Modify CIR flag in OBDB
File: H_FCP_AOC_DCIR.xls
Author: dsalt-hp

Procedure Summary

Objectives

The objective of this Herschel ACMS procedure is to modify the CIR detection status parameters within the ACMS onboard database.

This procedure involves the following activities:
- selection of activity type (Disable or Enable)
- RAM dump of current CIR detection status parameters
- update of OBDB parameters for CIR detection status
- RAM dump of updated CIR detection status parameters

NOTE: The CIR detection status is indicated by a two OBDB parameters (boolean), one for the Nominal signal and one for the Redundant signal, located at OBDB Offset 2183 and 2184 respectively for ACC ASWr4.1.

Summary of Constraints

Main Constraints
- Spacecraft should be in ground visibility to allow immediate dumping and verification of portions of the OBDB modified by the procedure
- SOM approva/authorisation to uplink relevant sequence

Spacecraft Configuration

Start of Procedure

S/C in any nominal mode with default CIR detection status

End of Procedure

S/C in same nominal mode with updated CIR detection status

Reference File(s)

Input Command Sequences

HFADODDL

Output Command Sequences

HFADCIRA
HFADCIRB

Referenced Displays

ANDs **GRDs** **SLDs**

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
16/07/09		1	Created	dsalt-hp	
18/09/09		2	Reference to sequence for dumping all of the OBDB, rather than specific words, now used in Step 2, 4, 5 & 7	dsalt-hp	

Status : Version 4 - Unchanged
Last Checkin: 30/09/09

21/09/09		3	Absolute address of offsets added in notes of Step 2, 4, 5, 7 and repetition of OBSM dump activities removed from Step 4, 5, 7	dsalt-hp	
30/09/09	2.5	4	TCs to dump just 2 words included again to give options for both a short and a full dump of the OBDB in Step 2, 4, 5, 7	dsalt-hp	

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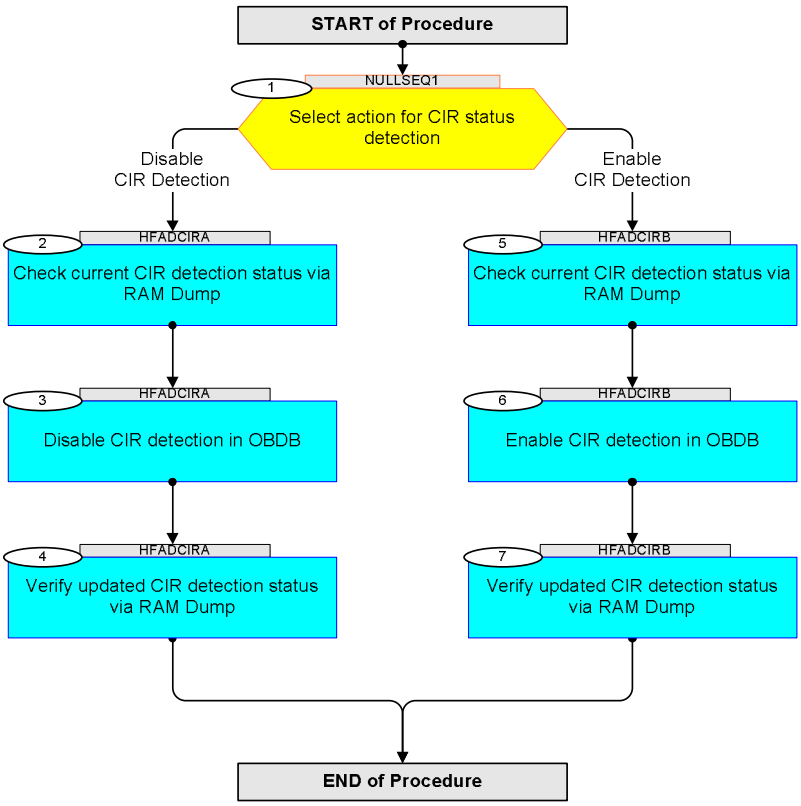
Procedure Flowchart Overview



Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		TC Seq. Name :NULLSEQ1 ( ) *TimeTag Type:* N *Sub Schedule ID:*		
1		*Select action for CIR status detection*		Next Step: Disable CIR Detection 2 Enable CIR Detection 5
		The CIR detection status can be set to either one of two states, to be selected by the user: *to DISABLE CIR detection - go to Step 2* *to ENABLE CIR detection - go to Step 5*		
		NOTE: ***The CIR detection status is indicated by a two OBDB parameters (boolean), one for the Nominal signal and one for the Redundant signal, located at OBDB Offset 2183 and 2184 respectively for ACC ASWr4.1.***		
		TC Seq. Name :HFADCIRA (Disable_Detection) *TimeTag Type:* N *Sub Schedule ID:*		
2		*Check current CIR detection status via RAM Dump*		Next Step: 3
		This step dumps the onboard database area in RAM. Modifications are always made in the RAM copy of the onboard database, that's why it is good practise to dump this area before and after doing an onboard database update. BACKGROUND: H-P-4-TASW-IF-0002 {ACC ASW ICD}, section 6.1, contains the table of Herschel onboard database parameters available in RAM. The location of the onboard database in RAM is tied to the location of the ASW_DatabaseManagerObj variable to be found in image.syms file of the software build (under \ACMS\ASW_3.4_b2\Code\OBSP_3_4\B002\AAE\image.syms). Add **12** locations to obtain the offset for the index 0 parameter. Use this as the start address of the dump.		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		NOTE: *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.* *Parameter ID's are listed in the ASW ICD (H-P-4-TASW-IF-002).* *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.*		
2.1		*Prepare OBSM Desktop*		
		Prepare the OBSM desktop application for the memory download, by executing the following steps: -> Open 'OBSM Desktop' -> Select 'Image' in menubar -> Select 'Monitor' in pulldown menu -> New window opens, called 'Image Catalog' -> In the new window, press the 'Device' button in the 'Filter' toolbar (bottom left corner)		
		-> New window opens, called 'Device Catalog' -> Select ACCROBDB 'ACC RAM OBDB'. Hit OK. -> Now all available memory images for the selected device appear in the 'Image Catalog'. Select the image that relates to the onboard image that is to be dumped, this is generally the last entry in the list. Hit OK. -> Another window will appear that will display all mismatches between dumped values and the ground image, once the download is running. Check the 'LIVE' button is highlighted.		
2.2		*Uplink Sequence HVADODDL*		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Sequence **HFADODDL ObdbDumpFromRam v03** Sequence Grouping = - This Sequence Reference is not included in the generated sequence *SSID : 0*		**SEQ**
		NOTE1: *This instance of the TC dumps **all** parameters in **OBDB** (i.e. parameter offset 0 to 2187 for **ASWr4.1**), which includes detection status parameters for CIR Nominal & Redundant signals at OBDB offsets 2183 & 2184* *NOTE2:* *Offset 2183 is at address 343C <HEX> (13372 <DEC>)* *Offset 2184 is at address 3440 <HEX> (13376 <DEC>)*		
		OR... *downlink just these 2 words using the following TC and read their values directly via the TM Packet History display*		
		Execute Telecommand **Dump Memory** *Command Parameter(s) :* **Memory ID AH6M0109** **Start Address AH6M1109** **Length SAU AH6M3109** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses	**AC063109** **020C <hex>** **343C <hex>** **8 <dec>**	
2.3		*Monitor Memory Download*		
		Verify Packet Reception **Memory Dump - Absolute Addresses - SAU 8** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**MemDmpAbsAdd** **512** **6** **6**	

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		NOTE 1: While the monitor screen is up, any areas of memory which are declared monitorable shall trigger an alarm if they are different in the dump packet to the ground image. This will be displayed in the EVENT window at the bottom of the screens and audibly. NOTE 2: All differences will appear in the gridded area. However the refresh of this screen is poor. After all the dump packets are down, hit the STOP and then the LIVE button. All the mismatches found so far will be displayed.		
		NOTE 3: Only data declared monitorable in the MODEL will trigger an alarm. NOTE 4: If it is wanted to dump the same areas of memory several times, or process in retrieval areas of memory several times, it is advisable to close and restart the MONITOR window between each task, as the comparison base image is often updated with the differences.		
2.4		*Update Ground Image*		□
		If it desired to store the image updated with the mismatches for reference or later analysis then continue here. WARNING: In a lot of cases where there are no mismatches or only mismatches in variable data areas it is not worth saving the image.		
		-> On the MONITOR window, displaying the mismatches, enter a correct description in the description area. More detailed text can be added by hitting the description button. -> Check the model is correct. -> Goto Image, Save New ID		
3		*Disable CIR detection in OBDB*		Next Step: 4
3.1		*Uplink Sequence HFADCIRA*		□

