spare ones are selected		
		Execute Procedure: **H_FCP_CCU_REPO** **Payload management status Report**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		TC Seq. Name :HFKACQP2 (CCU ACQ Recyc/Decont) CCU A/B Recycling/Decont monitoring (Period 8 sec All sensors) *TimeTag Type: B* *Sub Schedule ID:*		
11		*Stop CCU monitoring*		Next Step: 12
		Send TC(8,4,111,1) to stop the CCU monitoring: **-> Unit: CCU A / CCU B** **-> Monitoring period: 0x0000 to stop monitoring** **-> Data word#2 to word#6 set to 0xFFFF**		
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuA** (Def) **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuB** **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	
12		*CCU A/B monit # 1 is enabled?*		Next Step: yes 13 no 14

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		According to the acquired the list of the current enabled TM packets: **If the periodic packets CCUA monit#1 and CCUB monit#1 are enabled then disable them.**		
13		*Disable periodic CCU packets with period 512s (CCUA/B monit #1)*		Next Step: 14
		Disable and CCU_A monit#1 (HK ID = 68 SID = 0x2618) **Disable and CCU_B monit#1** (HK ID = 71 SID = 0x2AAA)		
	ET=+00.00.16 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N DH017180** **Sub-Type DH019180** **Packet-ID DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **HK Report** **68 <dec>**	
	ET=+00.00.02 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N DH017180** **Sub-Type DH019180** **Packet-ID DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **HK Report** **71 <dec>**	
14		*CCU A/B monit # 2 is disabled ?*		Next Step: yes 15 no 16
		According to the acquired the list of the current enabled TM packets: **If the diagnostic packets CCUA monit#2 and CCUB monit#2 are disabled then enable them.**		
15		*Enable periodic CCU packets with period 8s (CCUA/B monit #2)*		Next Step: END

