



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 09, year 2022

from 28 FEB 2022 to 07 MAR 2022

1.0

1 General Comments

Activities scheduled for this week are those planned for the 09th calendar week of 2022:

28 FEB 2022 to 07 MAR 2022 (DOYs 059 to 066).

The following routine activities were planned this week (see Gantt chart on next page and CRF 1032).

- One Warm NIR Calibration on 02 MAR 2022 (DOY 061) with ETO 04:28:06z (orbit 64796; DESCENDING: thermally UNSTABLE) and with the following expected calibration values:

B.T.	=	3.74°
R.M.S.	=	0.12
Sun elevation	=	9.89°
Moon elevation	=	7.97°
R.A.	=	64.91°
DEC.	=	-28.74°
- Two LONG Calibrations on 02 MAR 2022 (DOY 061), which encompassed two ascending semi-orbital periods starting at 14:30:00z (orbit 64802) and 16:12:30z (orbit 64803).
- Local Oscillator Calibrations every 10 minutes.
- X band Passes over ESAC and Svalbard.

2 Mission Planning Deviations

None.



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3 TC Failures

None.

4 On Board Anomalies

- On the 6 of March 2022, XBand pass over Svalbard with foreseen AOS at 14:38z was not performed because XBand transmitter did not switch on as it should be. This command was not executed because it was autonomously deleted by the OBSW at the time of its scheduled execution. Any operational mistake has been discarded since all the TCs were correctly and successfully uploaded and no specific TCs to delete ITL commands were uplinked from ground. At the time of the TX switch on execution, the OBSW generated an event packet type 5,1 (ID=422) "*TL_Delete_Report*" indicating that the command to switch on the XBand transmitter was deleted from the onboard ITL queue. No further error packets were received.

This type of packet is nominally received when the onboard ITL gets disable because of an OCM or CAM execution meaning that TCs have not been executed and therefore must be deleted from the onboard queue. Looking at the OBSW documentation it seems that this packet can be in general generated if a TC is overdue and has not been executed which clearly falls into the two previous cases but for sure not for this one. The problem could be related with some onboard timing issues but no time deviations or delays could be found.

Important thing to notice is that after that anomaly, remaining XBand passes were nominally received and the instrument was behaving fully nominal.

FOS checked all previous cases during the mission where the *TL_Delete_Report* TM packet was issued and for all of them an operational explanation could be found (OCM, CAM, Gyro Calibration or uplink problems) Unfortunately the only one without any operational explanation is the one here.

- The MIRAS CMN, unit B3, unlocked 2022-03-04T21:26:54,244z (DOY 063). This anomaly was geolocated over the Estado de Mato Grosso (Brazil):
 - Latitude* = -14.38°
 - Lingitude* = 306.41°



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Both parameters, output power SPM19162 and locking status SPM19167, went out of limits in the FOS PLPC system. The anomaly recovered in 3 epochs.

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	2022-03-05T11:56:25	22C63FC

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, with the following exception:

- On the 2nd of March 2022 and for SBand pass STC-03 there was short TM gap from 2022-03-02T14:28:14.442 to 2022-03-02T14:28:19.242. No TM data was recovered from XBand side due to the short duration of this gap.

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 CMN unlock of B3 unit generated the following temporary out of limits on the PLPC system

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2022-03-05T05:28:17	2022-03-04T21:26:54	SPM19167	B3 LO_Locking	UNLOCK	LOCK
2022-03-05T05:28:17	2022-03-04T21:26:54	SPM19162	B3 LO_Out_Power	NOT-OK	OK