

STR Reconfiguration
File: H_CRP_AOC_4S01.xls
Author: dsalt-hp



Procedure Summary

Objectives

The objective of this Herschel ACMS contingency procedure is to reconfigure STRmain.

The procedure involves the following activities:

- identifying unit current flagged as STRmain
- check/reset health flag of current STRredundant, as necessary
- enable DTM for STR1 & STR2 calibration data
- make unit currently flagged as STRred operational
 - STR2 switch ON (calls H_FCP_AOC_8ON2), if necessary
 - STR1 switch ON (calls H_FCP_AOC_8ON1), if necessary
- disable STR related FDIR checks
- change the STRmain flag
- enable STR related FDIR checks
- switch OFF of unit now flagged as STRred
- disable DTM for STR1 & STR2 calibration data

Summary of Constraints

Both STR units must not be switched ON at the same time for more than a few minutes (TBC), due to thermal constraints

Spacecraft Configuration

Start of Procedure

n/a

End of Procedure

n/a

Reference File(s)

Input Command Sequences

HFAD3FDI
HFAD3FDJ

Output Command Sequences

HRA4S01X
NULL01
HRA4S01A
HRA4S01B
NULL02

Referenced Displays

ANDs	GRDs	SLDs
ZAA01999		(None)
ZAA00999		
ZAA02999		
ZAA06999		

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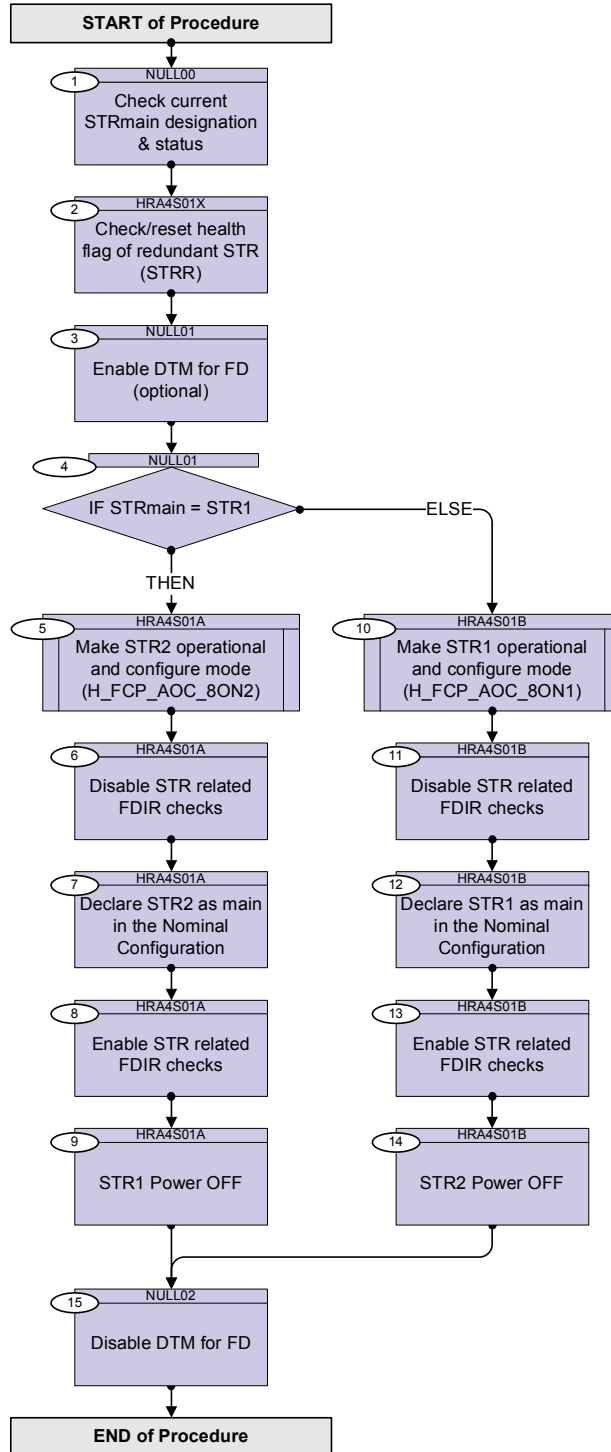
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
01/08/2008	1	1	Created	dsalt-hp	
			Step 3 & 15 added to enable/disable DTM for FD with both STR1 & STR2 powered ON <input type="checkbox"/>		
17/08/2009		2	Step 6, 8, 11, 13 added to disable/enable STR related FDIR when changing STRM	dsalt-hp	
25/08/2009	2.5	3	TCs included in Step 2 to declare STRR healthy, as necessary	dsalt-hp	
03/09/2010		4	Descriptions in Step 6 & 12.1 corrected.	dsalt-hp	
24/02/2011	3.1	5	Step 8.1 & 13.1 updated to disable STR HK check to ensure coherence with latest on-board configuration	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				
TC Seq. Name : NULL00 (Null Sequence 00) TimeTag Type: Sub Schedule ID: <input type="checkbox"/>				
1		Check current STRmain designation & status		Next Step: 2
		Verify Telemetry Curr STR in use AES18002	= STR 1 = STR 2	AND=ZAA01999
		If STR1 is Main, check the following		
