

Stop Decontamination heating  
 File: H\_LEO\_SYS\_DEC0.xls  
 Author: E. Picallo



## Procedure Summary

### Objectives

This procedure describes the steps needed to stop the decontamination heating of the telescope mirrors

### Summary of Constraints

### Spacecraft Configuration

#### Start of Procedure

Decontamination Heating Function running  
 HPS-N 1, 2, 4, 6, 9 ON and associated HCS 1 ON or OFF  
 HPS-R 10, 15, 17, 18 ON and associated HCS 1 ON or OFF

#### End of Procedure

Decontamination Heating Function stopped  
 HPS-N 1, 2, 4, 6, 9 ON and associated HCS 1 OFF  
 HPS-R 10, 15, 17, 18 OFF and associated HCS 1 OFF

### Reference File(s)

#### Input Command Sequences

#### Output Command Sequences

HLYDEC0

### Referenced Displays

ANDs GRDs SLDs  
 ZAZ9J999

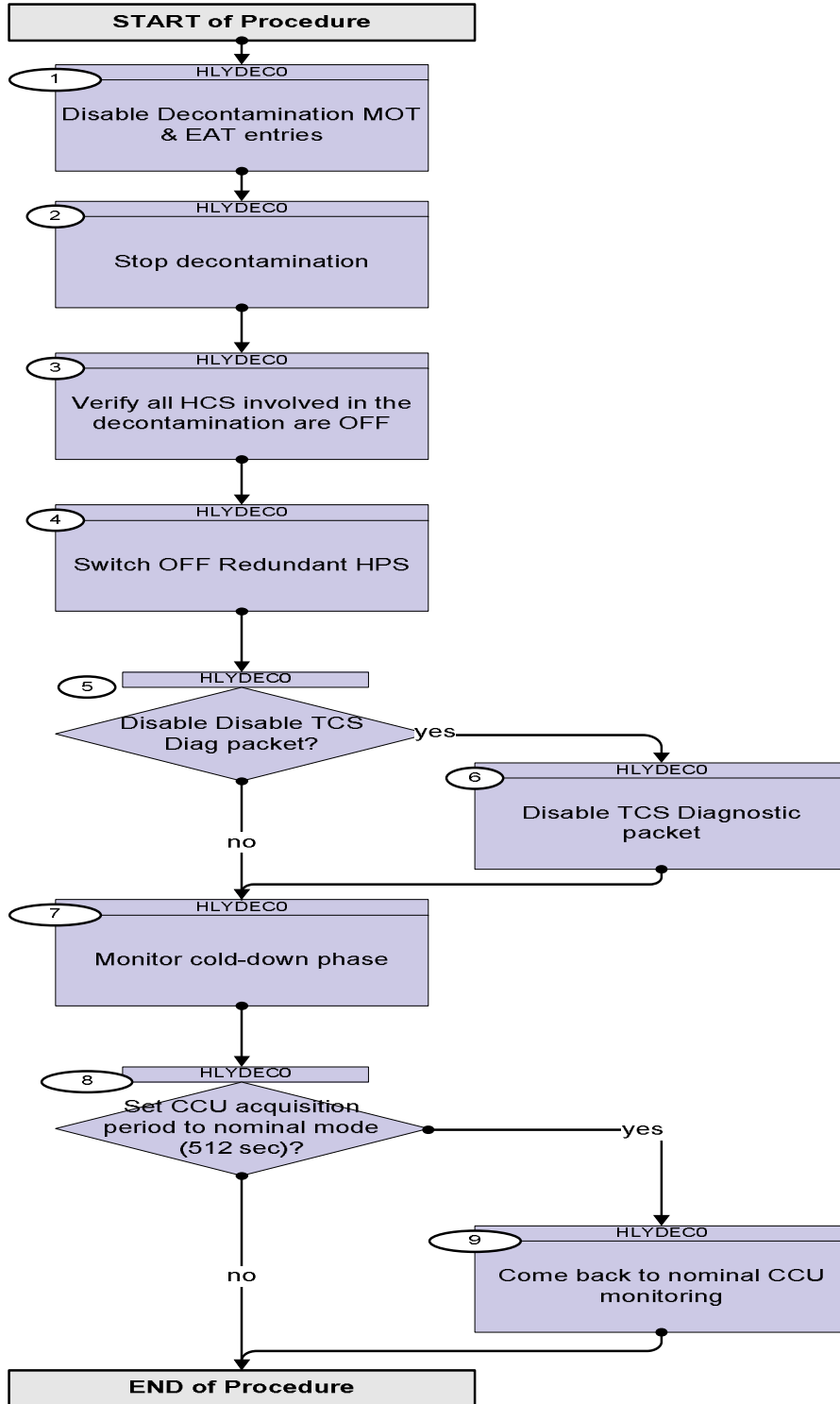
### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
31/07/08	1	1	Created	E. Picallo	
04/09/08		2	Disable TCS Diag packet added	E. Picallo	
08/01/09	2	3	CDMU ASW V3.8 and BSW V2.4 alignment MOT/EAT decontamination entries disabled before stopping decontamination function	E. Picallo	

