Configuration check after level 3 or 4
File: H_CRP_DHS_3046.xls
Author: cmevi-hp

Procedure Summary

Objectives

This procedure describe the steps needed to check the S/C configuration after a level 3 or 4.

Summary of Constraints

None

Spacecraft Configuration

Start of Procedure

Any

End of Procedure

Depending on branches entered.

Reference File(s)

Input Command Sequences

Output Command Sequences

Referenced Displays

ANDs	GRDs	SLDs
ZAZAA999		
ZAZAI999		
ZAZAC999		

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
14/11/08		1	Created	S. Manganelli	
02/01/09		2	Restructured to take into account TTR failure cases, added RM log clearing.	S. Manganelli	
12/01/09		3	PAP_Setup picture updated.	cmevi-hp	
15/01/09		4	resized PAP diagram	S. Manganelli	
02/02/09	2	5	PAP Setup picture updated.	cmevi-hp	
09/02/09	2.1	6	Procedure calls updated in step 13 and 14.	cmevi-hp	

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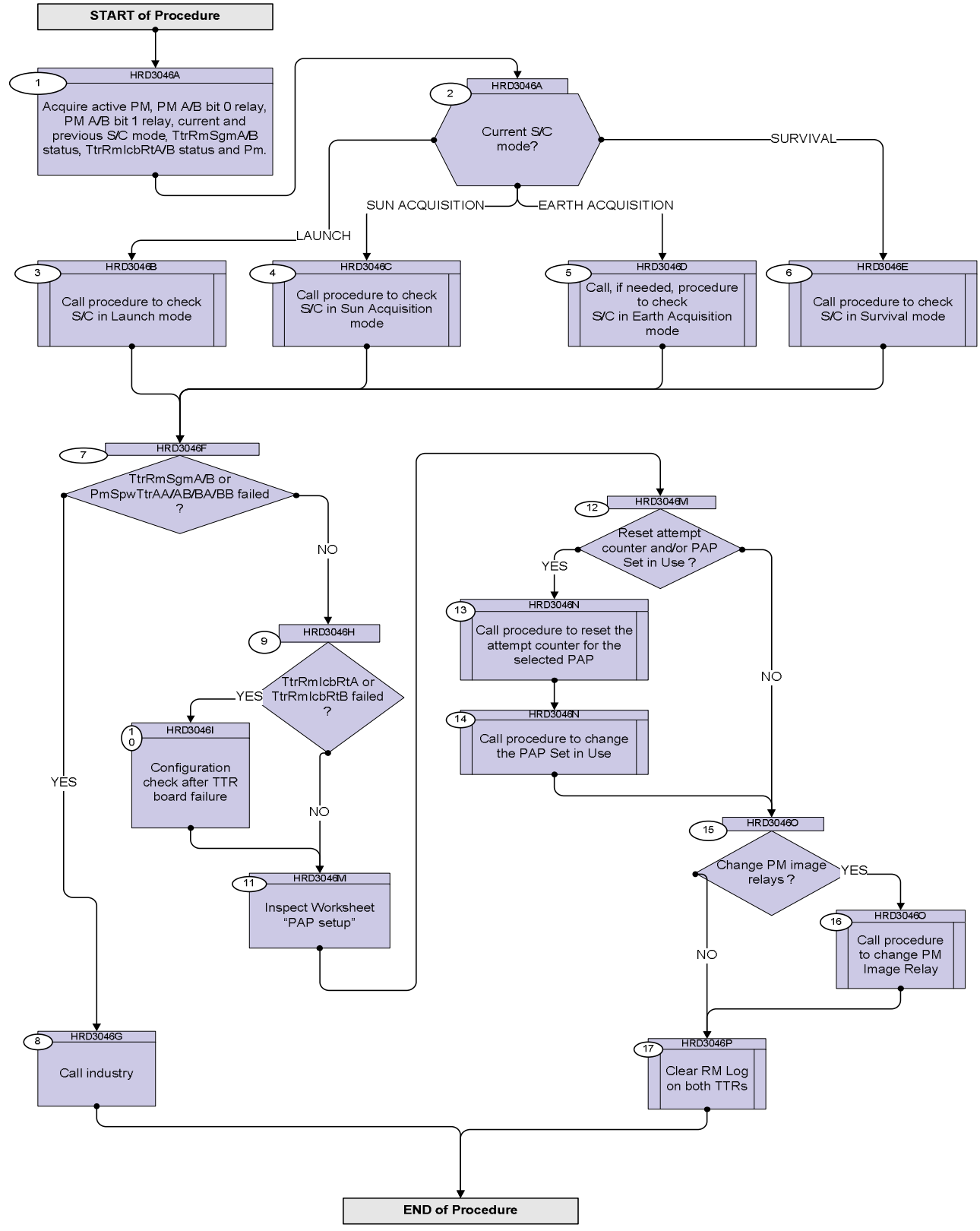
Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		TC Seq. Name :HRD3046A (Acquire status) *TimeTag Type:* *Sub Schedule ID:* □		
1		*Acquire active PM, PM A/B bit 0 relay, PM A/B bit 1 relay, current and previous S/C mode, TtrRmSgmA/B status, TtrRmIcbRtA/B status and Pm.*		Next Step: 2
		Verify Telemetry **Active_PM_Board DEDM1160**		AND=ZAZAA999
		The following parameter will not contain a valid value if there is a communication problem with TTRA because TtrRmIcbA is "Unhealthy".		
		Verify Telemetry **PMA_R0_TTR-RM_A DEEX1160**		AND=ZAZAA999
		The following parameter will not contain a valid value if there is a communication problem with TTRB because TtrRmIcbB is "Unhealthy".		
		Verify Telemetry **PMB_R0_TTR-RM_B DEEX3160**		AND=ZAZAA999
		PM bit 0 (of the PM that is being reset) is **set** to "**Survival**" after detection of the Programmable Alarm Patterns related to "DoD" (in all configurations, i.e. PM A/B Nom or PM A/B only) and **will trigger the switch to Survival mode**. On board autonomous commanding never resets PM bit 0 and it should be **reset** to "**Nominal"** by Ground when recovering from Survival mode, otherwise a subsequent level 3 failure would lead to another switch to Survival mode.		
		The following parameter will not contain a valid value if there is a communication problem with TTRA because TtrRmIcbA is "Unhealthy".		
		Verify Telemetry **PMA_R1_TTR-RM_A DEEX2160**		AND=ZAZAA999
		The following parameter will not contain a valid value if there is a communication problem with TTRB because TtrRmIcbB is "Unhealthy".		