		Verify Telemetry STR1 power AE4P1002	= ON	AND=ZAA00999
		Verify Telemetry STR2 power AE4P2002	= OFF	AND=ZAA00999
		If STR2 is Main, check the following		
		Verify Telemetry STR1 power AE4P1002	= OFF	AND=ZAA00999
		Verify Telemetry STR2 power AE4P2002	= ON	AND=ZAA00999
TC Seq. Name : HRA4S01X (Declare STRR Healthy) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
2		Check/reset health flag of redundant STR (STRR)		Next Step: 3
2.1		Check health status flag of the current STRR		<input type="checkbox"/>
		Check the Health flag of the current STRR via the following TM, as appropriate		
		Verify Telemetry STR1 Health Sts AES31002	<to be read>	AND=ZAA02999
		Verify Telemetry STR2 Health Sts AES32002	<to be read>	AND=ZAA02999
2.2		Declare current STRR healthy		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
2.2.1		<i>If STR1 us currently defined as STRR</i>		<input type="checkbox"/>
		<i>If STR1 is currently declared as Unhealthy but can now be declared Healthy, send the following TC</i>		
		Execute Telecommand <p style="text-align: right;">STR1 healthy defSGM</p> Command Parameter(s) : UnHlthDF86 Cmd AHFH1001 Enable 86 UnHlth DD86Cmd AHFH2001 Enable 86 TC Control Flags : <p style="text-align: right;"> GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - STR1 healthy defSGM	ACYD0109	
		Verify Telemetry <p style="text-align: center;">STR1 Health Sts AES31002</p>	= Healthy	AND=ZAA01999
2.2.2		<i>If STR2 us currently defined as STRR</i>		<input type="checkbox"/>
		<i>If STR2 is currently declared as Unhealthy but can now be declared Healthy, send the following TC</i>		
		Execute Telecommand <p style="text-align: right;">STR2 healthy defSGM</p> Command Parameter(s) : UnHlthDF86 Cmd AHFH1001 Enable 86 UnHlth DD86Cmd AHFH2001 Enable 86 TC Control Flags : <p style="text-align: right;"> GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - STR2 healthy defSGM	ACYF4109	
		Verify Telemetry <p style="text-align: center;">STR2 Health Sts AES32002</p>	= Healthy	AND=ZAA02999
TC Seq. Name : NULL01 (Null Sequence 01)				
TimeTag Type: B Sub Schedule ID: <input type="checkbox"/>				
3		Enable DTM for FD (optional)		Next Step: 4

