Science Observations
File: H_FCP_AOC_3S06.xls
Author: dsalt-hp

Procedure Summary

Objectives

The objective of this Herschel ACMS procedure is to define the
actions that have to be taken to conduct a science observation
from an ACMS point of view.

The procedure involves the following activities:
- verify ACMS configuration
- dump EDR buffer (calls H_FCP_AOC_3011)
- check science instruments are operational
- change RWL, if necessary (calls H_FCP_AOC_4R20)
- command SSO, if necessary (calls H_FCP_AOC_3S05)
- command Peek-Up, if necessary (calls H_FCP_AOC_3S04)
- command Fine Pointing, as needed (calls H_FCP_AOC_3S01)
- command Raster Scan, as needed (calls H_FCP_AOC_3S02)
- command Line Scan, as needed (calls H_FCP_AOC_3S03)
- repeat until Scientific Operations Plan is complete

Summary of Constraints

1. Main STR powered
2. Main STR calibrated
3. All RWS which are in the Configuration In Use are
   powered
4. RWL biasing is already defined as part of maintenance
   period

Note:
The following science operations are possible:
  # Fine Pointing
    During a Fine Pointing the ACMS maintains Herschel
    pointing at a single celestial object (attitude) with
    full operational acuracy over a period of 1 second up
    to 18 hours.
  # Raster Pointing (with or without off-position)
    During a raster pointing, the ACMS moves Herschel to
    perform a raster of observations covering a small part
    of the celestial sphere. The ACMS controls the
    Herschel's attitude zith full operational accuracy
    over a period of 10 seconds to 30 minutes in each
    raster point. The maximum number of raster points is
    32x32 (lines x steps)
  # Scan (with or without off-position)
    During a scan, the ACMS moves Herschel to perform
    observations along a number of lines, each line
    traveled at a certain rat

Spacecraft Configuration

Start of Procedure

Spacecraft initial conditions:
- ACMS mode SCM

End of Procedure

Spacecraft finial conditions:
- ACMS mode SCM

Reference File(s)