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **Start database loading** *Command Parameter(s) :* **ASW Function ID AHFUN001** **DbLoad DF86 Cmd AH8D1001** **DbLoad DD86 Cmd AH8D2001** **DbLoad Nr Cmds AHFDL001** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC_START_DATABASE_LOAD	**ACDS1001** **DB loading** (Def) **Enable 86** **Enable 86** **1 <dec>**	
		Execute Telecommand **Load databaseBoolean** *Command Parameter(s) :* **DbLoad DF86 Cmd AH8D1001** **DbLoad DD86 Cmd AH8D2001** **DbLoad StartInd AHFDS001** **DbLoad Nr Wrds AHFDN001** **DbLoad Dwd Bool AHFDY001** **DbLoad Dwd Bool AHFDY001** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(8,4) - Load database Boolean	**ACZTX109** **Enable 86** **Enable 86** **2183 <dec>** **2 <dec>** **0 <dec>** **0 <dec>**	
		Execute Telecommand **Fire Start DB loading** *Command Parameter(s) :* **FireFun DF86Cmd AH8F1001** **FireFun DD86Cmd AH8F2001** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(8,4) Fire Command - Fire Start DB loading	**ACZ5L109** **Enable 86** **Enable 86**	
4		*Verify updated CIR detection status via RAM Dump*		Next Step: END
		See start of Step 2 for details of this activity.		
4.1		*Prepare OBSM Desktop*		
		See start of Step 2.1 for details of this activity.		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
4.2		*Uplink Sequence HVADODDL*		
		Execute Sequence **HFADODDL ObdbDumpFromRam v03** Sequence Grouping = - This Sequence Reference is not included in the generated sequence *SSID : 0*		**SEQ**
		NOTE1: *This instance of the TC dumps **all** parameters in **OBDB** (i.e. parameter offset 0 to 2187 for **ASWr4.1**), which includes detection status parameters for CIR Nominal & Redundant signals at OBDB offsets 2183 & 2184* *NOTE2:* *Offset 2183 is at address 343C <HEX> (13372 <DEC>)* *Offset 2184 is at address 3440 <HEX> (13376 <DEC>)*		
		OR... *downlink just these 2 words using the following TC and read their values directly via the TM Packet History display*		
		Execute Telecommand **Dump Memory** *Command Parameter(s) :* **Memory ID AH6M0109** **Start Address AH6M1109** **Length SAU AH6M3109** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses	**AC063109** **020C <hex>** **343C <hex>** **8 <dec>**	
4.3		*Monitor Memory Download*		
		Verify Packet Reception **Memory Dump - Absolute Addresses - SAU 8** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**MemDmpAbsAdd** **512** **6** **6**	
		See Step 2.3 for details of this activity.		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
4.4		*Update Ground Image*		
		See Step 2.4 for details of this activity.		
		TC Seq. Name :HFADCIRB (Enable_Detection) *TimeTag Type: N* *Sub Schedule ID:*		
5		*Check current CIR detection status via RAM Dump*		Next Step: 6
		See Step 2 for details of this activity.		
5.1		*Prepare OBSM Desktop*		
		See Step 2.1 for details of this activity.		
5.2		*Uplink Sequence HVADODDL*		
		Execute Sequence **HFADODDL ObdbDumpFromRam v03** Sequence Grouping = - This Sequence Reference is not included in the generated sequence *SSID : 0*		**SEQ**
		NOTE1: *This instance of the TC dumps **all** parameters in **OBDB** (i.e. parameter offset 0 to 2187 for **ASWr4.1**), which includes detection status parameters for CIR Nominal & Redundant signals at OBDB offsets 2183 & 2184* *NOTE2:* *Offset 2183 is at address 343C <HEX> (13372 <DEC>)* *Offset 2184 is at address 3440 <HEX> (13376 <DEC>)*		
		OR... *downlink just these 2 words using the following TC and read their values directly via the TM Packet History display*		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **Dump Memory** *Command Parameter(s) :* **Memory ID** **AH6M0109** **Start Address** **AH6M1109** **Length SAU** **AH6M3109** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses	**AC063109** **020C <hex>** **343C <hex>** **8 <dec>**	
5.3		*Monitor Memory Download*		□
		Verify Packet Reception **Memory Dump - Absolute Addresses - SAU 8** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**MemDmpAbsAdd** **512** **6** **6**	
		See Step 2.3 for details of this activity.		
5.4		*Update Ground Image*		□
		See Step 2.4 for details of this activity.		
6		*Enable CIR detection in OBDB*		Next Step: 7
6.1		*Uplink Sequence HFADCIRA*		□
		Execute Telecommand **Start database loading** *Command Parameter(s) :* **ASW Function ID** **AHFUN001** **DbLoad DF86 Cmd** **AH8D1001** **DbLoad DD86 Cmd** **AH8D2001** **DbLoad Nr Cmds** **AHFDL001** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC_START_DATABASE_LOAD	**ACDS1001** **DB loading** (Def) **Enable 86** **Enable 86** **1 <dec>**	