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		CHECK: If special FD packet is currently being generated via the TM History Display .		
		Verify Packet Reception H TM Data for 9 Stars Com1 Packet Details: APID: 514 Type: 3 Subtype: 26 PI1: 30051 PI2:	HDTM9SC1	
		IF packet is not currently being generated, execute the following TC sequence that first defines and then enables the DTM packet (SPID=240009990) for FD with STR1 & STR2 calibration data		
		Execute Sequence HFAD3FDI Enable DTM_5 for FD v07 Sequence Grouping = - This Sequence Reference is not included in the generated sequence SSID : 0		SEQ
4		IF STRmain = STR1		Next Step: THEN 5 ELSE 10
TC Seq. Name :HRA4S01A (STR2 to Main) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
5		Make STR2 operational and configure mode (H_FCP_AOC_80N2)		Next Step: 6
		NOTE: Step 1, 2, 4 & 5 of H_FCP_AOC_80N2 to be skipped as designation of STRmain is performed in the next step in this procedure		
		Execute Procedure H_FCP_AOC_80N2 Make STR2 operational and configure mode		
6		Disable STR related FDIR checks		Next Step: 7
6.1		Command disabling of STR related FDIR checks		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">EnaChkSTR covariance</p> Command Parameter(s) : EnaChck DF86Cmd AH8F3001 EnaChck DD86Cmd AH8F4001	ACZBV109 Enable 86 Enable 86	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Enable check FDIR - EnaChkSTR covariance		
		Execute Telecommand <p style="text-align: right;">EnaChkSTR continuity</p> Command Parameter(s) : EnaChck DF86Cmd AH8F3001 EnaChck DD86Cmd AH8F4001	ACZBU109 Enable 86 Enable 86	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Enable check FDIR - EnaChkSTR continuity		
		Execute Telecommand <p style="text-align: right;">EnaChkSTR - all</p> Command Parameter(s) : EnaChck DF86Cmd AH8F3001 EnaChck DD86Cmd AH8F4001	ACZBS109 Enable 86 Enable 86	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Enable check FDIR - EnaChkSTR all		
		Execute Telecommand <p style="text-align: right;">EnaChkGYR-STR cross</p> Command Parameter(s) : EnaChck DF86Cmd AH8F3001 EnaChck DD86Cmd AH8F4001	ACZDC109 Enable 86 Enable 86	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Enable check FDIR - EnaChkGYR-STR cross		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand DisChkSTR hk data Command Parameter(s) : DisChk DF86Cmd AH8C1001 Enable 86 DisChk DD86Cmd AH8C2001 Enable 86 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Disable check FDIR - DisChkSTR hk data	ACY7A109	
		Execute Telecommand Fire Disable Check Command Parameter(s) : FireFun DF86Cmd AH8F1001 Enable 86 FireFun DD86Cmd AH8F2001 Enable 86 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - Fire Disable Check	ACZ7M109	
8.2		Verify disabling of STR related FDIR checks		<input type="checkbox"/>
		Verify Telemetry STR alive check AES47001 = Enabled		AND=ZAA06999
		Verify Telemetry STR cont check AES48001 = Enabled		AND=ZAA06999
		Verify Telemetry STR covar check AES49001 = Enabled		AND=ZAA06999
		Verify Telemetry STR loss check AES4A001 = Enabled		AND=ZAA06999
		Verify Telemetry STR hk data chk AES4B001 = Enabled		AND=ZAA06999
		Verify Telemetry GYRSTR xchk AES57002 = Enabled		AND=ZAA06999
9		STR1 Power OFF		Next Step: 15
9.1		Command STR1 switch OFF		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand STR-1 switch OFF Command Parameter(s) : UnitSw DF86 Cmd AH8P1001 Enable 86 UnitSw DD86 Cmd AH8P2001 Enable 86 TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 20 Det. descr. : TC(8,1) Switch ACMS unit on/off - STR-1 switch OFF	ACZ41109	
		Execute Telecommand FireSwitchACMSunitONOFF Command Parameter(s) : FireFun DF86Cmd AH8F1001 Enable 86 FireFun DD86Cmd AH8F2001 Enable 86 TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - FireSwitchACMSunitONOFF	ACZ1M109	
9.2		Verify STR1 OFF		<input type="checkbox"/>
		Verify Telemetry STR1 Pwr Sts AE3X1001 = OFF		(None)
TC Seq. Name :HRA4S01B (STR1 to Main) TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
10		Make STR1 operational and configure mode (H_FCP_AOC_80N1)		Next Step: 11
		NOTE: Step 1, 2, 4 & 5 of H_FCP_AOC_80N1 to be skipped as designation of STRmain is performed in the next step in this procedure		
		Execute Procedure H_FCP_AOC_80N1 Make STR1 operational and configure mode		
11		Disable STR related FDIR checks		Next Step: 12

