



## Operations Notes

FOS Team @ ESAC

Reported by:

*J. Fauste/J.M. Castro Cerón*

Topic:

Date:

Issue:

**FOS Report for week 13, year 2020**

from 23 MAR 2020 to 06 APR 2020

**1.0**

## 1 General Comments

Activities scheduled for this week are those planned for the 14<sup>th</sup> calendar week of 2020:

30 MAR 2020 to 06 APR 2020 (DOYs 090 to 097).

Mission Planning for this week was scheduled together with that of week 13, year 2020. The current report contains only the events that occurred during week 14, 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 874).

- One PMS Offset on 02 APR 2020 (DOY 093), including three Short Calibrations at 06:34:30.0z, 06:35:04.8z, and 06:35:39.6z (orbit 54739).
- 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 874 spanned —exceptionally— a two-week period and included no ECM (**i.e. the NIR of 01 APR 2020 was cancelled/removed**).

Also due to the CCU reset that happened on the 2<sup>nd</sup> of April, the list of XBand passes reported in section 4 of this report were not executed on board.



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Schedule Name: 2020\_w13\_w14\_cr ### Display start: 23-03-2020 00:00:00.000 ### Display end: 24-03-2020 09:36:00.000





### 3 TC Failures

None.

### 4 On Board Anomalies

- A new MIRAS CCU reset happened on 2020-04-04T21:07:34z. The reset took place at the end of XBand Svalbard pass with AOS=21:04:05z. The anomaly was initially notified by KSAT team to FOS oncall engineer by a missing phone call at 01:24 utc. KSAT also alerted of the possible anomaly in an email sent on the 4 of April at 23:32 utc. The reset was finally confirmed by the CNES oncall engineer upon reception of SBand pass ASX-4 with AOS 08:56:59z. Later on at 04:39z, CNES notified the anomaly by a phone call to the FOS oncall engineer.

The recovery took place according to CRF-878 issued at the time of the nominal mission planning for calendar week 15 and uploaded by CNES to the spacecraft on the 5 of April during SBand pass KUX-4 (AOS=08:56:59). According to this CRF, resume of XBand activities took place on the 5 of April at 12:07 utc (DPGS and KSAT teams were already informed in an email sent by ESACSMOSFOS at 06:02 utc)

The list of Events packets received immediately before the reset and the list of out of limits received at the time of the reset can be respectively found in section 5 and Appendix A of this report.

The following list of XBand passes were not received because of this CCU reset:

Station	AOS	LOS	Duration
SVAL	2020-04-04T22:42:35	2020-04-04T22:52:51	615
SVAL	2020-04-05T00:21:15	2020-04-05T00:31:35	619
SVAL	2020-04-05T02:00:05	2020-04-05T02:10:32	627
SVAL	2020-04-05T03:39:29	2020-04-05T03:49:45	616
ESAC	2020-04-05T05:10:53	2020-04-05T05:18:34	461
ESAC	2020-04-05T06:50:51	2020-04-05T06:56:39	347
SVAL	2020-04-05T08:43:17	2020-04-05T08:48:48	330
SVAL	2020-04-05T10:25:45	2020-04-05T10:29:23	218

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

*Write Pointer=3413042, MM partition P7*

*Read Pointer=3184038, MM partition P7*



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The anomaly took place over Arctic ocean over the following geographical coordinates:

Latitude =  $81.60^{\circ}$

Longitude =  $44.64^{\circ}$

## 5 On Board Events Telemetry

Immediately before the CCU reset that happened on the 4<sup>th</sup> of April the following alarm packets were received on the FOS PLPC system:

Event Description	Packet ID	Severity	Event Time
MM_Partition_Configuration_Acquisition	687	ALARM	2020-04-04T21:07:33
MM_Error_Counters_Acquisition_Failure	689	ALARM	2020-04-04T21:07:33
MM_Scrub_Frequency_Acquisition_Fail	690	ALARM	2020-04-04T21:07:33
MM_Address_Acquisition_Failure	684	ALARM	2020-04-04T21:07:33
MM_Science_Write_Failure	692	ALARM	2020-04-04T21:07:33
MM_Science_Write_Failure	692	ALARM	2020-04-04T21:07:34
MM_Science_Write_Failure	692	ALARM	2020-04-04T21:07:34

The following RAM Single Bit errors befell this week:

Event Description	Packet ID	Severity	Event Time	Parameters
RAM single Bit Error	730	WARN	2020-04-04T19:11:31	20AD960
RAM single Bit Error	730	WARN	2020-04-05T02:47:48	23A9634

## 6 FOS Systems Status

- As part of the Covid-19 crisis, the FOS team has setup a new emergency control centre able to remotely connect and handle PLPC and Mission Planning systems. The idea of this MINIFOS system is to only use it in case of strong emergencies and if the access to ESAC gets totally forbidden.
- On the 2<sup>nd</sup> of April, GMV remotely installed a new version of the PLPC EXT *summaryplan.py* script used to extract mission planning information from the TC groups sent to CNES.

## 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.



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### 9 Exceptional Activities

None.

### 10 AOB

None.



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### APPENDIX A: OOLs

During the execution of the nominal CCU recovery procedure the MIRAS ITL got nominally disabled and the following out of limit received on ground.

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2020-04-05T11:28:14	2020-04-05T08:22:20	NTLHK022	ITL Ena State	Disabled	Enabled

At the time of the CCU reset on the 4<sup>th</sup> of April the following list of out of limits were received on the FOS PLPC system

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM22167	C3 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM21167	C2 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM20167	C1 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM19167	B3 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM18167	B2 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM17167	B1 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM16167	A3 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM15167	A2 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM14167	A1 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM12172	H2 LO_locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPM11167	H1 LO_Locking	UNLOCK	LOCK
2020-04-05T04:02:08	2020-04-04T21:08:07	SPC02106	Instrument_Mode	Inst Init	Any mode



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2020-04-05T04:02:08	2020-04-04T21:08:07	XNIRABST	NIR AB VALID ST	NOT-OK	OK
2020-04-05T04:02:08	2020-04-04T21:08:07	XNIRBCST	NIR BC VALID ST	NOT-OK	OK
2020-04-05T04:02:08	2020-04-04T21:08:07	XNIRCAST	NIR CA VALID ST	NOT-OK	OK