

SpireEngCheckPM Daily
 File: H_COP_SPI_CHK.S.xls
 Author: L.Lucas-hp



Procedure Summary

Objectives

At the behest of SPIRE ICC this procedure to check the SPIRE Memory area in case of bit-flips is to be performed during every DTCP, provided SPIRE is in REDY mode.

Based on procedure:
 Name: SpireEngCheckPM
 Version number:1
 Generated: 14 July 2010

Summary of Constraints

n/a

Spacecraft Configuration

Start of Procedure

SPIRE mode = REDY

End of Procedure

SPIRE mode = REDY

Reference File(s)

Input Command Sequences

Output Command Sequences

HCSCHKSS
 HCSCHKSF

Referenced Displays

ANDs **GRDs** **SLDs**
 ZAZD4999
 SAM4_500

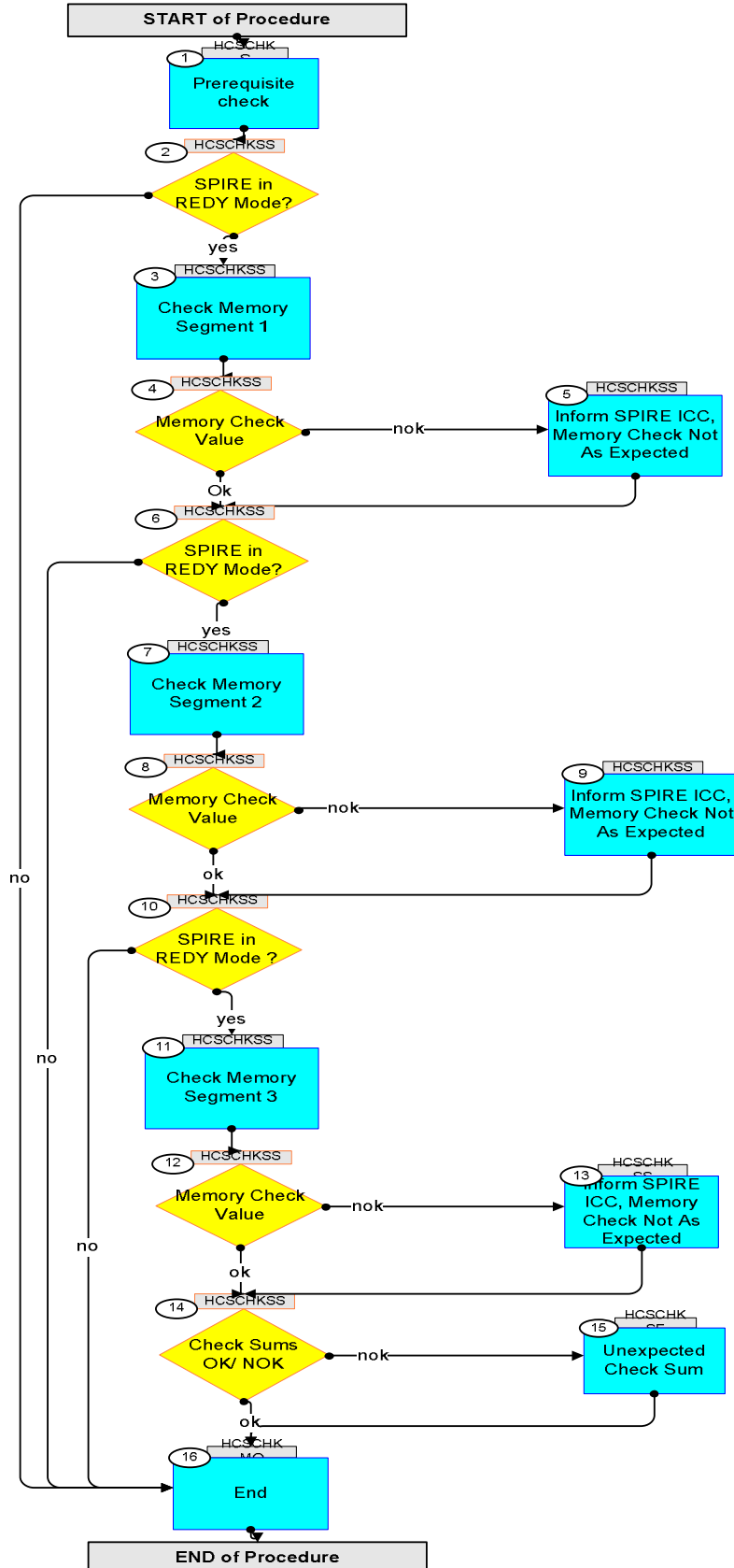
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
16/07/2010	3.1	1	Created	L.Lucas-hp	

