Maintenance of FDIR cross correlated checks
File: H_FCP_DHS_3059.xls
Author: S. Manganelli

Procedure Summary

Objectives

The ASW function "FDIR Management" is responsible of FDIR, mostly based on the On-Board Monitoring and Event-Action services.

FDIR management implements Cross-correlated checks (hard-coded functions) for more complicated checks, where a monitoring of a single parameter is not sufficient.

This procedure describes the steps needed to modify the parameters of the cross-correlated checks.

Cross-correlated checks are hard-coded functions that can read parameters from the data pool and do a series of checks based on those parameters.
The results of the cross-correlated checks are written into the data pool, and On Board Monitoring service is used for monitoring these results.

Summary of Constraints

Default status of the function: "Started".

When the function is stopped, it does not accept any other telecommands than the:
- Start Function TC(8,1,116);
- Report Function Status TC(8,5,116).

Thus, if the function is stopped this procedure cannot be executed.

Spacecraft Configuration

Start of Procedure

CDMU in default configuration, that is:
- PM A or B ON (nominally A)
- TM Encoder/OBT A or B active (nominally A)
- RM A and B enabled
- MM A and B ON

End of Procedure

CDMU in default configuration, that is:
- PM A or B ON (nominally A)
- TM Encoder/OBT A or B active (nominally A)
- RM A and B enabled
- MM A and B ON

Reference File(s)

Input Command Sequences

Output Command Sequences

HFD3059

Referenced Displays

ANDs **GRDs** **SLDs**

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ZAZAI999

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
07/11/07		1	Created	cmevi-hp	
10/06/08	1	2	TC Flag and Seq Properly changed	S. Manganelli	
28/11/08	2	3	Updated following Industry input 15 oct 06 Added info sheet	S. Manganelli	
19/04/09	2.3	4	Deleted procedure calls, included TCs to acquire FCCT Included TC and comment to discriminate between floating point and integer parameters Included mention of H_FCP_DHS_DEFFC	S. Manganelli	