		Verify Telemetry **PMB_R1_TTR-RM_B DEEX4160**		AND=ZAZAA999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		PM bit 1 (of the PM that is being reset) is **reset** to "**Select SW Image 2**" after detection of Programmable Alarm Patterns "Level 3 internal alarm with redundant PM" or the 2nd attempt of "Level 3 PM A/B only" and **will cause the second image in EEPROM to be loaded** in RAM as part of the bootstrap logic. On board autonomous commanding never **sets** it back to "**Select SW Image 1**" and thus it is up to the Ground to set the PM bit 1 when correcting the SW images stored on board.		
		Verify Telemetry **CurrentMode** **DEL34170**		AND=ZAZAI999
		Verify Telemetry **PrevMode** **DEL35170**		AND=ZAZAI999
		Verify Telemetry **TtrRmIcbA_Healt** **DEJLZ160**		AND=ZAZAC999
		Verify Telemetry **TtrRmIcbB_Healt** **DEJLL160**		AND=ZAZAC999
		Verify Telemetry **TtrRmSgmA_Healt** **DEJL3160**		AND=ZAZAC999
		Verify Telemetry **TtrRmSgmB_Healt** **DEJL6160**		AND=ZAZAC999
		Verify Telemetry **PmSpwTtrAA_Hlth** **DEJR3160**		AND=ZAZAC999
		Verify Telemetry **PmSpwTtrAB_Hlth** **DEJR6160**		AND=ZAZAC999
		Verify Telemetry **PmSpwTtrBA_Hlth** **DEJRZ160**		AND=ZAZAC999
		Verify Telemetry **PmSpwTtrBB_Hlth** **DEJRL160**		AND=ZAZAC999
2		*Current S/C mode?*		Next Step: LAUNCH 3 SUN ACQUISITION 4 EARTH ACQUISITION 5 SURVIVAL 6
		TC Seq. Name :HRD3046B (Check S/C in Launch) *TimeTag Type:* *Sub Schedule ID:* □		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
3		*Call procedure to check S/C in Launch mode*		Next Step: 7
		CDMU checks in LM should have been initiated earlier in the overall system procedure. In this case there is no need the run again the following procedure P_FCP_DHS_LMCK.		
		Execute H_FCP_DHS_LMCK.		
		Execute H_FCP_DHS_1030.		
		TC Seq. Name :HRD3046C (Check S/C in Sun Acq) *TimeTag Type:* *Sub Schedule ID:* □		
4		*Call procedure to check S/C in Sun Acquisition mode*		Next Step: 7
		CDMU checks in SAM should have been initiated earlier in the overall system procedure. In this case there is no need the run again the following procedure P_FCP_DHS_SACK.		
		Execute H_FCP_DHS_SACK.		
		Execute H_FCP_DHS_1030.		
		TC Seq. Name :HRD3046D (Check S/C in Earth A) *TimeTag Type:* *Sub Schedule ID:* □		
5		*Call, if needed, procedure to check S/C in Earth Acquisition mode*		Next Step: 7
		CDMU checks in EAM should have been initiated earlier in the overall system procedure. In this case there is no need the run again the following procedure H_FCP_DHS_EACK.		
		Execute H_FCP_DHS_EACK.		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		TC Seq. Name :HRD3046E (Check S/C in Surviva) *TimeTag Type:* *Sub Schedule ID:*		
6		*Call procedure to check S/C in Survival mode*		Next Step: 7
		CDMU checks in Survival should have been initiated earlier in the overall system procedure. In this case there is no need the run again the following procedure P_FCP_DHS_SRCK.		
		Execute H_CRP_DHS_SRCK.		
		Execute H_FCP_DHS_1030.		
