SOP_OPS_UNSAFE_ACIS_PHASE1

PARTICIPANTS: OC/CC

OVERVIEW: This procedure describes the real-time actions to be taken by the OC in the event that ACIS has not been safed in a high radiation environment.

SUMMARY: Determine if unexpected SIM position may be due to serious hardware failure. If so, run SCS 107 without moving the SIM. If not, run SCS 107 completely.

CONSTRAINTS: N/A

INITIAL CONDITIONS: SIM TT position > -25,000 and spacecraft is in the radiation zone as listed in Backstop Report State by Comm.

EHS DISPLAYS: F_ MAIN, M_SIMTABLE, F_SCS_107

GRETA DISPLAYS: F_MAIN, EHS_M_SIMTABLE, F_SCS107

COMPS: None

SCRIPTS: O_SCSCTRL

PROCEDURES: N/A

COMMAND LOADS

LOAD NAME	CHECKSUM, if SCS
N/A	N/A

DISABLED COMMANDS: N/A

COMMAND SYSTEM:

Clear To Send Mechanism	= TIME
CAR Processing	= Enabled
FSV Processing	= Disabled
Output Format	= NRZM
Minimum Time Delay (sec)	= 3
CAR Time-out (sec)	= 40
FSV Time-out (sec)	= 45
Blocking Factor	= 90

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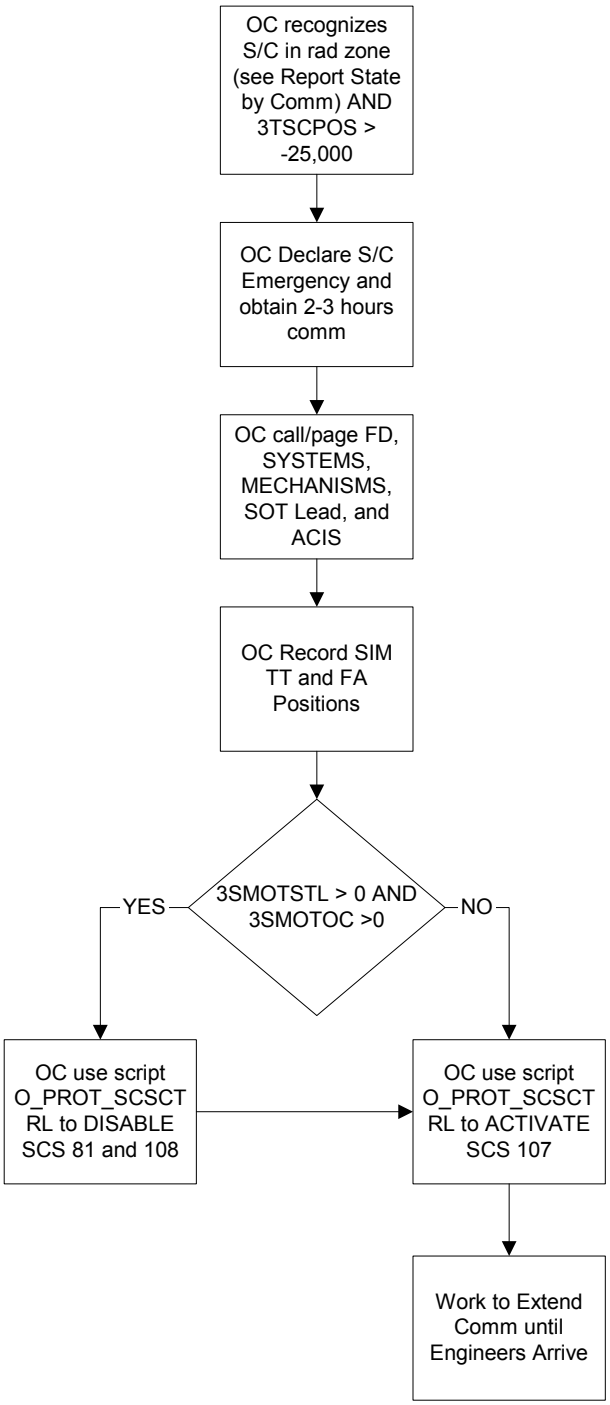
FLOWCHART:



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1.0 DECLARE S/C EMERGENCY

OC - Work with Ops Chief to extend comm by 2-3 hours, and declare a S/C Emergency.

2.0 OC CALL SYSTEMS, MECHANISMS, AND ACIS ENGINEERS, FD AND SOT LEAD

OC - Contact SYSTEMS, MECHANISMS, and ACIS Engineers, FD, FOM, and SOT Lead. Inform them that ACIS is unsafe, and that this SOP is being executed.

3.0 RECORD SIM TT AND FA POSITIONS

OC - Record SIM TT and FA positions.