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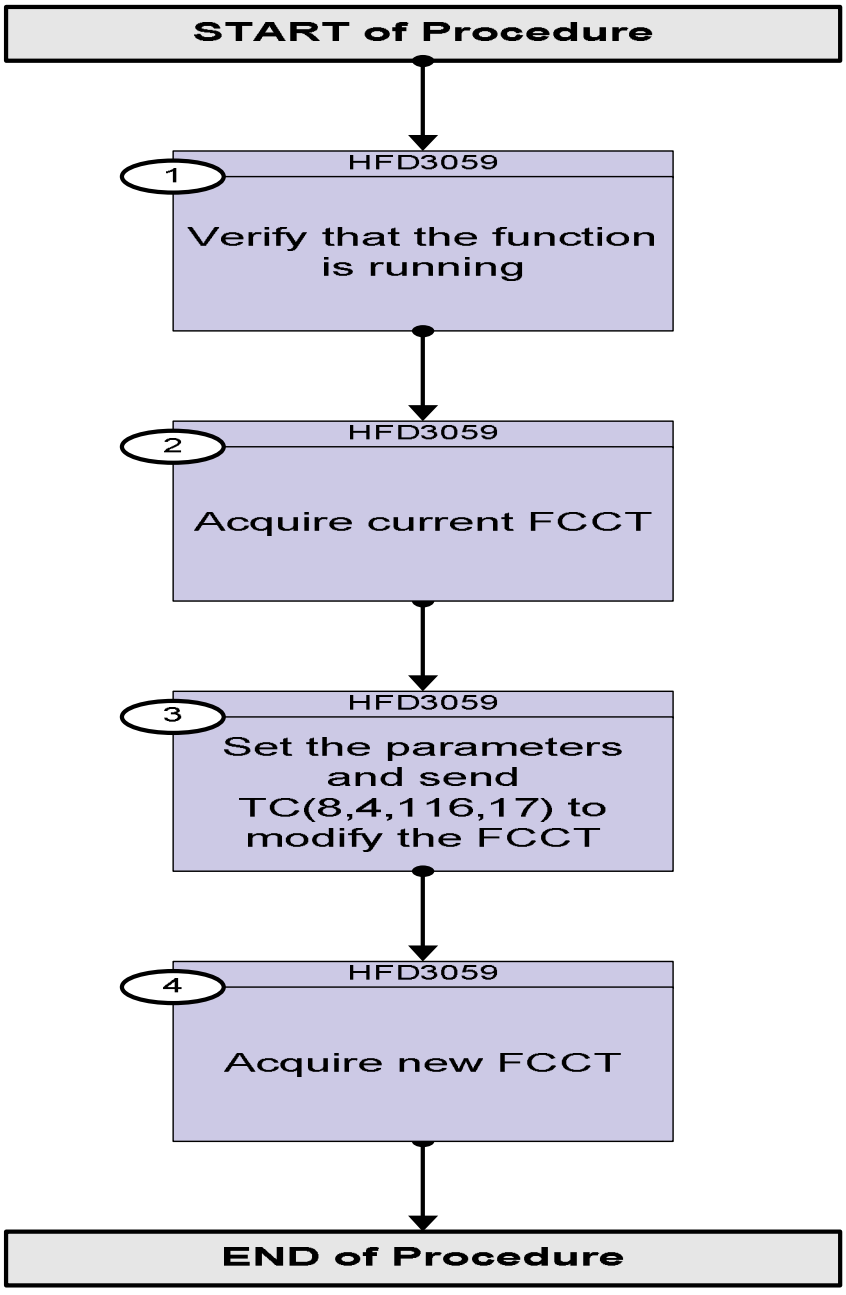
Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		TC Seq. Name :HFD3059 (FCCT maintenance) *TimeTag Type: N* *Sub Schedule ID:*		
1		*Verify that the function is running*		Next Step: 2
		Verify Telemetry **FdirSts DEG23170**	**= Running**	AND=ZAZAI999
2		*Acquire current FCCT*		Next Step: 3
		Execute Telecommand **ReportFdirManagSts** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Report Fdir Management Status, TC(8,5,116)	**DCN02170**	
3		*Set the parameters and send TC(8,4,116,17) to modify the FCCT*		Next Step: 4
		Note: procedure H_FCP_DHS_DEFFC provides the default FCCT definition TCs, i.e. instantiated parameters with default values in editable format. Use the template TC in THIS procedure only if the default definitions in H_FCP_DHS_DEFFC are not helping.		
		WARNING: the following TC is of variable lenght therefore does not allow the definition of a generic procedure. The FCCT is hard-coded for what concerns the Check ID and the Name , so the only modifiable entries are the values of the six parameters, and only if they are used by the corresponding algorithm. The flexibility provided to the user is just based on the tuning of the parameters fields (1…6) values. Also adding a new parameter will imply a major code change because a dedicated piece of code should be added to handle the added new parameter. The reference for the content description is the TN-151.		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		In the TC(8,4,116,17) it is necessary to set the following parameters: **Check ID** identifies the row in the table and T and is mapped, one to one, to the corresponding monitoring IDs used in the MOT . For instance: FCCT entry with CheckId_17 is mapped in MOT to the entry with MotId = 17. A special case is the entries related to the TCS. In the MOT there is a monitoring entry associated to 6 FCCT checks that are pertaining to the same HPS. The relevant FCCT checkId is linked to the TCT Loop Index according to the following rule: FCCT ID = 18 + TCT Loop Index Note that the spare loops (frequency set to 0) in TCT are not included in the FCCT.		
		N: number of parameters modified in this TC (<=6); **Parameter Index** (repeated N times) 1--6; **Parameter Value** (repeated N times).		
		WARNING: the following TC is intended to be just an example, to be used for floating point parameter types		
		Execute Telecommand **ModCrCorrCheckParValFlt** *Command Parameter(s) :* **CrCorrCheckId XH067992** **N_Repetition XH068992** **CrCorrParamId XH069992** **CCorrParValFlt XH071992** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Modify Cross-Correlated Check float Parameters (8,4,116,17) This Telecommand will not be included in the export	**XC004992** **FCCT check ID 1 <dec>** (Def) **Par ID (1 to 6)** **Value as FloatPoint**	
		WARNING: the following TC is intended to be just an example, to be used for Integer parameter types		

Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Telecommand **ModCrCorrCheckParValI** *Command Parameter(s) :* **CrCorrCheckId** **XH067992** **N_Repetition** **XH068992** **CrCorrParamId** **XH069992** **CCorrParValUInt** **XH070992** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Modify Cross-Correlated Check Integer Parameters (8,4,116,17) This Telecommand will not be included in the export	**XC003992** **FCCT check ID** **1 <dec>** (Def) **Par ID (1 to 6)** **Value as Integer**	
4		*Acquire new FCCT*		Next Step: END
		Execute Telecommand **ReportFdirManagSts** *TC Control Flags :* **GBM IL DSE** **--Y -- ---** *Subsch. ID : 10* Det. descr. : Report Fdir Management Status, TC(8,5,116)	**DCN02170**	
		End of Procedure		