		TC Seq. Name :HRD3046F (Dummy sequence) *TimeTag Type:* *Sub Schedule ID:*		
7		*TtrRmSgmA/B or PmSpwTtrAA/AB/BA/BB failed ?*		Next Step: YES 8 NO 9
		TC Seq. Name :HRD3046G (Dummy) *TimeTag Type:* *Sub Schedule ID:*		
8		*Call industry*		Next Step: END
		If one of the following component is marked Unhealthy - TtrRmSgmA/B - PmSpwTtrAA/AB/BA/BB the software is not able to update the corresponding SGM. In this case the SGMs on the two TTR boards do not have anymore the same content and their synchronization is necessary. Unfortunately no procedure is still available from industry for diagnostic of SGM status and further synchronization.		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		TC Seq. Name :HRD3046H (Dummy sequence) *TimeTag Type:* *Sub Schedule ID:*		
9		*TtrRmIcbRtA or TtrRmIcbRtB failed ?*		Next Step: YES 10 NO 11
		TC Seq. Name :HRD3046I (TTR failure checks) *TimeTag Type:* *Sub Schedule ID:*		
10		*Configuration check after TTR board failure*		Next Step: 11
		Execute procedure H_CRP_DHS_3049.		
		TC Seq. Name :HRD3046M (Dummy sequence) *TimeTag Type:* *Sub Schedule ID:*		
11		*Inspect Worksheet “PAP setup”*		Next Step: 12
12		*Reset attempt counter and/or PAP Set in Use ?*		Next Step: YES 13 NO 15
		In order to decide what to do, inspect the picture in worksheet "PAP Setup".		
		WARNING : the worksheet PAP Setup is based on the assumption that if we end up to the redundant PM, the PAP will be set so to a) stabilise on the redundant unit b) maximise the remaining RM attempts (if after a reconfiguration we are on image 2 of the redundant PM, we simply switch back to PM Image 1 relay position).		
		TC Seq. Name :HRD3046N (Reset Attempt counte) *TimeTag Type:* *Sub Schedule ID:*		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
13		*Call procedure to reset the attempt counter for the selected PAP*		Next Step: 14
		It could be necessary to execute only one of the following two procedures. This depends on which RM took care of the reconfiguration. Of course, if more than one PAP has been triggered for an RM, the relevant procedure must be executed multiple times.		
		Execute procedure H_CRP_DHS_ATT_A.		
		Execute procedure H_CRP_DHS_ATT_B.		
14		*Call procedure to change the PAP Set in Use*		Next Step: 15
		The PAP Set in Use has to be changed on both RMs.		
		Execute H_CRP_DHS_PAP_A.		
		Execute H_CRP_DHS_PAP_B.		
		TC Seq. Name :HRD3046O (Change PM Image Rela) *TimeTag Type:* *Sub Schedule ID:*		
15		*Change PM image relays ?*		Next Step: YES 16 NO 17
16		*Call procedure to change PM Image Relay*		Next Step: 17
		Execute H_CRP_DHS_3015.		
		TC Seq. Name :HRD3046P (Clear RM Log) *TimeTag Type:* *Sub Schedule ID:*		
17		*Clear RM Log on both TTRs*		Next Step: END
		Execute procedure H_CRP_DHS_3069.		
		End of Procedure		

