



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 33, year 2023

from 14 AUG 2023 to 21 AUG 2023

1.0

1 General Comments

Activities scheduled for this week are those planned for the 33rd calendar week of 2023:

14 AUG 2023 to 21 AUG 2023 (DoYs 226 to 233).

The following routine activities were planned this week (see Gantt chart on next page and CRF n° 1138).

- One PMS Offset on 17 AUG 2023 (DoY 229), including three Short Calibrations at 05:35:00.0z, 05:35:34.8z, and 05:36:09.6z (orbit 72466).
- Local Oscillator Calibrations every 10 minutes.
- X band Passes over ESAC and Svalbard.

2 Mission Planning Deviations

Because of the CCU reset 18 AUG 2023 the following X band GS passes were not acquired (see Sect. 4):

Station	AoS	LoS	Duration
Xband_SVAL	2023-08-18T04:00:00	2023-08-18T04:10:05	604
Xband_SVAL	2023-08-18T07:21:55	2023-08-18T07:29:16	441
Xband_SVAL	2023-08-18T09:04:16	2023-08-18T09:09:18	301
Xband_SVAL	2023-08-18T10:46:37	2023-08-18T10:50:07	210
Xband_SVAL	2023-08-18T12:27:43	2023-08-18T12:32:15	272
Xband_SVAL	2023-08-18T14:07:51	2023-08-18T14:14:43	412

The following X band GS passes were acquired with the autodownlink function:

Station	AoS	LoS	Duration
Xband_ESAC	2023-08-18T05:30:46	2023-08-18T05:38:57	491



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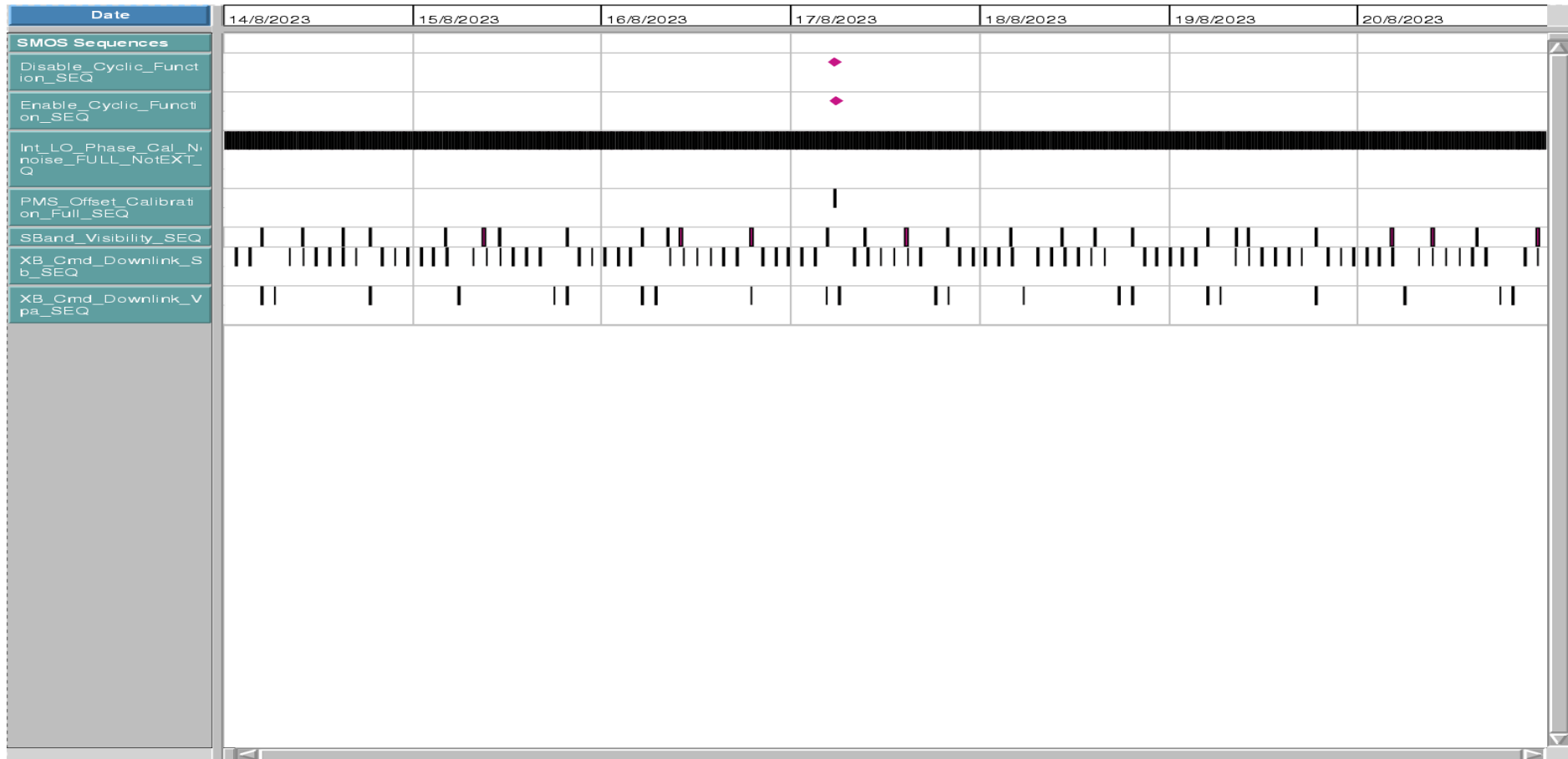
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Schedule Name: 2023_w33_cr ### Display start: 14-08-2023 00:00:00.000 ### Display end: 21-08-2023 00:00:00.000