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### Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>Beginning of Procedure</b>				
TC Seq. Name : HLYDECO (Stop Decontamination) Stop decontamination heating  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>				
1		Disable Decontamination MOT & EAT entries		Next Step: 2
		<b>Dedicated MOT and EAT entries are defined to switch OFF both M2 HPSs if the M2 median temperature exceeds the Tmaxmax threshold.</b>  <b>These MOT entries shall be disabled before stopping decontamination function.</b>		
1.1		Disable Decontamination EAT entries		<input type="checkbox"/>
		<b>EAT related entries to decontamination:</b> <b>Event ID Action TC</b> <b>40960 Switch OFF HPS 01</b> <b>40961 Switch OFF HPS 10</b>		
		Execute Telecommand <div style="text-align: right;"><b>DisableActions</b></div> <div style="text-align: right;">DCT85170</div> Command Parameter(s) : N_Repetition                  DH041170      2 <dec> APID_for_EAT_TC              DH236170      CDMS (Def) EventId               DH146170      40960 <dec> APID_for_EAT_TC              DH236170      CDMS (Def) EventId               DH146170      40961 <dec>  TC Control Flags : <div style="text-align: right;">GBM IL DSE</div> <div style="text-align: right;">--Y -- --</div> Subsch. ID : 10 Det. descr. : TEMPLATE Disable Actions TC(19,5)		
1.2		Report EAT table to check the decontamination EAT entries		<input type="checkbox"/>
		Execute Telecommand <div style="text-align: right;"><b>ReptEvtActTable</b></div> <div style="text-align: right;">DCT86170</div> TC Control Flags : <div style="text-align: right;">GBM IL DSE</div> <div style="text-align: right;">--Y -- --</div> Subsch. ID : 10 Det. descr. : TEMPLATE Report The contents of the event/action table TC(19,6)		
1.3		Disable Decontamination MOT entries		<input type="checkbox"/>

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		<b>MOT related entries to decontamination:</b> <b>Monitoring ID Parameter ID</b> <b>200 M2 median temperature</b> <b>201 M2 median temperature</b>																	
		Execute Telecommand <p style="text-align: right;"><b>ArmDisableMon</b></p> <i>TC Control Flags :</i> <p style="text-align: right;"><b>GBM IL DSE</b>  <b>--Y -- ---</b></p> <i>Subsch. ID : 10</i> <i>Det. descr. : Arm Disable On Board Monitoring,</i> <i>TC(8,4,106,1)</i>	DC54F170																
		Execute Telecommand <p style="text-align: right;"><b>DisMonitOfParam_Templ</b></p> <i>Command Parameter(s) :</i> <table style="width: 100%; border: none;"> <tr> <td style="padding-right: 20px;"><b>N_Repetition</b></td> <td style="padding-right: 20px;"><b>DH041170</b></td> <td><b>2 &lt;dec&gt;</b></td> </tr> <tr> <td><b>ParameterId</b></td> <td><b>DH042170</b></td> <td><b>2049 &lt;dec&gt;</b></td> </tr> <tr> <td><b>MonitorId</b></td> <td><b>DH043170</b></td> <td><b>200 &lt;dec&gt;</b></td> </tr> <tr> <td><b>ParameterId</b></td> <td><b>DH042170</b></td> <td><b>2049 &lt;dec&gt;</b></td> </tr> <tr> <td><b>MonitorId</b></td> <td><b>DH043170</b></td> <td><b>201 &lt;dec&gt;</b></td> </tr> </table> <i>TC Control Flags :</i> <p style="text-align: right;"><b>GBM IL DSE</b>  <b>--Y -- ---</b></p> <i>Subsch. ID : 10</i> <i>Det. descr. : TEMPLATE Disable Monitoring of</i> <i>Parameter, TC(12,2)</i>	<b>N_Repetition</b>	<b>DH041170</b>	<b>2 &lt;dec&gt;</b>	<b>ParameterId</b>	<b>DH042170</b>	<b>2049 &lt;dec&gt;</b>	<b>MonitorId</b>	<b>DH043170</b>	<b>200 &lt;dec&gt;</b>	<b>ParameterId</b>	<b>DH042170</b>	<b>2049 &lt;dec&gt;</b>	<b>MonitorId</b>	<b>DH043170</b>	<b>201 &lt;dec&gt;</b>	DCT27170	
<b>N_Repetition</b>	<b>DH041170</b>	<b>2 &lt;dec&gt;</b>																	
<b>ParameterId</b>	<b>DH042170</b>	<b>2049 &lt;dec&gt;</b>																	
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<b>MonitorId</b>	<b>DH043170</b>	<b>201 &lt;dec&gt;</b>																	
1.4		<i>Report Monitoring List to check the decontamination entries</i>		<input type="checkbox"/>															
		Execute Telecommand <p style="text-align: right;"><b>ReportMonitList</b></p> <i>TC Control Flags :</i> <p style="text-align: right;"><b>GBM IL DSE</b>  <b>--Y -- ---</b></p> <i>Subsch. ID : 10</i> <i>Det. descr. : TEMPLATE Report current monitoring list,</i> <i>TC(12,8) no appl. data</i>	DC51F170																
2		<i>Stop decontamination</i>		Next Step: 3															
2.1		<i>Acquire the status of the function</i>		<input type="checkbox"/>															
		Verify Decontamination Heating Function Status <p style="text-align: center;"><b>DhSts                    DEG17170</b></p> <p style="text-align: center;"><b>= Running</b></p>		AND=ZAZ9J999															
2.2		<i>Send TC(8,2,113) to stop the function</i>		<input type="checkbox"/>															