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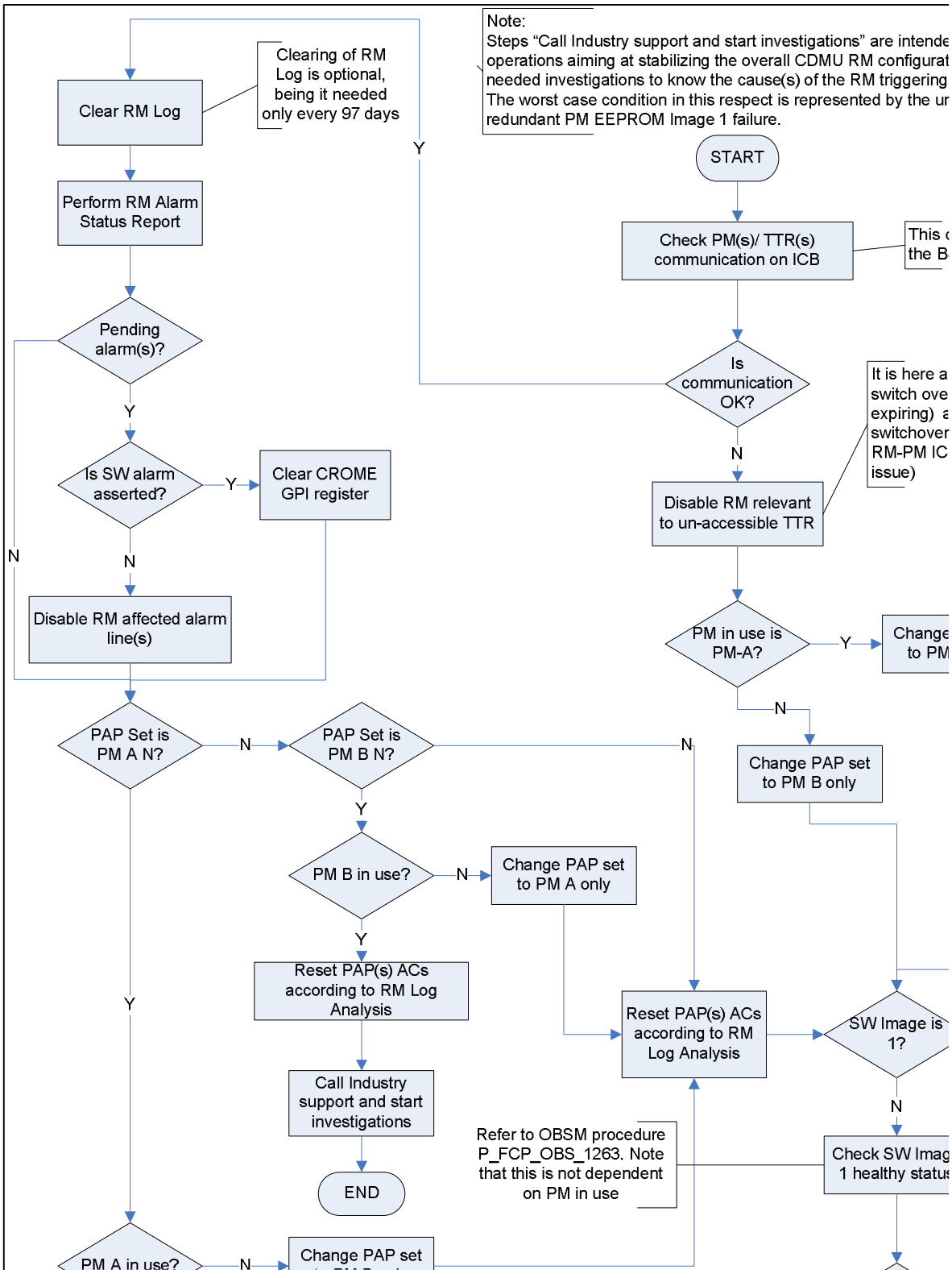