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Enable and CCU_A monit#2 (HK ID = 102 SID = 0x5924) **Enable and CCU_B monit#2** (HK ID = 104 SID = 0x5C30)		
	ET=+00.00.02 UT=+	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>**	
	ET=+00.00.02 UT=+	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>**	
16		*Set acquisition period to 8s and select all sensors expect the spare ones (normal case)*		Next Step: 17
		Note that there is no requirement to reduce the parameters to be monitored during recycling/ decontamination. Thus is prefered to switch the CCUs to high data-rate (8s instead of 512s) and to acquire all CCU sensors expect spare ones.		
		Send TC(8,4,111,1) to monitor all the sensors expect the spare ones: **- Unit: CCU A** **- Monitoring period: 8 sec** **- Data word#2 set to 0xFFF7** **- Data word#3 set to 0xF7FF** **- Data word#4 set to 0xFDFF** **- Data word#5 set to 0xBFFF** **- Data word#6 set to 0xFFFD**		
		Wait 7 sec to avoid introduce noise due to inter-relationship between CCUA and CCUB sensor acquisition		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Send TC(8,4,111,1) to set monitoring all the sensors expect the spare ones: **- Unit: CCU B** **- Monitoring period: 8 sec** **- Data word#2 set to 0xFEFF** **- Data word#3 set to 0xFFFF** **- Data word#4 set to 0xFCFF** **- Data word#5 set to 0xFFFF** **- Data word#6 set to 0xFFFD**		
	ET=+00.00.01 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuA** (Def) **8 <dec>** **FFF7 <hex>** **F7FF <hex>** **FDFF <hex>** **BFFF <hex>** **FFFD <hex>**	
	ET=+00.00.07 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuB** **8 <dec>** **FEFF <hex>** **FFFF <hex>** **FCFF <hex>** **FFFF <hex>** **FFFD <hex>**	
17		*Verify CCU monitoring mode*		Next Step: END
17.1		*Report payload management status and parameters*		
		Verify that CCU A/B current period is 8 sec and that the all cryo-parameters , except spare ones, are acquired.		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Procedure: **H_FCP_CCU_REPO** **Payload management status Report**		
		TC Seq. Name :HFKACQP3 (CCU ACQ Only Decont) CCU A/B Only Decontamination monitoring mode (Period 8 sec) *TimeTag Type: B* *Sub Schedule ID:*		
18		*Stop CCU monitoring*		Next Step: 19
		Send TC(8,4,111,1) to stop the CCU monitoring: **-> Unit: CCU A / CCU B** **-> Monitoring period: 0x0000 to stop monitoring** **-> Data word#2 to word#6 set to 0xFFFF**		
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuA** (Def) **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuB** **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
19		*CCU A/B monit # 1 is enabled?*		Next Step: yes 20 no 21
		According to the acquired the list of the current enabled TM packets: **If the periodic packets CCUA monit#1 and CCUB monit#1 are enabled then disable them.**		
20		*Disable periodic CCU packets with period 512s (CCUA/B monit #1)*		Next Step: 21
		Disable and CCU_A monit#1 (HK ID = 68 SID = 0x2618) **Disable and CCU_B monit#1** (HK ID = 71 SID = 0x2AAA)		
	ET=+00.00.16 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **HK Report** **68 <dec>**	
	ET=+00.00.02 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **HK Report** **71 <dec>**	
21		*CCU A/B monit # 2 is disabled ?*		Next Step: yes 22 no 23
		According to the acquired the list of the current enabled TM packets: **If the diagnostic packets CCUA monit#2 and CCUB monit#2 are disabled then enable them.**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
22		*Enable periodic CCU packets with period 8s (CCUA/B monit #2)*		Next Step: END
		Enable and CCU_A monit#2 (HK ID = 102 SID = 0x5924) **Enable and CCU_B monit#2 (HK ID = 104 SID = 0x5C30)**		
	ET=+00.00.02 UT=+	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>**	
	ET=+00.00.02 UT=+	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>**	
23		*Set acquisition period to 8s and select only the decontamination parameters (only if required)*		Next Step: 24
		There are 12 CCU parameters (6 for each CCU) involved in the control of the telescope during the decontamination.		
		Send TC (8,4,111,1) to select only the monitoring parameters on CCU A involved in the decontamination: **- Unit: CCU A** **- Monitoring period: 8 sec** **- Data word#2/#3/#4/#6 set to 0x0000** **- Data word#5 set to 0x87E0 (to monitor only the decontamination thermistors corresponding to bits Gl,Gm,Gn,Go,Gp,Gq and the gain calibration resistor X8)**		
