CRS health check
File: H_FCP_AOC_5008.xls
Author: dsalt-hp

Procedure Summary

Objectives

The objective of this Herschel ACMS procedure is to lists all activities necessary to assess the health and status of the CRS.

The procedure involves the following activities:
- check CRS health
- check CRS temperature
- check CRS rate limits

Summary of Constraints

n/a

Spacecraft Configuration

Start of Procedure

n/a

End of Procedure

n/a

Reference File(s)

Input Command Sequences

Output Command Sequences

Referenced Displays

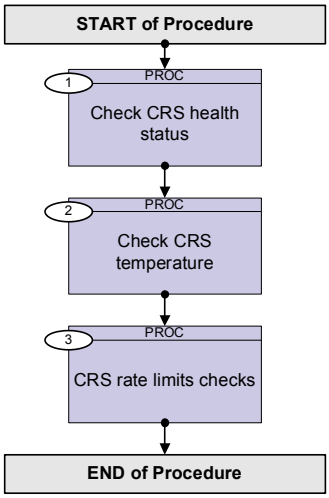
ANDs **GRDs** **SLDs**
ZAA02999
ZAA00999

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
03/08/08	1	1	Created	dsalt-hp	

CRS health check
File: H_FCP_AOC_5008.xls
Author: dsalt-hp

Procedure Flowchart Overview



CRS health check
File: H_FCP_AOC_5008.xls
Author: dsalt-hp

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		PROC Procedure Properties *SSID :*		
1		*Check CRS health status*		Next Step: 2
		Verify Telemetry **CRS1 Health Sts** **AES33002**	**= Healthy**	AND=ZAA02999
		Verify Telemetry **CRS2 Health Sts** **AES34002**	**= Healthy**	AND=ZAA02999
2		*Check CRS temperature*		Next Step: 3
2.1		*CRS1 temperature related checks*		□
		Verify Telemetry **CRS-1 Temp** **AMRT1034**	**>= 268.0 K** **<= 328.0 K**	AND=ZAA02999
2.1.1		*CRS temperature 'slightly' out of range*		□
		Verify Telemetry **CRS-1 Temp** **AMRT1034**	**> 263.0 K** **< 268.0 K**	AND=ZAA02999
		OR Verify Telemetry **CRS-1 Temp** **AMRT1034**	**> 328.0 K** **< 333.0 K**	AND=ZAA02999
2.1.2		*Keep temperature monitoring active*		□
		CRS1 not yet to be flagged as Unhealthy		
2.1.3		*CRS temperature 'really' out of range*		□
		Verify Telemetry **CRS-1 Temp** **AMRT1034**	**<= 263.0 K**	AND=ZAA02999
		OR Verify Telemetry **CRS-1 Temp** **AMRT1034**	**>= 333.0 K**	AND=ZAA02999
2.1.4		*Contingency*		□

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Declare CRS1 unhealthy and if used in Survival configuration change to CRS2		
2.2		*CRS2 temperature related checks*		□
		Verify Telemetry **CRS-2 Temp** **AMRT2035**	**>= 268.0 K** **<= 328.0 K**	AND=ZAA02999
2.2.1		*CRS temperature 'slightly' out of range*		□
		Verify Telemetry **CRS-2 Temp** **AMRT2035**	**> 263.0 K** **< 268.0 K**	AND=ZAA02999
		OR Verify Telemetry **CRS-2 Temp** **AMRT2035**	**> 328.0 K** **< 333.0 K**	AND=ZAA02999
2.2.2		*Keep temperature monitoring active*		□
		CRS2 not yet to be flagged as Unhealthy		
2.2.3		*CRS temperature 'really' out of range*		□
		Verify Telemetry **CRS-2 Temp** **AMRT2035**	**<= 263.0 K**	AND=ZAA02999
		OR Verify Telemetry **CRS-2 Temp** **AMRT2035**	**>= 333.0 K**	AND=ZAA02999
2.2.4		*Contingency*		□
		Declare CRS2 unhealthy and if used in Survival configuration change to CRS1		
3		*CRS rate limits checks*		Next Step: END
3.1		*CRS1 related checks*		□
3.1.1		*Rates out of range*		□
		Verify Telemetry **CRS1 rate com X** **AERRA001**	**> |0.148| rad/s**	AND=ZAA02999

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		OR Verify Telemetry **CRS1 rate com Y AERRB001**	**> |0.035| rad/s**	AND=ZAA02999
		OR Verify Telemetry **CRS1 rate com Z AERRC001**	**> |0.035| rad/s**	AND=ZAA02999
3.1.2		*Contingency*		
		Cross check with CRS2 (if healthy) If in SCM, recompute the CRS bias before declaring the unit unhealthy		
3.1.3		*Check that the rates are within the estimated ones taking into account the accepted CRS bias (+/- 0.000523 rd/s) and the sign inversion of the rates vs the estimated ones.*		
		Verify Telemetry **Est ang rate X AESR7001**	**(record value)**	AND=ZAA00999
		Verify Telemetry **CRS1 rate com X AERRA001**	**<= (AESR7001 - 0.000523 rd/s) >= (AESR7001 + 0.000523 rd/s)**	AND=ZAA02999
		Verify Telemetry **Est ang rate Y AESR8001**	**(record value)**	AND=ZAA00999
		Verify Telemetry **CRS1 rate com Y AERRB001**	**<= (AESR8001 - 0.000523 rd/s) >= (AESR8001 + 0.000523 rd/s)**	AND=ZAA02999
		Verify Telemetry **Est ang rate Z AESR9001**	**(record value)**	AND=ZAA00999
		Verify Telemetry **CRS1 rate com Z AERRC001**	**<= (AESR9001 - 0.000523 rd/s) >= (AESR9001 + 0.000523 rd/s)**	AND=ZAA02999
3.2		*CRS2 related checks*		
3.2.1		*Rates out of range*		
		Verify Telemetry **CRS2 rate com X AERRD001**	**> |0.148| rad/s**	AND=ZAA02999

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		OR Verify Telemetry **CRS2 rate com Y AERRE001**	**> |0.035| rad/s**	AND=ZAA02999
		OR Verify Telemetry **CRS2 rate com Z AERRF001**	**> |0.035| rad/s**	AND=ZAA02999
3.2.2		*Contingency*		
		Cross check with CRS1 (if healthy) If in SCM, recompute the CRS bias before declaring the unit unhealthy		
3.2.3		*Check that the rates are within the estimated ones taking into account the accepted CRS bias (+/- 0.000523 rd/s) and the sign inversion of the rates vs the estimated ones.*		
		Verify Telemetry **Est ang rate X AESR7001**	**(record value)**	AND=ZAA00999
		Verify Telemetry **CRS2 rate com X AERRD001**	**<= (AESR7001 - 0.000523 rd/s) >= (AESR7001 + 0.000523 rd/s)**	AND=ZAA02999
		Verify Telemetry **Est ang rate Y AESR8001**	**(record value)**	AND=ZAA00999
		Verify Telemetry **CRS2 rate com Y AERRE001**	**<= (AESR8001 - 0.000523 rd/s) >= (AESR8001 + 0.000523 rd/s)**	AND=ZAA02999
		Verify Telemetry **Est ang rate Z AESR9001**	**(record value)**	AND=ZAA00999
		Verify Telemetry **CRS2 rate com Z AERRF001**	**<= (AESR9001 - 0.000523 rd/s) >= (AESR9001 + 0.000523 rd/s)**	AND=ZAA02999
		End of Procedure		