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3 TC Failures

None.

4 On Board Anomalies

- MIRAS Correlator and Control Unit reset Friday 2023-08-18T02:23:58z (DoY 230), at the end of Svalbard X band GS pass 2023-08-18T02:20:22z. Anomaly was detected in real time by the FOS engineer on call, upon reception of S band GS pass STC-27 (AoS = 2023-08-18T03:51:01z). Following detection, anomaly was communicated to the CNES (who confirmed), DPGS, and KSAT teams. Recovery was agreed for S band GS pass KUX-17 (AoS = 2023-08-18T10:17:55z; CRF No. 1141), with S band GS pass HBX-07 (AoS = 2023-08-18T14:36:20z) as back-up.

Last MIRAS TM packet received before reset was time stamped 2023-08-18T02:23:58z. Reset was triggered by the standard OBSW error Task Overrun (information included in the Boot Report packet). Anomaly was preceded by the following set of alarm TM packets:

Event Description	Packet ID	Severity	Event Time
MM_Error_Counters_Acquisition_Failure	689	ALARM	2023.230.02.23.58
MM_Scrub_Frequency_Acquisition_Failure	690	ALARM	2023.230.02.23.58
MM_Address_Acquisition_Failure	684	ALARM	2023.230.02.23.58
MM_Science_Write_Failure	692	ALARM	2023.230.02.23.58
MM_Science_Write_Failure	692	ALARM	2023.230.02.23.58
MM_Science_Write_Failure	692	ALARM	2023.230.02.23.58

Nominal MIRAS X band GS dumps resumed Friday evening over Svalbard, 2023-08-18T15:47:36z. See Sect. 2 for a list of X band GS passes not acquired/autodownlinked, and Appendix A for a list of OOLs displayed in the FOS PLPC system immediately after the reset.

The values of the READ and WRITE pointers at the time of the reset were:

READ = 3393490 (Partition P7)

WRITE = 3653567 (Partition P8)

The anomaly was geolocated over the Barents Sea, midway between Scandinavia and the Archipelago of Svalbard:

LAT. = 72.79°

LONG. = 25.80°

This reset caused 226 s of science data losses.



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5 On Board Events Telemetry

The following RAM Single Bit errors befell this week:

Event Description	Packet ID	Severity	Event Time	Parameters
RAM Single Bit Error	730	WARNING	2023.227.21.12.32	215614C

6 FOS Systems Status

All FOS systems nominal.

7 Data Reception from CNES

All S band passes were correctly received from CNES and successfully processed by the FOS PLPC system.

8 X Band Data Reception in PXMF

None, all S band passes successfully received and processed.

9 Exceptional Activities

None.

10 AOB

None.



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APPENDIX A: OOLS

The following OOLs befell at the time the MIRAS instrument CCU reset 2023-08-18T02:23:58z (DoY 230; see Sect. 4):

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2023.230.04.22.37	2023.230.02.24.32	SPC02106	Instrument_Mode	Inst Init	Any-Mode
2023.230.04.22.37	2023.230.02.24.32	SPM11167	H1 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM12172	H2 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM14167	A1 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM15167	A2 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM16167	A3 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM17167	B1 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM18167	B2 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM19167	B3 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM20167	C1 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM21167	C2 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	SPM22167	C3 LO_Locking	UNLOCK	LOCK
2023.230.04.22.37	2023.230.02.24.32	XNIRABST	NIR AB VALID ST	NOT-OK	OK
2023.230.04.22.37	2023.230.02.24.32	XNIRBCST	NIR BC VALID ST	NOT-OK	OK
2023.230.04.22.37	2023.230.02.24.32	XNIRCAST	NIR CA VALID ST	NOT-OK	OK