		Wait 7 sec to avoid introduce noise due to inter-relationship between CCUA and CCUB sensor acquisition		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Send TC(8,4,111,1) to select only the monitoring parameters on CCU B involved in the decontamination: **- Unit: CCU B** **- Monitoring period: 8** **- Data word#2/#3/#4/#6 set to 0x0000** **- Data word#5 set to 0xC01F (to monitor only the decontamination thermistors corresponding to bits Gg,Gh,Gi,Gj,Gk,Gu and the gain calibration resistor X8)**		
	ET=+00.00.01 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuA** (Def) **8 <dec>** **0000 <hex>** (Def) **0000 <hex>** (Def) **0000 <hex>** (Def) **87E0 <hex>** **0000 <hex>** (Def)	
	ET=+00.00.07 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuB** **8 <dec>** **0000 <hex>** (Def) **0000 <hex>** (Def) **0000 <hex>** (Def) **C01F <hex>** **0000 <hex>** (Def)	
24		*Verify CCU monitoring mode*		Next Step: END
24.1		*Report payload management status and parameters*		
		Verify that CCU A/B current period is 8 sec and that only the decontamination parameters are acquired.		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Procedure: **H_FCP_CCU_REPO** **Payload management status Report**		
		TC Seq. Name :HFKACQP4 (CCU ACQOnlyRecycMode) CCU A/B Only Recycling monitoring mode (Period 8 sec) *TimeTag Type: B* *Sub Schedule ID:*		
25		*Stop CCU monitoring*		Next Step: 26
		Send TC(8,4,111,1) to stop the CCU monitoring: **-> Unit: CCU A / CCU B** **-> Monitoring period: 0x0000 to stop monitoring** **-> Data word#2 to word#6 set to 0xFFFF**		
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuA** (Def) **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuB** **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
26		*CCU A/B monit # 1 is enabled?*		Next Step: yes 27 no 28
		According to the acquired the list of the current enabled TM packets: **If the periodic packets CCUA monit#1 and CCUB monit#1 are enabled then disable them.**		
27		*Disable periodic CCU packets with period 512s (CCUA/B monit #1)*		Next Step: 28
		Disable and CCU_A monit#1 (HK ID = 68 SID = 0x2618) **Disable and CCU_B monit#1** (HK ID = 71 SID = 0x2AAA)		
	ET=+00.00.16 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **HK Report** **68 <dec>**	
	ET=+00.00.02 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **HK Report** **71 <dec>**	
28		*CCU A/B monit # 2 is disabled ?*		Next Step: yes 29 no 30
		According to the acquired the list of the current enabled TM packets: **If the diagnostic packets CCUA monit#2 and CCUB monit#2 are disabled then enable them.**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
29		*Enable periodic CCU packets with period 8s (CCUA/B monit #2)*		Next Step: END
		Enable and CCU_A monit#2 (HK ID = 102 SID = 0x5924) **Enable and CCU_B monit#2 (HK ID = 104 SID = 0x5C30)**		
	ET=+00.00.02 UT=+	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>**	
	ET=+00.00.02 UT=+	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>**	
30		*Set acquisition period to 8s and select only the recycling parameters (only if required)*		Next Step: 31
		The following parameters involved in recycling: **On CCU A:** **T236, T223, T227, T221, T102 & Cal. Res (s16)** **and** **T254, T234 & Cal Res (s26)** **On CCU B:** **T248,T235,T226,T231,T222,T225,T224,T101 & cal. Res (s16)** **and** **T256, T233 & Cal. Res (s26)**		
		Send TC(8,4,111,1) to select only the parameters on CCU A to be monitored during the cryo recycling: **- Unit: CCU A** **- Monitoring period: 8 sec** **- Data word#2 set to 0x8A45 (bits A1,B1,C3,D1,D3 and X2)** **- Data word#3 set to 0x4202 (bits E2,F5 and X2)** **- Data word#4 to word#6 set to 0x0000**		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Wait 7 sec to avoid introduce noise due to inter-relationship between CCUA and CCUB sensor acquisition		
		Send TC(8,4,111,1) to select only the parameters on CCU B to be monitored during the cryo recycling: **- Unit: CCU B** **- Monitoring period: 8 sec** **- Data word#2 set to 0xAACD (bits A1,B1,B2,C3,C4,D1,D3,D5 and X2)** **- Data word#3 set to 0x4202 (bits E2,F5 and X2)** **- Data word#4 to word#6 set to 0x0000**		
	ET=+00.00.01 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuA** (Def) **8 <dec>** **8A45 <hex>** **4202 <hex>** **0000 <hex>** (Def) **0000 <hex>** (Def) **0000 <hex>** (Def)	
	ET=+00.00.07 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuB** **8 <dec>** **AACD <hex>** **4202 <hex>** **0000 <hex>** (Def) **0000 <hex>** (Def) **0000 <hex>** (Def)	
31		*Verify CCU monitoring mode*		Next Step: END
31.1		*Report payload management status and parameters*		
		Verify that CCU A/B current period is 8 sec and that only cryo recycling parameters are acquired.		

