

Update STR Covariance Check related parameters  
 File: H\_FCP\_AOC\_DCOV.xls  
 Author: dsalt-hp



## Procedure Summary

### Objectives

The objective of this Herschel ACMS procedure is to update values related to the STR Covariance Check in the OBDB.

The procedure involves the following activities:

- sending values via dedicated TCs
- check OBDB for updated values via DTM for OBDB4 & OBDB8 or dumps

The procedure specifies a series of OBDB loads necessary to update OBDB parameters related to the STR Covariance Check.

### Summary of Constraints

SOM approval must be obtained before executing this procedure.

No other ACC critical command armed.

### Spacecraft Configuration

**Start of Procedure**

n/a

**End of Procedure**

n/a

### Reference File(s)

**Input Command Sequences**

**Output Command Sequences**

HFADCOVA

### Referenced Displays

ANDs      GRDs      SLDs

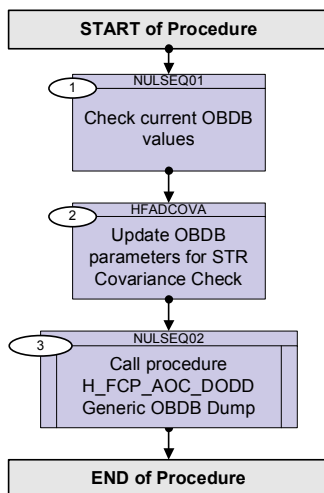
### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
08/03/10	3	1	Created	dsalt-hp	

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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>																
<p><i>TC Seq. Name : NULSEQ01 (Null Sequence 01)</i></p> <p><i>TimeTag Type: B</i>  <i>Sub Schedule ID:</i></p> <p style="text-align: center;">□</p>																
1		Check current OBDB values		Next Step: 2												
		Check the values of parameters related to the STR Covariance Check: V_NOM_FDIR_STR_COVAR_SPIKE V_NOM_FDIR_STR_COV_QUAL														
		NOTE: To view <b>initial values</b> of these parameters (to be updated in Step 2), enable DTM packets via sequences identified in Step 3.														
<p><i>TC Seq. Name : HFADCOVA (Update STR Covariance Check)</i></p> <p><i>TimeTag Type:</i>  <i>Sub Schedule ID:</i></p> <p style="text-align: center;">□</p>																
2		Update OBDB parameters for STR Covariance Check		Next Step: 3												
		Uplink onboard the parameters determined in the previous step.														
		Note that STR Covariance Check details for Quality Index and Spike Filter use different data formats and are not stored in consecutive locations in the OBDB and so can not be loaded via a single TC.														
2.1		Activate loading		□												
	ET=+00.00.00 UT=+	Execute Telecommand <p style="text-align: center;"><b>Start database loading</b></p> <p><i>Command Parameter(s) :</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 40%;">ASW Function ID</td> <td>AHFUN001</td> <td>DB loading (Def)</td> </tr> <tr> <td>DbLoad DF86 Cmd</td> <td>AH8D1001</td> <td>Enable 86</td> </tr> <tr> <td>DbLoad DD86 Cmd</td> <td>AH8D2001</td> <td>Enable 86</td> </tr> <tr> <td>DbLoad Nr Cmds</td> <td>AHFDL001</td> <td>2 &lt;dec&gt;</td> </tr> </table> <p><i>TC Control Flags :</i></p> <p style="text-align: center;">GBM IL DSE --Y -- --</p> <p><i>Subsch. ID : 20</i>  <i>Det. descr. : TC_START_DATABASE_LOAD</i></p>	ASW Function ID	AHFUN001	DB loading (Def)	DbLoad DF86 Cmd	AH8D1001	Enable 86	DbLoad DD86 Cmd	AH8D2001	Enable 86	DbLoad Nr Cmds	AHFDL001	2 <dec>	ACDS1001	
ASW Function ID	AHFUN001	DB loading (Def)														
DbLoad DF86 Cmd	AH8D1001	Enable 86														
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DbLoad Nr Cmds	AHFDL001	2 <dec>														