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Procedure Flowchart Overview



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Procedure Flowchart Overview

END of Procedure

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
<p><i>TC Seq. Name :HCSCHKs (DailyCheckMemSegs)</i></p> <p><i>TimeTag Type: Y</i> <i>Sub Schedule ID:</i></p> <p style="text-align: center;">□</p>				
1		Prerequisite check		Next Step: 2
		SPIRE MUST be in REDY mode to perform this procedure		
		Ensure the following displays are avialable to you, AND SAM4_500: MEMORY CHECK REPORT TM Packet History		
		Between sending each command TM must be checked. Note the TM value will be overwritten each time the command is sent, so it is important to check the TM between sending each command.		
1.1		Check SPIRE Mode		□
		Verify SPIRE Mode before continuing MODE SM00M500	= REDY	AND=ZAZD4999
<p><i>TC Seq. Name :HCSCHKSS (DailyCheckMemSegment)</i></p> <p><i>TimeTag Type: B</i> <i>Sub Schedule ID:</i></p> <p style="text-align: center;">□</p>				
2		SPIRE in REDY Mode?		Next Step: yes 3 no 16
		SPIRE MUST be in REDY mode to perform these memory checks		
		Verify SPIRE Mode before continuing MODE SM00M500	= REDY	AND=ZAZD4999
		Make note of this value for later comparison CHK_MCHK SMMBN500		AND=SAM4_500
3		Check Memory Segment 1		Next Step: 4
		Verify SPIRE Mode before continuing MODE SM00M500	= 512 <dec>	AND=ZAZD4999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	CHECK_MEMORY_RAW CHECK_MEMORY Command Parameter(s) : MEMORYID_CHECKMEM SPM9N500 STARTADDR_CHECKMEM SPMAN500 NSAU_CHECKMEM SPMBN500 TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 370 Det. descr. : CHECK MEMORY USING ABSOLUTE ADDRESSES	SCM02500 0 <hex> 4000 <hex> 174B <hex>	
		After sending this command, wait 10 seconds; then check for reception of a 1,7 in the Packet History and the new value of TM SMMBN500		
4		Memory Check Value		Next Step: nok 5 Ok 6
		Is Memory Check Value As Expected?		
		Verify New Value CHK_MCHK SMMBN500	= E9C4 <hex>	AND=SAM4_500
5		Inform SPIRE ICC, Memory Check Not As Expected		Next Step: 6
		If the value of TM SMMBN500 is not a expected, please inform SPIRE ICC.		
6		SPIRE in REDY Mode?		Next Step: yes 7 no 16
		SPIRE MUST be in REDY mode to perform these memory checks		
		Verify SPIRE Mode before continuing MODE SM00M500	= REDY	AND=ZAZD4999
		Make note of this value for later comparison CHK_MCHK SMMBN500		AND=SAM4_500
7		Check Memory Segment 2		Next Step: 8

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.08	CHECK_MEMORY_RAW CHECK_MEMORY Command Parameter(s) : MEMORYID_CHECKMEM SPM9N500 STARTADDR_CHECKMEM SPMAN500 NSAU_CHECKMEM SPMBN500 TC Control Flags : GBM IL DSE --Y -- -- Subsch. ID : 370 Det. descr. : CHECK MEMORY USING ABSOLUTE ADDRESSES	SCM02500 0 <hex> 6000 <hex> FFFF <hex>	
		After sending this command, wait 10 seconds; then check for reception of a 1,7 in the Packet History and the new value of TM SMMBN500		
8		Memory Check Value		Next Step: nok 9 ok 10
		Is Memory Check Value As Expected?		
		Verify New Value CHK_MCHK SMMBN500	= 5DC1 <hex>	AND=SAM4_500
9		Inform SPIRE ICC, Memory Check Not As Expected		Next Step: 10
		If the value of TM SMMBN500 is not a expected, please inform SPIRE ICC.		
10		SPIRE in REDY Mode ?		Next Step: yes 11 no 16
		SPIRE MUST be in REDY mode to perform these memory checks		
		Verify SPIRE Mode before continuing MODE SM00M500	= REDY	AND=ZAZD4999
		Make note of this value for later comparison CHK_MCHK SMMBN500		AND=SAM4_500
11		Check Memory Segment 3		Next Step: 12