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Info

TC ID	TC DESCR	Long Descr ID	PAS calibr	Check ID in TC
ZCL01999	FCCT_XPND1_RX_Power	17	ChkId_17	1
ZCL02999	FCCT_XPND2_RX_Power	18	ChkId_18	2
ZCL0L999	FCCT_Ins_TM_Monitoring	73	ChkId_73	57
ZCL30999	FCCT_XPND2_HPS1_HCS2	20	ChkId_20	4
ZCL31999	FCCT_FCVA1B_HPS1_HCS3	21	ChkId_21	5
ZCL32999	FCCT_FCVC2B_HPS1_HCS4	22	ChkId_22	6
ZCL33999	FCCT_RCS pipe2_HPS1_HCS5	23	ChkId_23	7
ZCL34999	FCCT_XPND1_HPS1_HCS6	24	ChkId_24	8
ZCL35999	FCCT_FCVC1B_HPS2_HCS2	26	ChkId_26	10
ZCL36999	FCCT_FCVA2B_HPS2_HCS3	27	ChkId_27	11
ZCL37999	FCCT_FCVC4B_HPS2_HCS4	28	ChkId_28	12
ZCL38999	FCCT_DPU-SPU_HPS2_HCS5	29	ChkId_29	13
ZCL39999	FCCT_FPBOLC_HPS3_HCS1	31	ChkId_31	15
ZCL3A999	FCCT_CRS_1_HPS3_HCS2	32	ChkId_32	16
ZCL3B999	FCCT_FPDECMEC_HPS3_HCS3	33	ChkId_33	17
ZCL3C999	FCCT_RCS pipe1_HPS3_HCS4	34	ChkId_34	18
ZCL3D999	FCCT_CCU_HPS3_HCS5	35	ChkId_35	19
ZCL3E999	FCCT_GYRO_HPS3_HCS6	36	ChkId_36	20
ZCL3F999	FCCT_FHWOV_HPS4_HCS2	38	ChkId_38	22
ZCL3G999	FCCT_RCS pipe6_HPS4_HCS3	39	ChkId_39	23
ZCL3H999	FCCT_FCVA1A_HPS4_HCS4	40	ChkId_40	24
ZCL3J999	FCCT_FCV C2A_HPS4_HCS5	41	ChkId_41	25
ZCL3K999	FCCT_RCS pipe7_HPS4_HCS6	42	ChkId_42	26
ZCL3L999	FCCT_CRS_2_HPS5_HCS1	43	ChkId_43	27
ZCL3M999	FCCT_FHHRH_HPS5_HCS2	44	ChkId_44	28
ZCL3N999	FCCT_FHWEVICU_HPS5_HCS3	45	ChkId_45	29
ZCL3P999	FCCT_FCVC3B_HPS5_HCS4	46	ChkId_46	30
ZCL3R999	FCCT_RCS pipe8_HPS5_HCS5	47	ChkId_47	31
ZCL3S999	FCCT_PTLFLV12_HPS5_HCS6	48	ChkId_48	32
ZCL3T999	FCCT_RWL4_HPS6_HCS2	50	ChkId_50	34
ZCL3U999	FCCT_RWL1_HPS6_HCS3	51	ChkId_51	35
ZCL3V999	FCCT_RWL3_HPS6_HCS4	52	ChkId_52	36
ZCL3W999	FCCT_FHIFV_HPS6_HCS5	53	ChkId_53	37
ZCL3X999	FCCT_RWL2_HPS6_HCS6	54	ChkId_54	38
ZCL3Y999	FCCT_STRs_HPS7_HCS1	55	ChkId_55	39
ZCL3Z999	FCCT_BATTERY_HPS7_HCS2	56	ChkId_56	40
ZCL40999	FCCT_FHWOH_HPS7_HCS3	57	ChkId_57	41
ZCL41999	FCCT_FHWEH_HPS7_HCS4	58	ChkId_58	42
ZCL42999	FCCT_FCV C1A_HPS7_HCS5	59	ChkId_59	43
ZCL43999	FCCT_FCV A2A_HPS7_HCS6	60	ChkId_60	44
ZCL44999	FCCT_FHHRV_HPS8_HCS1	61	ChkId_61	45
ZCL45999	FCCT_FCV C3A_HPS8_HCS2	62	ChkId_62	46
ZCL46999	FCCT_RCS pipe3_HPS8_HCS3	63	ChkId_63	47
ZCL47999	FCCT_STR2_PRBF_HPS8_HCS4	64	ChkId_64	48
ZCL48999	FCCT_RCS pipe5_HPS8_HCS5	65	ChkId_65	49
ZCL49999	FCCT_FHLCU_HPS8_HCS6	66	ChkId_66	50
ZCL4A999	FCCT_Tank-Y_HPS9_HCS2	68	ChkId_68	52
ZCL4B999	FCCT_FCV C4A_HPS9_HCS3	69	ChkId_69	53
ZCL4C999	FCCT_FHLSU_HPS9_HCS4	70	ChkId_70	54
ZCL4D999	FCCT_STR1_PRBF_HPS9_HCS5	71	ChkId_71	55
ZCL4E999	FCCT_Tank+Y_HPS9_HCS6	72	ChkId_72	56