



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 19, year 2020

from 04 MAY 2020 to 18 MAY 2020

1.0

1 General Comments

Activities scheduled for this week are those planned for the 19th calendar week of 2020:

04 MAY 2020 to 11 MAY 2020 (DOYs 125 to 132).

Mission Planning for this week was calculated together with that of week 20, year 2020. The current report contains only the events that occurred during week 19, year 2020. The Gantt chart included in this report is the one containing the two weeks combined.

The following routine activities were planned this week (see Gantt chart on next page and CRF 881).

- One PMS Offset on 07 MAY 2020 (DOY 128), including three Short Calibrations at 07:10:00.0z, 07:10:34.8z, and 07:11:09.6z (orbit 55344).
- Local Oscillator Calibrations every 10 minutes.
- X band Passes over ESAC and Svalbard.

2 Mission Planning Deviations

As per ESA-CNES management agreement reached 16 MAR 2020 — in view of limited operations because of the ongoing COVID-19 pandemic— CRF 881 spanned —exceptionally— a two-week period.

Due to the MIRAS CCU reset that happened on the 10th of May 2020, the following two X-Band passes were lost (see section 4 for further details):

STATION	AOS	LOS	DURATION
SVAL	2020-05-10T09:21:51	2020-05-10T09:26:30	278
SVAL	2020-05-10T11:04:02	2020-05-10T11:07:32	209



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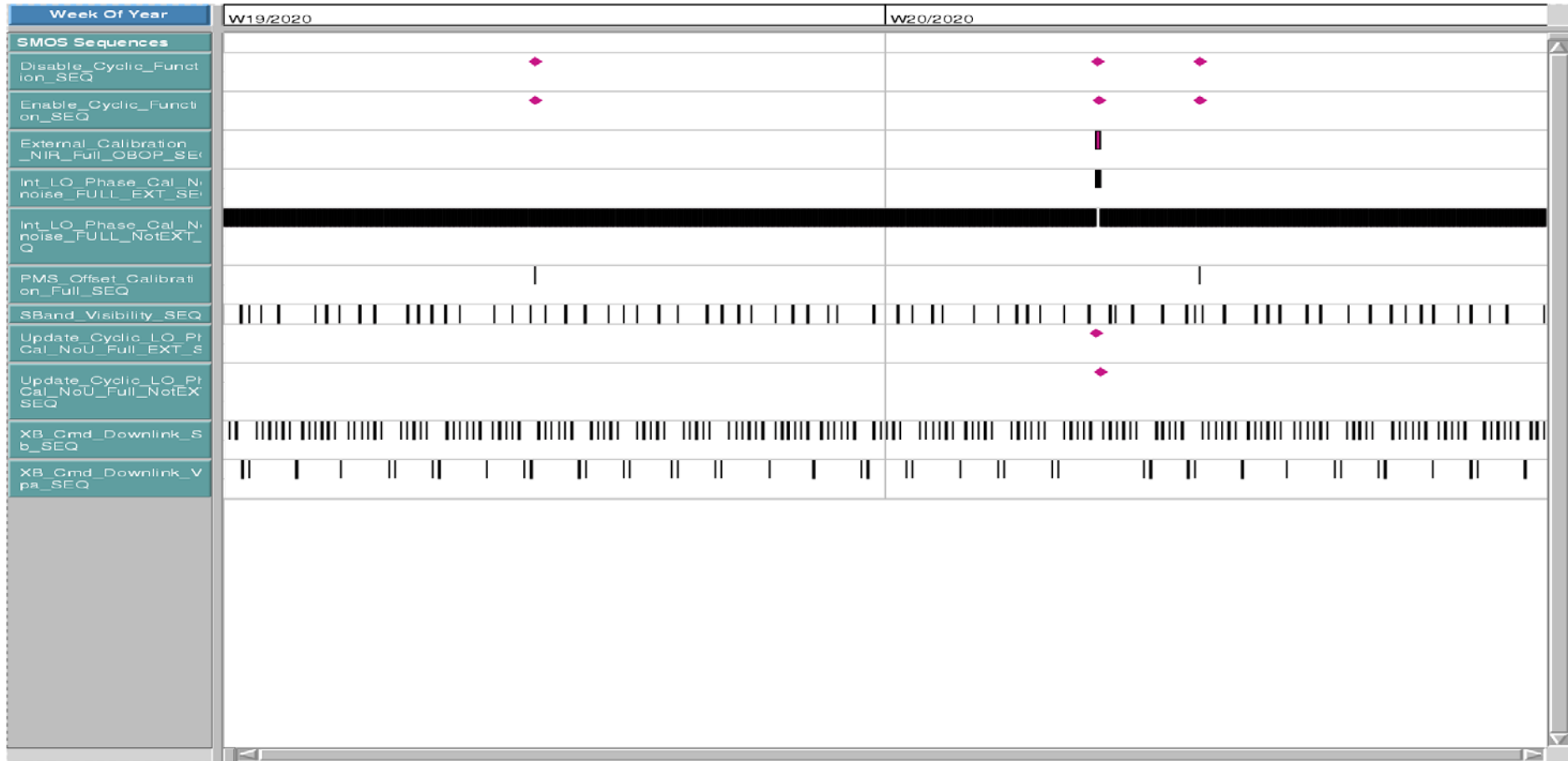
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Schedule Name: 2020_w19_w20_cr ### Display start: 04-05-2020 00:00:00.000 ### Display end: 05-05-2020 09:36:00.000





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3 TC Failures

None.