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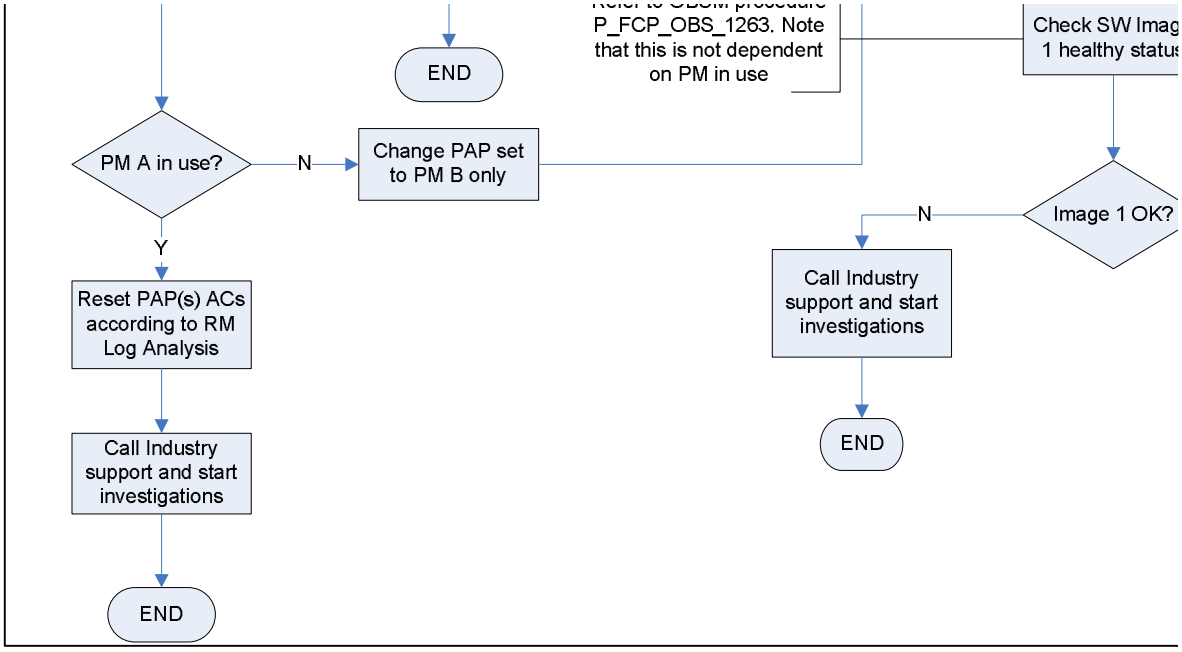
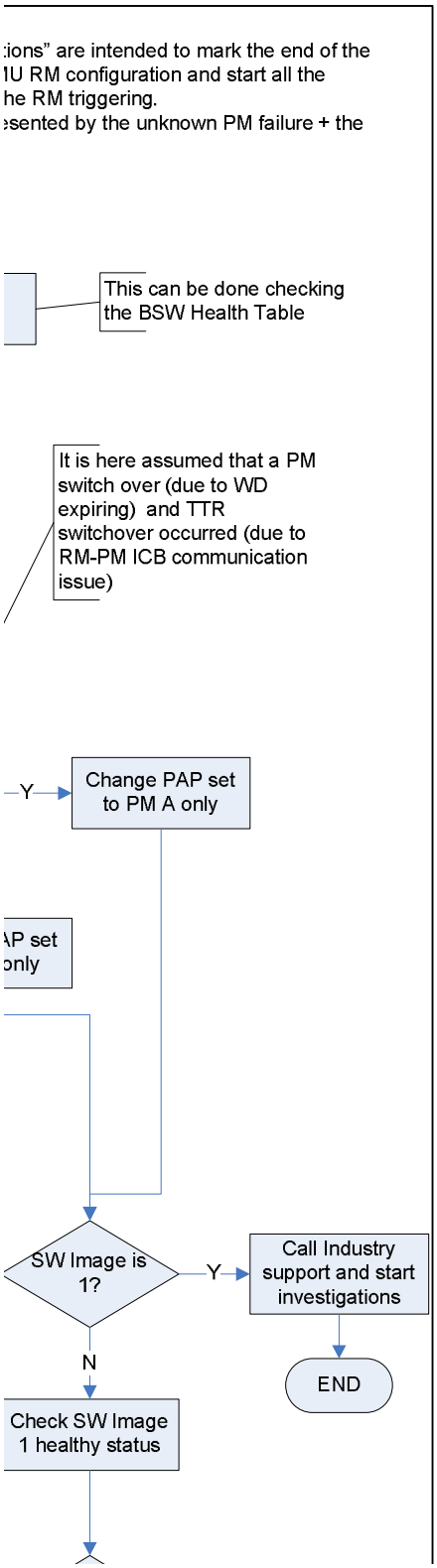

