CAP CHANDRA

Command Action Procedure

CAP # 1309		**Originator:**	Richard Edgar
Date: March5, 2014		**Commands Checked By:**	Paul Plucinsky
Participants	OC		
Required for	CC	**Time of CAP execution:**	
Execution:			

Title: ACIS Flight Software Dump

Description/Rationale:
Command ACIS to dump the flight software from EEPROM. We will follow SOP_ACIS_FSW_DUMP.

In preparation for patching the ACIS Flight Software, we wish to dump the existing flight software, and compare it to images maintained on the ground. This will exercise both SOT personnel and new EGSE equipment on the ground in very similar ways to what will be required during the flight software patch procedure.

Restrictions/Warnings/Notes:

IF THIS CAP IS INTERRUPTED BY COMM LOSS, SCS-196 will need to be disabled and cleared at a later comm. Commanding to do this is part of the SOP.

If the dump looks incomplete due to telemetry dropouts, we may decide to repeat the flight software dump procedure.

This command load, once loaded into SCS-196, must be activated no later than the end of the scheduled COMM pass, which ends at 2014:069:20:30:00z. The commanding in this CAP should end no later than 2014:069:20:50:00z.

Yes ☐ No ☒ CAP requires enabling of a disabled command? If yes, provide a list of Disabled Commands

CARD Items: SYST-R-004 Allowable commands for use in Mission SCS above 135.
See required SOP.

Schedule Requirements/Load Interaction:

CAP execution window: 2014:069:19:30z to 2014:069:20:30z
CAP duration: 20 minutes
CAP verified against MAR1014A daily loads if applicable: N/A ☐

Yes ☒ **No** ☐ Daily load commands exist during execution window of CAP
Yes ☒ **No** ☐ CAP requires specific DSN comm. or timing requirements
Yes ☐ **No** ☒ CAP will be run concurrently with another CAP
Yes ☐ **No** ☒ CAP requires commanding in the load to be executed to ensure success
Yes ☐ **No** ☒ Daily load requires the CAP to be completed to ensure success
Yes ☒ **No** ☐ CAP uses SCS slots. If yes, performs SCS cleanup

Comments:

Commanding in this CAP will not interfere with the ACIS CTI measurement in progress at the start time.

This CAP requires comm at the start to uplink the commands in the SOP to SCS-196 and activate them. Data can come down in either real-time or dump data.

The SOP uses SCS-196, and contains commanding to disable and clear when complete. This may need to be done in the next available comm pass if the dump is not complete at loss of comm.

Note that there is a momentum unload monitored using CAP 1295 during this comm. This CAP can be started after CAP 1295 is complete, with ample time before LOS.

Initial Conditions/Spacecraft Configuration:

CAP depends upon or changes the state of:

☒ Telemetry Format
☐ Safing Monitor En\Dis State (inc. RadMon)
☐ OBSID
☐ Momentum State
☐ Attitude
☐ PCAD Mode
☐ S/C Unit Configuration (H/W or S/W)
☐ Ground System Configuration/Settings
☐ S/C Clock (VCDU)
☐ SIM Table Position
☐ Grating Positions
☐ SI Mode
☐ ACIS Parameter Blocks
☐ HRC Configuration
☒ SCS States or Contents
☐ Dither State
☐ FSW Element

Comments:
The TLM format is expected to be FMT 2, subformat EPS. If not, the CAP will change the TLM FMT to FMT 2, subformat EPS.
The SOP uses SCS-196, and contains commanding to disable and clear it. This may need to be done in the next available comm.

Risk/Comm. Loss/Worst Case Scenario:

What happens if comm. is lost during CAP execution?
If comm is lost after SCS-196 is loaded but before execution, it will need to be disabled and cleared at the next available comm. If comm is lost after execution of SCS-196 has begun, data will come down in the dump data, and SCS-196 will need to be disabled and cleared at the next available comm.

What is the worst case scenario for CAP execution? (Assuming the CAP is executed correctly)
If ACIS telemetry saturates, memory dump data could be telemetered very slowly. If the delay is long enough, the entire dump of the EEPROM may not complete during the real time pass.
If this occurs, the image of the SW will have to be verified from dump data. If there are telemetry dropouts, we may request to execute the flight software dump again. If the dumped data indicate EEPROM corruption, the ACIS flight SW team will commence an investigation. Such a corruption has no operational impact unless there is an unexpected reboot of the BEP.

Required Products (Scripts, Displays, SOPs, etc.):

Product Name	Version	On-Console
SOP_ACIS_FSW_DUMP	V3.2	☒
C_SET_FORMAT.SSC	V3.3	☒

Command Load Name	Checksum (if applicable)	In ODB
See required SOP		☐

Instructions:

1. SOT verify ACIS BEP/A is running.
2. Execute SOP_ACIS_FSW_DUMP.

SOT Manager/Lead:		**Mission Planning Manager:**	
OC or Ops Manager:		**FOM:**	
Sys. Engineer:		**Flight Director:**	