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<b>Stop Decontamination Heating telecommand is used for switching off the function.</b>		
		Execute Telecommand <p style="text-align: right;">StopDecontHeat</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : Stop Decontamination Heating TC(8,2,113)	DC14M170	
2.3		Verify that the function has been stopped		<input type="checkbox"/>
		Verify Decontamination Heating Function Status <p style="text-align: center;">DhSts                      DEG17170</p>	= Stopped	AND=ZAZ9J999
3		Verify all HCS involved in the decontamination are OFF		Next Step: 4
		<b>Verify HCS1 OFF associated to HPS-N 1, 2, 4, 6, 9 and HPS-R 10, 15, 17, 18</b>		
		Verify Telemetry <p style="text-align: center;">Decon1_G1H1_S                      WM11A565</p>	= OFF	AND=ZAZ9J999
		Verify Telemetry <p style="text-align: center;">Decon3_G2H1_S                      WM21A565</p>	= OFF	AND=ZAZ9J999
		Verify Telemetry <p style="text-align: center;">Decon5_G4H1_S                      WM31A565</p>	= OFF	AND=ZAZ9J999
		Verify Telemetry <p style="text-align: center;">Decon7_G6H1_S                      WM41A565</p>	= OFF	AND=ZAZ9J999
		Verify Telemetry <p style="text-align: center;">Decon8_G9H1_S                      WM51G565</p>	= OFF	AND=ZAZ9J999
		Verify Telemetry <p style="text-align: center;">Decon2_G10H1_S                      WM61A565</p>	= OFF	AND=ZAZ9J999
		Verify Telemetry <p style="text-align: center;">Decon6_G15H1_S                      WM81G565</p>	= OFF	AND=ZAZ9J999
		Verify Telemetry <p style="text-align: center;">Decon4_G17H1_S                      WM91G565</p>	= OFF	AND=ZAZ9J999
		Verify Telemetry <p style="text-align: center;">Decon9_G18H1_S                      WMA1A565</p>	= OFF	AND=ZAZ9J999
		<b>WARNING: in case of a heater failure, i.e. any HCS remains ON after stopping the decontamination, a recovery action shall be taken calling the contingency procedure H_CRP_SYS_DECR (Decontamination Heating failure recovery)</b>		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
4		Switch OFF Redundant HPS		Next Step: 5
		<b>There are 3 redundant heaters lines for M1 are:</b> <b>M1 heater line 4 HPS 17 HCS 1 R</b> <b>M1 heater line 6 HPS 15 HCS 1 R</b> <b>M1 heater line 9 HPS 18 HCS 1 R</b>		
		<b>There redundant heater line for M2 is:</b> <b>M2 heater line 2 HPS 10 HCS 1 R</b>		
4.1		Send TC(8,4,112,3) to switch OFF HPS-R 10, 15, 17, 18		<input type="checkbox"/>
		Execute Telecommand <p style="text-align: right;"><b>PcduswOffHps10</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE  --Y -- ---</p> Subsch. ID : 10 Det. descr. : PCDU:TC(8,4,112,3) switch Off HPS 10	DCD36170	
		Verify Telemetry <p style="text-align: center;"><b>GRP10_HPS_STS</b>                      <b>WM62G565</b></p>	= OFF	AND=ZAZ9J999
		Execute Telecommand <p style="text-align: right;"><b>PcduswOffHps15</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE  --Y -- ---</p> Subsch. ID : 10 Det. descr. : PCDU:TC(8,4,112,3) switch Off HPS 15	DCD41170	
		Verify Telemetry <p style="text-align: center;"><b>GRP15_HPS_STS</b>                      <b>WM82H565</b></p>	= OFF	AND=ZAZ9J999
		Execute Telecommand <p style="text-align: right;"><b>PcduswOffHps17</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE  --Y -- ---</p> Subsch. ID : 10 Det. descr. : PCDU:TC(8,4,112,3) switch Off HPS 17	DCD43170	
		Verify Telemetry <p style="text-align: center;"><b>GRP17_HPS_STS</b>                      <b>WM92H565</b></p>	= OFF	AND=ZAZ9J999
		Execute Telecommand <p style="text-align: right;"><b>PcduswOffHps18</b></p> TC Control Flags : <p style="text-align: right;">GBM IL DSE  --Y -- ---</p> Subsch. ID : 10 Det. descr. : PCDU:TC(8,4,112,3) switch Off HPS 18	DCD44170	