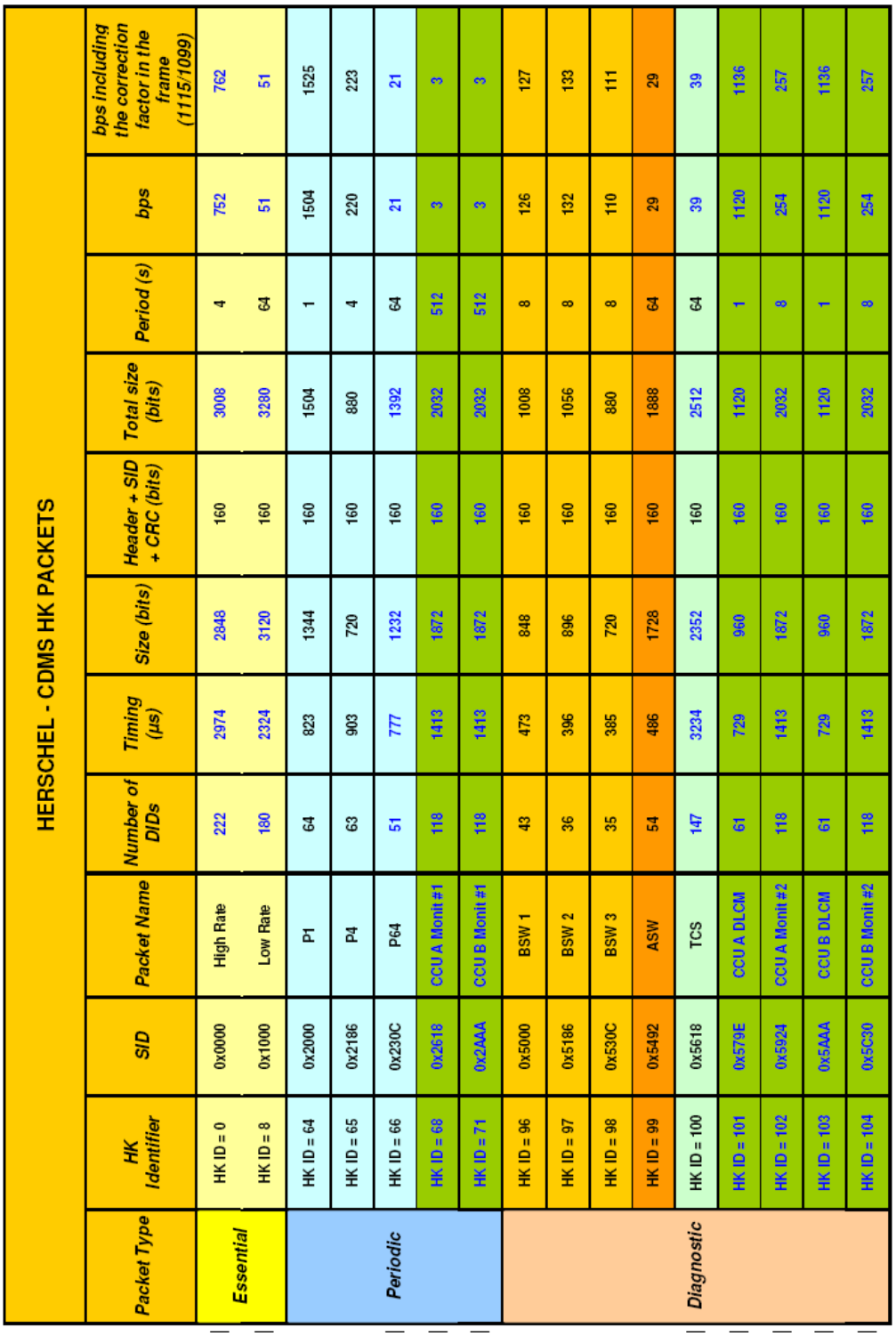
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Procedure: **H_FCP_CCU_REPO** **Payload management status Report**		
		TC Seq. Name :HFKACQP5 (CCU ACQ Stop monitor) CCU A/B Stop monitoring mode *TimeTag Type: B* *Sub Schedule ID:*		
32		*Stop CCU monitoring*		Next Step: 33
		Send TC(8,4,111,1) to stop the CCU monitoring: **-> Unit: CCU A / CCU B** **-> Monitoring period: 0x0000 to stop monitoring** **-> Data word#2 to word#6 set to 0xFFFF**		
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuA** (Def) **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	
	ET=+00.00.00 UT=+	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 -- ---** *Subsch. ID : 10* Det. descr. : TEMPLATE Perform CCU Management TC(8,4,111,1)	**DCT53170** **CcuB** **0 <dec>** (Def) **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>** **FFFF <hex>**	