END
P_FCP_OBS_1263. Note that this is not dependent on PM in use
Check SW Imag 1 healthy status
PM A in use?
N
Change PAP set to PM B only
Image 1 OK?
N
Y
Call Industry support and start investigations
Reset PAP(s) ACs according to RM Log Analysis
END
Call Industry support and start investigations
END

or 4



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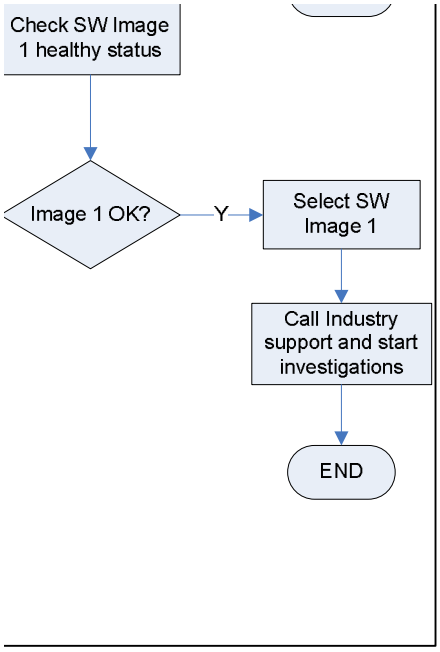
Check SW Image 1 healthy status
Image 1 OK?
Y
Select SW Image 1
Call Industry support and start investigations
END