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		Verify Telemetry GRP18_HPS_STS WMA2G565	= OFF	AND=ZAZ9J999
5		Disable Disable TCS Diag packet?  <b>If the TCS Diagnostic packet is not anymore needed, disable it.</b>		Next Step: no 7 yes 6
6		Disable TCS Diagnostic packet  <b>Call procedure "Enable or disable the generation of an housekeeping or diagnostic packet" H_FCP_DHS_3033</b>  <b>Disable the TCS Diagnostic packet: TCS -&gt; subtype=26, packet-ID=100</b>		Next Step: 7
		Execute Procedure: H_FCP_DHS_3033 Enable or disable the generation of an housekeeping or diagnostic packet		
7		Monitor cold-down phase  <b>Monitor the M1 &amp; M2 thermistors during the following days and check that the temperature evolution after stopping the decontamination is as predicted by the thermal analysis.</b>		Next Step: 8
7.1		Verify M1 thermistors		<input type="checkbox"/>
		Verify on telescope; M1 THA ; T21-5 (A) PT1000_T331 KD253302		AND=ZAZ9J999
		Verify on telescope; M1 THA' ; T22-5 (A) PT1000_T333 KD254302		AND=ZAZ9J999
		Verify on telescope; M1 THC ; T23-5 (A) PT1000_T335 KD255302		AND=ZAZ9J999
		Verify on telescope; M1 THC' ; T24-5 (A) PT1000_T337 KD256302		AND=ZAZ9J999
		Verify on telescope; M1 THA'' ; T16-5 (B) PT1000_T332 KD248303		AND=ZAZ9J999
		Verify on telescope; M1 THB ; T17-5 (B) PT1000_T334 KD249303		AND=ZAZ9J999

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		Verify on telescope; M1 THB' ; T18-5 (B) PT1000_T336                      KD250303		AND=ZAZ9J999
		Verify on telescope; M1 THB'' ; T19-5 (B) PT1000_T338                      KD251303		AND=ZAZ9J999
		Verify on telescope; M1 THC'' ; T20-5 (B) PT1000_T340                      KD252303		AND=ZAZ9J999
7.2		Verify M2 thermistors		<input type="checkbox"/>
		Verify on telescope; M2 THX ; T25-5 (A) PT1000_T339                      KD257302		AND=ZAZ9J999
		Verify on telescope; M2 THY ; T26-5 (A) PT1000_T341                      KD258302		AND=ZAZ9J999
		Verify on telescope; M2 THZ ; T30-5 (B) PT1000_T342                      KD262303		AND=ZAZ9J999
8		Set CCU acquisition period to nominal mode (512 sec)?		Next Step: yes 9 no END
9		Come back to nominal CCU monitoring		Next Step: END
		<b>Execute Procedure H_FCP_CCU_ACQP and select the nominal monitoring mode.</b>		
		Execute Procedure: H_FCP_CCU_ACQP CCU acquisition period update		
<b>End of Procedure</b>				