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **Load databaseBoolean** *Command Parameter(s) :* **DbLoad DF86 Cmd AH8D1001** **DbLoad DD86 Cmd AH8D2001** **DbLoad StartInd AHFDS001** **DbLoad Nr Wrds AHFDN001** **DbLoad Dwd Bool AHFDY001** **DbLoad Dwd Bool AHFDY001** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(8,4) - Load database Boolean	**ACZTX109** **Enable 86** **Enable 86** **2183 <dec>** **2 <dec>** **1 <dec>** **1 <dec>**	
		Execute Telecommand **Fire Start DB loading** *Command Parameter(s) :* **FireFun DF86Cmd AH8F1001** **FireFun DD86Cmd AH8F2001** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(8,4) Fire Command - Fire Start DB loading	**ACZ5L109** **Enable 86** **Enable 86**	
7		*Verify updated CIR detection status via RAM Dump*		Next Step: END
		See Step 2 for details of this activity.		
7.1		*Prepare OBSM Desktop*		□
		See Step 2.1 for details of this activity.		
7.2		*Uplink Sequence HVADODDL*		□
		Execute Sequence **HFADODDL ObdbDumpFromRam v03** Sequence Grouping = - This Sequence Reference is not included in the generated sequence *SSID : 0*		**SEQ**

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		NOTE1: *This instance of the TC dumps **all** parameters in **OBDB** (i.e. parameter offset 0 to 2187 for **ASWr4.1**), which includes detection status parameters for CIR Nominal & Redundant signals at OBDB offsets 2183 & 2184* *NOTE2:* *Offset 2183 is at address 343C <HEX> (13372 <DEC>)* *Offset 2184 is at address 3440 <HEX> (13376 <DEC>)*		
		OR... *downlink just these 2 words using the following TC and read their values directly via the TM Packet History display*		
		Execute Telecommand **Dump Memory** *Command Parameter(s) :* **Memory ID AH6M0109** **Start Address AH6M1109** **Length SAU AH6M3109** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 20* Det. descr. : TC(6,5) Dump Memory Using Absolute Addresses	**AC063109** **020C <hex>** **343C <hex>** **8 <dec>**	
7.3		*Monitor Memory Download*		☐
		Verify Packet Reception **Memory Dump - Absolute Addresses - SAU 8** *Packet Details:* **APID:** **Type:** **Subtype:** **PI1:** **PI2:**	**MemDmpAbsAdd** **512** **6** **6**	
		See Step 2.3 for details of this activity.		
7.4		*Update Ground Image*		☐
		See Step 2.4 for details of this activity.		
		End of Procedure		