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.08	CHECK_MEMORY_RAW CHECK_MEMORY Command Parameter(s) : MEMORYID_CHECKMEM SPM9N500 STARTADDR_CHECKMEM SPMAN500 NSAU_CHECKMEM SPMBN500 TC Control Flags : GBM IL DSE --Y -- --- Subsch. ID : 370 Det. descr. : CHECK MEMORY USING ABSOLUTE ADDRESSES	SCM02500 0 <hex> 15FFF <hex> 59 <hex>	
		After sending this command, wait 10 seconds; then check for reception of a 1,7 in the Packet History and the new value of TM SMMBN500		
12		Memory Check Value		Next Step: nok 13 ok 14
		Is Memory Check Value As Expected?		
		Verify New Value CHK_MCHK SMMBN500	= 305F <hex>	AND=SAM4_500
13		Inform SPIRE ICC, Memory Check Not As Expected		Next Step: 14
		If the value of TM SMMBN500 is not a expected, please inform SPIRE ICC.		
14		Check Sums OK/ NOK		Next Step: nok 15 ok 16
		Were ALL of the Check Sum values as expected?		
		If any memory check value was not as expected the SPIRE SubSchedule Must be disabled		
TC Seq. Name :HCSCHKSF (MemoryCheckSegFails)				
TimeTag Type: N Sub Schedule ID: □				
15		Unexpected Check Sum		Next Step: 16
		If any checksum was not as expected, the SPIRE subschedule must be disbled and SPIRE ICC informed		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch																
		Disabling the subschedule is achieved in three stages; report and check status of subschedules, disable SPIRE subschedules (100 and 370), check status of subschedules.																		
15.1		Check the OBDQ Display		<input type="checkbox"/>																
		Check the OBDQ Display to confirm the current status of the subschedules.																		
15.2		Report the Status of the SubSchedules		<input type="checkbox"/>																
		Execute Telecommand <p style="text-align: right;">RetStatusOfCmdSchedule</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : TEMPLATE ReportStatusOfCmdSchedule, TC(11,18), no appl. data	DCT25170																	
		Check the OBQD and note which subschedules are disabled.																		
15.3		Disable the SPIRE Subschedule (and meta).		<input type="checkbox"/>																
		Execute Telecommand <p style="text-align: right;">DisableRelOfTcs_Templ</p> Command Parameter(s) : <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">N_Repetition</td> <td style="width: 20%;">DH041170</td> <td style="width: 20%;">2 <dec></td> <td style="width: 30%;"></td> </tr> <tr> <td>SubscheduleId</td> <td>DH053170</td> <td>100 <dec></td> <td></td> </tr> <tr> <td>SubscheduleId</td> <td>DH053170</td> <td>370 <dec></td> <td></td> </tr> <tr> <td>M_nrOfApidS</td> <td>DH054170</td> <td>0 <dec></td> <td></td> </tr> </table> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : TEMPLATE DisableReleaseOfTcs, TC(11,2)	N_Repetition	DH041170	2 <dec>		SubscheduleId	DH053170	100 <dec>		SubscheduleId	DH053170	370 <dec>		M_nrOfApidS	DH054170	0 <dec>		DCT23170	
N_Repetition	DH041170	2 <dec>																		
SubscheduleId	DH053170	100 <dec>																		
SubscheduleId	DH053170	370 <dec>																		
M_nrOfApidS	DH054170	0 <dec>																		
15.4		Report the Status of the SubSchedules		<input type="checkbox"/>																
		Execute Telecommand <p style="text-align: right;">RetStatusOfCmdSchedule</p> TC Control Flags : <p style="text-align: right;">GBM IL DSE --Y -- ---</p> Subsch. ID : 10 Det. descr. : TEMPLATE ReportStatusOfCmdSchedule, TC(11,18), no appl. data	DCT25170																	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Wait ~ 12 seconds, if the OBDQ does not update, click Refresh/Reload/Update. Check the OBQD and check subschedules 100 and 370 have been disabled.		
15.5		Inform SPIRE ICC		<input type="checkbox"/>
		Inform SPIRE ICC that a Memory check failed and the SPIRE subschedule has been disabled.		
<p>TC Seq. Name :HCSCHKMQ (CheckMemoryQuit)</p> <p>TimeTag Type: Sub Schedule ID:</p> <p><input type="checkbox"/></p>				
16		End		Next Step: END
		That's All folks! See you again tomorrow		
End of Procedure				