Input Command Sequences

Status   : Version 1 - Unchanged
Last Checkin: 03/08/08

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Output Command Sequences

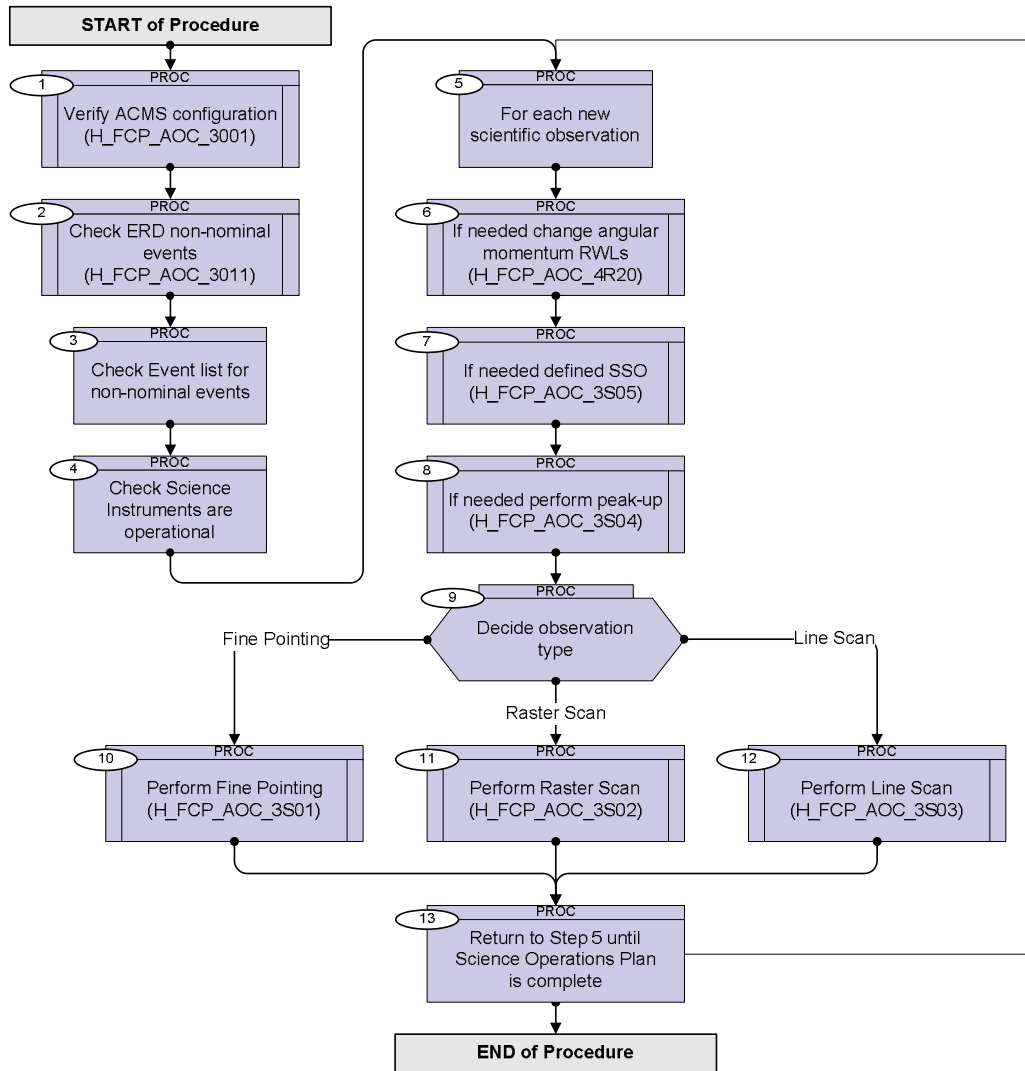| Referenced Displays |
|:---:|

ANDs   **GRDs**   **SLDs**

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
03/08/08	1	1 Created		dsalt-hp	

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Procedure Flowchart Overview

START of Procedure

1 PROC
Verify ACMS configuration
(H_FCP_AOC_3001)

2 PROC
Check ERD non-nominal
events
(H_FCP_AOC_3011)

3 PROC
Check Event list for
non-nominal events

4 PROC
Check Science
Instruments are
operational

5 PROC
For each new
scientific observation

6 PROC
If needed change angular
momentum RWLs
(H_FCP_AOC_4R20)

7 PROC
If needed defined SSO
(H_FCP_AOC_3S05)

8 PROC
If needed perform peak-up
(H_FCP_AOC_3S04)

9 PROC
Decide observation
type

Fine Pointing

Raster Scan

Line Scan

10 PROC
Perform Fine Pointing
(H_FCP_AOC_3S01)

11 PROC
Perform Raster Scan
(H_FCP_AOC_3S02)

12 PROC
Perform Line Scan
(H_FCP_AOC_3S03)

13 PROC
Return to Step 5 until
Science Operations Plan
is complete

END of Procedure

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Beginning of Procedure		
		PROC Procedure Properties *SSID :*		
1		*Verify ACMS configuration (H_FCP_AOC_3001)*		Next Step: 2
		Execute Procedure: **H_FCP_AOC_3001** **Verify SCM Configuration**		
2		*Check ERD non-nominal events (H_FCP_AOC_3011)*		Next Step: 3
		Execute Procedure: **H_FCP_AOC_3011** **EDR buffer dump**		
3		*Check Event list for non-nominal events*		Next Step: 4
4		*Check Science Instruments are operational*		Next Step: 5
5		*For each new scientific observation*		Next Step: 6
6		*If needed change angular momentum RWLs (H_FCP_AOC_4R20)*		Next Step: 7
		Execute Procedure: **H_FCP_AOC_4R20** **Perform RWL biasing in SCM**		
7		*If needed defined SSO (H_FCP_AOC_3S05)*		Next Step: 8
		Execute Procedure: **H_FCP_AOC_3S05** **Command SSO Tracking**		
8		*If needed perform peak-up (H_FCP_AOC_3S04)*		Next Step: 9
		Execute Procedure: **H_FCP_AOC_3S04** **Command Peak-up**		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
9		*Decide observation type*		Next Step: Fine Pointing 10 Raster Scan 11 Line Scan 12
10		*Perform Fine Pointing (H_FCP_AOC_3S01)*		Next Step: 13
		Execute Procedure: **H_FCP_AOC_3S01** **Perform SCM Fine Pointing**		
11		*Perform Raster Scan (H_FCP_AOC_3S02)*		Next Step: 13
		Execute Procedure: **H_FCP_AOC_3S02** **Perform SCM Raster Pointing**		
12		*Perform Line Scan (H_FCP_AOC_3S03)*		Next Step: 13
		Execute Procedure: **H_FCP_AOC_3S03** **Perform SCM scan**		
13		*Return to Step 5 until* *Science Operations Plan* *is complete*		Next Step: END

End of Procedure