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">EnaChkSTR covariance</p> Command Parameter(s) : EnaChck DF86Cmd AH8F3001 EnaChck DD86Cmd AH8F4001	ACZBV109 Enable 86 Enable 86	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- --</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Enable check FDIR - EnaChkSTR covariance		
		Execute Telecommand <p style="text-align: right;">EnaChkSTR continuity</p> Command Parameter(s) : EnaChck DF86Cmd AH8F3001 EnaChck DD86Cmd AH8F4001	ACZBU109 Enable 86 Enable 86	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- --</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Enable check FDIR - EnaChkSTR continuity		
		Execute Telecommand <p style="text-align: right;">EnaChkSTR - all</p> Command Parameter(s) : EnaChck DF86Cmd AH8F3001 EnaChck DD86Cmd AH8F4001	ACZBS109 Enable 86 Enable 86	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- --</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Enable check FDIR - EnaChkSTR all		
		Execute Telecommand <p style="text-align: right;">EnaChkGYR-STR cross</p> Command Parameter(s) : EnaChck DF86Cmd AH8F3001 EnaChck DD86Cmd AH8F4001	ACZDC109 Enable 86 Enable 86	
		TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- --</p> Subsch. ID : 20 Det. descr. : TC(8,1) - Enable check FDIR - EnaChkGYR-STR cross		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand DisChkSTR hk data Command Parameter(s) : DisChk DF86Cmd AH8C1001 Enable 86 DisChk DD86Cmd AH8C2001 Enable 86 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,1) - Disable check FDIR - DisChkSTR hk data	ACY7A109	
		Execute Telecommand Fire Disable Check Command Parameter(s) : FireFun DF86Cmd AH8F1001 Enable 86 FireFun DD86Cmd AH8F2001 Enable 86 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - Fire Disable Check	ACZ7M109	
13.2		Verify disabling of STR related FDIR checks		<input type="checkbox"/>
		Verify Telemetry STR alive check AES47001 = Enabled		AND=ZAA06999
		Verify Telemetry STR cont check AES48001 = Enabled		AND=ZAA06999
		Verify Telemetry STR covar check AES49001 = Enabled		AND=ZAA06999
		Verify Telemetry STR loss check AES4A001 = Enabled		AND=ZAA06999
		Verify Telemetry STR hk data chk AES4B001 = Enabled		AND=ZAA06999
		Verify Telemetry GYRSTR xchk AES57002 = Enabled		AND=ZAA06999
14		STR2 Power OFF		Next Step: 15
14.1		Switch STR2 OFF		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand <p style="text-align: right;">STR-2 switch OFF</p> Command Parameter(s) : UnitSw DF86 Cmd AH8F1001 Enable 86 UnitSw DD86 Cmd AH8F2001 Enable 86 TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- --</p> Subsch. ID : 20 Det. descr. : TC(8,1) Switch ACMS unit on/off - STR-2 switch OFF	ACZ43109	
		Execute Telecommand <p style="text-align: right;">FireSwitchACMSunitONOFF</p> Command Parameter(s) : FireFun DF86Cmd AH8F1001 Enable 86 FireFun DD86Cmd AH8F2001 Enable 86 TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- --</p> Subsch. ID : 20 Det. descr. : TC(8,4) Fire Command - FireSwitchACMSunitONOFF	ACZ1M109	
14.2		Verify STR2 OFF		<input type="checkbox"/>
		Verify Telemetry <p style="text-align: right;">STR2 Pwr Sts AE3X3001</p> <p style="text-align: right;">= OFF</p>		(None)
TC Seq. Name : NULL02 (Null Sequence 02) TimeTag Type: B Sub Schedule ID: <input type="checkbox"/>				
15		Disable DTM for FD		Next Step: END
		NOTE: The following TC sequence first disables and then clears the DTM packet (SPID=240009990) for FD with STR1 & STR2 calibration data		
		Execute Sequence HFAD3FDJ Disable DTM_5 for FD v07 Sequence Grouping = - This Sequence Reference is not included in the generated sequence SSID : 0		SEQ

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<p><i>NOTE:</i> The disabling of this packet can be checked/confirmed on the MCS via the TM History Display.</p>		
End of Procedure				