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
33		*CCUA/B monit#1 is enabled ?*		Next Step: yes 34 no 35
		According to the acquired the list of the current enabled TM packets: **If the periodic packets CCUA monit#1 and CCUB monit#1 are enabled then disable them.**		
34		*Disable periodic CCU packets with period 512s (CCUA/B monit #1)*		Next Step: 35
		Disable and CCU_A monit#1 (HK ID = 68 SID = 0x2618) **Disable and CCU_B monit#1** (HK ID = 71 SID = 0x2AAA)		
	ET=+00.00.16 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **HK Report** **68 <dec>**	
	ET=+00.00.02 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **HK Report** **71 <dec>**	
35		*CCUA/B monit#2 is enabled ?*		Next Step: yes 36 no 37
		According to the acquired the list of the current enabled TM packets: **If the diagnostic packets CCUA monit#2 and CCUB monit#2 are enabled then disable them.**		

CCU acquisition period update
File: H_FCP_CCU_ACQP.xls
Author: E. Picallo

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
36		*Disable diagnostic CCU packets with period 8s (CCUA/B monit #2)*		Next Step: 37
		Disable and CCU_A monit#2 (HK ID = 102 SID = 0x5924) **Disable and CCU_B monit#2** (HK ID = 104 SID = 0x5C30)		
	ET=+00.00.02 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **Diag Report** **102 <dec>**	
	ET=+00.00.02 UT=+	Execute Telecommand **DisableTmGen** *Command Parameter(s) :* **N** **DH017180** **Sub-Type** **DH019180** **Packet-ID** **DH020180** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Disable Generation of Telemetry Packets	**DC902180** **1 <dec>** (Def) **Diag Report** **104 <dec>**	
37		*Verify CCU monitoring is stopped*		Next Step: END
37.1		*Report payload management status and parameters*		
		Verify that CCU A/B Monitoring Status is disabled		
		Execute Procedure: **H_FCP_CCU_REPO** **Payload management status Report**		
End of Procedure				

CCU acquisition period update
File: H_FCP_CCU_ACQP.xls
Author: E. Picallo



HERSCHEL - CDMS HK PACKETS

Packet Type	HK Identifier	SID	Packet Name	Number of DIDs	Timing (µs)	Size (bits)	Header + SID + CRC (bits)	Total size (bits)	Period (s)	bps	bps including the correction factor in the frame (1115/1099)
Essential	HK ID = 0	0x0000	High Rate	222	2974	2848	160	3008	4	752	762
	HK ID = 8	0x1000	Low Rate	180	2324	3120	160	3280	64	51	51
Periodic	HK ID = 64	0x2000	P1	64	823	1344	160	1504	1	1504	1525
	HK ID = 65	0x2186	P4	63	903	720	160	880	4	220	223
	HK ID = 66	0x230C	P64	51	777	1232	160	1392	64	21	21
	HK ID = 68	0x2618	CCU A Monit #1	118	1413	1872	160	2032	512	3	3
	HK ID = 71	0x2AAA	CCU B Monit #1	118	1413	1872	160	2032	512	3	3
Diagnostic	HK ID = 96	0x5000	BSW 1	43	473	848	160	1008	8	126	127
	HK ID = 97	0x5186	BSW 2	36	396	896	160	1056	8	132	133
	HK ID = 98	0x530C	BSW 3	35	385	720	160	880	8	110	111
	HK ID = 99	0x5492	ASW	54	486	1728	160	1888	64	29	29
	HK ID = 100	0x5618	TCS	147	3234	2352	160	2512	64	39	39
	HK ID = 101	0x579E	CCU A DLCM	61	729	960	160	1120	1	1120	1136
	HK ID = 102	0x5924	CCU A Monit #2	118	1413	1872	160	2032	8	254	257
	HK ID = 103	0x5AAA	CCU B DLCM	61	729	960	160	1120	1	1120	1136
	HK ID = 104	0x5C30	CCU B Monit #2	118	1413	1872	160	2032	8	254	257

Status : Version 10 - Unchanged
Last Checkin: 22/07/09