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		Following the Start_database_loading command the following commands must each be sent within C_ALL_OPS_ASW_CRIT_CMD_TIMEOUT (=180 seconds default) of the previous command to avoid the started status of the function timing-out.		
2.2		Load values		□
	ET+=00.00.02 UT=+	Execute Telecommand  <b>Load databaseSignInt</b>  Command Parameter(s) : DbLoad DF86 Cmd            AH8D1001      Enable 86 DbLoad DD86 Cmd            AH8D2001      Enable 86 DbLoad StartInd            AHFDS001      1922 <dec> DbLoad Nr Wrds             AHFDN001      1 <dec> (Def) DbLoad Dwd SInt             AHFDV001      28800 <dec>  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,4) - Load database Signed Integer	ACZTV109	
	ET+=00.00.02 UT=+	Execute Telecommand  <b>Load databaseReal</b>  Command Parameter(s) : DbLoad DF86 Cmd            AH8D1001      Enable 86 DbLoad DD86 Cmd            AH8D2001      Enable 86 DbLoad StartInd            AHFDS001      962 <dec> DbLoad Nr Wrds             AHFDN001      1 <dec> (Def) DbLoad Dwd Real             AHFDZ001      0.05 <dec>  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC(8,4) - Load database Real	ACZTY109	
2.3		Activate values		□
	ET+=00.00.05 UT=+	Execute Telecommand  <b>Fire critical command</b>  Command Parameter(s) : FireFun DF86Cmd            AH8F1001      Enable 86 FireFun DD86Cmd            AH8F2001      Enable 86 FireFun CritFID             AHFFH001      201 <dec>  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 20 Det. descr. : TC_FIRE_COMMAND	ACFC1001	
		Load database commands complete CEV correctly		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<p>TC Seq. Name : NULSEQ02 (Null Sequence 02)</p> <p>TimeTag Type:            Sub Schedule ID:  <input type="checkbox"/></p>				
3		Call procedure H_FCP_AOC_DODD Generic OBDB Dump		Next Step: END
		<p>NOTE:            This procedure enables a direct dump of the OBDB from RAM or Safe-Guard Memory (SGM), as well as reading the OBDB via diagnostic telemetry (DTM) packets</p>		
		<p><u>Relevant details for use with H FCP AOC DODD</u></p> <p>Based upon the latest ASW ICD (H-P-4-TASW-IF-0002, Issue 4 B), this procedure loads the following parameters into specific OBDB offset locations in RAM:  <b>V_NOM_FDIR_STR_COV_QUAL</b>            at offsets 962  <b>V_NOM_FDIR_STR_COVAR_SPIKE</b>            at offsets 1922            These are located in Block 4 &amp; 8 of the OBDB, respectively</p> <p>These parameters are <b>not copied in SGM.</b></p>		
3.1		Dump via DTM		<input type="checkbox"/>
		<p><u>Relevant details for use with H FCP AOC DODD</u></p> <p>The following parameters  <b>V_NOM_FDIR_STR_COV_QUAL</b>  <b>V_NOM_FDIR_STR_COVAR_SPIKE</b>            are located in Block 4 &amp; 8 of the OBDB, respectively</p>		
		Use sequence <a href="#">HFADODDD</a> & <a href="#">HFADODDH</a>		
		<p>NOTE:            The contents of diagnostic packet A3DH0BDB4109 {DTM with Herschel OBDB data4} are spread over a group of 4 monitoring displays:</p> <p>ZAZ6C999 DTMOBDB4_1            ZAZ6D999 DTMOBDB4_2            ZAZ6E999 DTMOBDB4_3  <b>ZAZ6F999 DTMOBDB4_4</b> &lt;- values are in this display</p>		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		<p>NOTE:            The contents of diagnostic packet A3DH0BDB8109 {DTM with Herschel OBDB data8} are spread over a group of 4 monitoring displays:</p> <p>ZAZ6S999 DTMOBDB8_1  <b>ZAZ6T999 DTMOBDB8_2 &lt;- values are in this display</b>            ZAZ6U999 DTMOBDB8_3            ZAZ6V999 DTMOBDB8_4</p>		
		<p>NOTE:            This step enables diagnostic packets that contain data from specific blocks of the OBDB, where each block contains 250 onboard database parameters.</p> <p>The Herschel onboard database currently contains 2134 parameters and there are 8 diagnostic packets defined to cover the first 2000 entries. In HP-4-TASW-IF-0002 (ACC ASW_ICD) section 6.1 you can find a list of Herschel OBDB parameters ordered by offset.</p>		
3.2		Dump from RAM		□
		<p><u>Relevant details for use with H_FCP_AOC_DODD</u></p> <p>Based upon the latest ASW ICD (H-P-4-TASW-IF-0002, Issue 4 B), this procedure loads the following parameters into specific OBDB offset locations in <b>RAM</b>:</p> <p>V_NOM_FDIR_STR_COV_QUAL            at offsets 962            V_NOM_FDIR_STR_COVAR_SPIKE            at offsets 1922</p> <p>The <u>absolute address</u> of offset 962 is therefore:  <b>020C = Memory ID</b>  <b>2128 = Start Address</b></p> <p>The <u>absolute address</u> of offset 1922 is therefore:  <b>020C = Memory ID</b>  <b>3028 = Start Address</b></p>		
		<p><b>Use sequence HFADODDL</b>            to dump <u>all</u> the OBDB in RAM, or edit:            Start Address = <b>1220</b>            Length = <b>8752</b></p>		

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		<p><i>NOTE:</i>            The RAM memory address for a parameter with a given OBDB ID can be calculated as follows:            RAM address = OBDB start address + parameter offset;            OBDB start address = address of Asw_DatabaseManager_Obj + 12;            parameter offset = OBDB ID * 4.</p> <p>Parameter ID's are listed in the ASW ICD (H-P-4-TASW-IF-002).</p> <p>Asw_Databasemanager_Obj is an ASW container structure used in the management of the OBDB and its address has to be obtained from the linker memory map valid for the software build currently used onboard.</p>		
3.3		Dump from SGM		<input type="checkbox"/>
		<p><u>Relevant details for use with H_FCP_AOC_DODD</u></p> <p><b>This step can be ignored</b> - parameters not copied to SGM</p>		
		<p><i>NOTE:</i>            The address of a parameter with a given ID can be calculated as follows:</p> <p>SGMA            Address = 0xBA0000 + (ParamID-1) * 4</p> <p>SGMB            Address = 0xEA0000 + (ParamID-1) * 4</p> <p>Parameter ID's refer to the listing of SGM OBDB parameters in the ASW ICD (H-P-4-TASW-IF-0002) and are not the same as the ID's in the RAM OBDB.</p>		
<b>End of Procedure</b>				