MSID	DESCRIPTION	DISPLAY	VALUE
3TSCPOS	SIM TT Position	M_SIMTABLE.dsp	
3FAPOS	SIM FA Position	M_SIMTABLE.dsp	

4.0 RUN SCS 107

There are failure modes of the SIM which make an unconsidered SIM translation potentially dangerous. If the values of BOTH of the following MSIDs are > 0, disable SCSs 81 and 108 before activating SCS 107. Otherwise, Activate SCS 107.

MSID	DESCRIPTION	EXPECTED VALUE	DISPLAY	ACTUAL VALUE
3SMOTSTL	SIM TT Stall Counter	0	M_SIMTABLE.dsp	
3SMOTOC	SIM Over Current Counter	0	M_SIMTABLE.dsp	

If BOTH of these MSIDs are non-zero, go to step 4.a, then 4.b. Otherwise, go directly to 4.b. Please refer to the flowchart at the beginning of the procedure.

4.a. DISABLE SCSs 81 AND 108

****---------- CAUTION ----------****

EXECUTE THIS STEP (4.a) ONLY IF BOTH 3SMOTSTL AND 3SMOTOC ARE NON-ZERO

****----------****

OC - Using script O_PROT_SCSCTRL, DISABLE SCSs 81 and 108.

****---------- NOTE ----------****

EXECUTE THIS STEP (4.b) IN ALL CASES

****----------****

4.b. ACTIVATE SCS 107

OC - Using script O_PROT_SCSCTRL, ACTIVATE SCS 107, if SCS 107 is currently disabled, ENABLE and ACTIVATE SCS 107.

MSID VALUE	DESCRIPTION	EXPECTED VALUE	ACTUAL VALUE	Time of Verification
	FSW			
COSCS128S through COSCS255S	All Mission SCS states (only valid in EPS subformat)	INAC or DISA		
CORADMEN	Radmon Process State	DISA		
COSCS107S	SCS #107 State (only valid in EPS subformat)	DISA		

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	GRATINGS			
4M5IRAX	MCE A: +5 VOLT CONV INH RELAY MONITOR	DISA		
4HEXRAX	MCE A: HETG EXECUTE RELAY STATUS MONITOR	DISA		
4LEXRAX	MCE A: LETG EXECUTE RELAY STATUS MONITOR	DISA		
4M28IRAX	MCE A: +28 VOLT CONV INH RELAY MON	DISA		
4M5IRBX	MCE B: +5 VOLT CONV INH RELAY MONITOR	DISA		
4HEXRBX	MCE B: HETG EXECUTE RELAY STATUS MONITOR	DISA		
4LEXRBX	MCE B: LETG EXECUTE RELAY STATUS MONITOR	DISA		
4M28IRBX	MCE B: +28 VOLT CONV INH RELAY MON	DISA		
	SIM			
3TSCPOS	SIM POSITION (If SCS 81 and 108 were NOT disabled)	-99616		
3TSCPOS	SIM POSITION (If SCS 81 and 108 were disabled)	Unchanged from step 3.0 above		
3SMOTPEN	SEA MOTOR DRIVER POWER RELAY STATUS	OFF		
3SMOTSEL	SEA MOTOR SELECTION RELAY STATUS	TSC		
	HRC			
2S1ONST	SHIELD A HVPS ON/OFF	OFF		
2S2ONST	SHIELD B HVPS ON/OFF	OFF		
2SPTPAST	SPECTROSCOPY DET TOP PLATE HV STEP	43		
2SPBPAST	SPECTROSCOPY DET BOTTOM PLATE HV STEP	54		
2IMTPAST	IMAGING DET TOP PLATE HV STEP	42		
2IMBPAST	IMAGING DET BOTTOM PLATE HV STEP	53		
2S1HVST	SHIELD A HVPS SETTING	0		
2S2HVST	SHIELD B HVPS SETTING	0		
2SCTHAST	STEP CTR LAST VALUE	9000		
2MCNAAMD	MOTOR CMD REGISTER MV NSTEPS TOWARD A	CMD		
	ACIS			
1DPICACU	DPA INPUT CURRENT A [AMP]	0.25 to 0.57		
1DPICBCU	DPA INPUT CURRENT B [AMP]	0.19 to 0.43		
1CBAT	CAMERA BODY TEMP A	-65 to -55		
1DEICACU	DEA Input Current	~0.6-0.8 (very noisy - take an average over several updates)		
1STAT1ST	SCIENCE RUN NOT RUNNING	1		

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5.0 WORK TO EXTEND COMM

ACIS should not be considered safe until FOT and SOT engineers have runSOP_SYSTEM_UNSAFE_ACIS_PHASE2. OC should ensure that comm is available for this procedure tobe run, ~2-3 hours.

-----END OF PROCEDURE-----

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APPENDIX

KEYWORDS: ACIS, UNSAFE, SIM, PHASE1

HISTORY	NAME	AUTHOR	REVISION	DATE
		Logan	3.2	10/31/02

EXTERNAL REFERENCES:
SOP_OPS_STATE_OF_HEALTH
SOP_SYSTEM_UNSAFE_ACIS_PHASE2

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