4 On Board Anomalies

- A new MIRAS CCU reset happened on 2020-05-10T07:44:13z. The reset took place at the end of X-Band Svalbard pass with AOS=07:39:24z. The possible reset was initially notified by KSAT team to FOS oncall engineer by a telephone call at 11:13z and after the second consecutive failure of the X-Band acquisition. The reset was finally confirmed by CNES upon reception of S-Band pass IVK-7 with AOS at 09:19:01z. FOS on call engineer confirmed the reset with CNES oncall support in a separated call at 11:17z.

Recovery took place according to CRF-881 issued at the time of the nominal planning of calendar weeks 18 and 19 and uploaded by CNES to the spacecraft on the 10 of May during S-Band pass KER-11 (AOS=11:39:01).

According to this CRF, resume of X-Band activities took place on the 10 of May at 12:45:29z (DPGS and KSAT teams were already informed in an email sent by ESACSMOSFOS at 12:30z)

The list of Events packets received immediately before the reset was as follows:

DateTime	Event Packet
2020-05-10T07:39:59	XBand Powered On
2020-05-10T07:40:23	MM Full Dump Start
2020-05-10T07:42:54	LO Cal NoUN FULL NoEXT OBOP 29 Started
2020-05-10T07:42:58	Mode Change To Full Polarisation
2020-05-10T07:42:59	Mode Change To Full Polarisation
2020-05-10T07:43:00	LO Cal NoUN FULL NoEXT OBOP 29 Completed

and intermediately after, the instrument reset. As reported in the instrument *Boot report* packet, the reason for the reset was the usual "Task Overrun" error.

The list of parameter that went out of limits on the FOS PLPC system can be found in Appendix-A of this report.

At the time of the anomaly, the position of the MM write and read pointers was as follows:

Write Pointer= 1467240; MM partition P3

Read Pointer= 1174898; MM partition P2

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The anomaly took place over Ellesmere island (north of Canada) at the following geographical coordinates:

Latitude = 80.09°

Longitude = 276.66°

- MIRAS instrument MM, partition P3, latched up 2020-05-07T15:22:54,855z (DOY 128). The following parameters went out of limits in the PLPC system:

2020.128.15.22.54,855z DMASME09 LU Switch P3

2020.128.15.22.54,855z DMASME37 SDD LU Detected

This anomaly was geolocated in the confluence of the Atlantic and Indian Oceans, midway between Antarctica and South Africa:

Latitude = -54.54°

Longitude = 27.63°

There were no science data losses associated with this anomaly because it affected partition P3, while the Read and Write pointers were both on partition P8.

The latch-up fixed by itself at the time of the CCU reset on the 10th of May 2020. Because of that, CRF 883 initially required to fix the latch-up anomaly on the 12th of May and scheduled to be mailed out in the morning of 11 MAY 2020, was never sent to CNES nor executed. At the time of the anomaly the position of the MM pointers were as follows:

READ = 3563497 (partition P8)

WRITE = 3665645 (partition P8)

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	WARN	2020-05-05T10:50:54	23628A0

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.



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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

On the 10th of May and during the execution of the CCU recovery procedure, the following TM parameter went temporary and out of limits.

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2020-05-10T21:29:23	2020-05-10T11:41:24	NTLHK022	ITL Ena State	Disabled	Enabled

At the time of the CCUU reset, the following list of parameters went temporary our of limits on FOS PLPC system.

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM22167	C3 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM21167	C2 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM20167	C1 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM19167	B3 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM18167	B2 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM17167	B1 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM16167	A3 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM15167	A2 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM14167	A1 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM12172	H2 LO_locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPM11167	H1 LO_Locking	UNLOCK	LOCK
2020-05-10T09:56:27	2020-05-10T07:44:13	SPC02106	Instrument_Mode	Inst Init	Any mode



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2020-05-10T09:56:27	2020-05-10T07:44:13	XNIRABST	NIR AB VALID ST	NOT-OK	OK
2020-05-10T09:56:27	2020-05-10T07:44:13	XNIRBCST	NIR BC VALID ST	NOT-OK	OK
2020-05-10T09:56:27	2020-05-10T07:44:13	XNIRCAST	NIR CA VALID ST	NOT-OK	OK

On the 7th of May the Mass Memory Latch-up of partition P3 generated the two following out of limits on the FOS PLPC system.

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2020-05-07T20:12:40	2020-05-07T15:22:54	DMASME37	SDD LU Detected	FALSE	TRUE
2020-05-07T20:12:40	2020-05-07T15:22:54	DMASME09	LU Switch P3	OFF	ON