



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 38, year 2017

from 18 SEP 2017 to 25 SEP 2017

1.0

1 General Comments

Activities scheduled for this week are those planned for the 38th calendar week of 2017:

18 SEP 2017 to 25 SEP 2017 (DOYs 261 to 268).

The following routine activities were planned this week (see Gantt chart on next page and CRF 685):

- One Gyro Calibration (PROTEUS/CNES) on 20 SEP 2017 (DOY 263), starting 13:15z, ending 14:55z (orbit 41434; see Sect. 10 for further details).
- One PMS Offset on 21 SEP 2017 (DOY 264), including three Short Calibrations at 09:20:30.0z, 09:21:04.8z, and 09:21:39.6z (orbit 41445).
- Local Oscillator Calibrations every 10 minutes.
- X band Passes over ESAC and Svalbard.

2 Mission Planning Deviations

Due to the MIRAS CCU reset that took place on the 20th of September, see section 5, the following X-Band Ground Station passes were not acquired on ground:

Station	AOS	LOS	Duration
Xband_SVAL	2017-09-19T08:04:27	2017-09-19T08:10:51	384
Xband_SVAL	2017-09-19T09:46:58	2017-09-19T09:51:07	249
Xband_SVAL	2017-09-19T11:28:52	2017-09-19T11:32:30	217



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Schedule Name: 2017_w38_cr ### Display start: 18-09-2017 00:00:00.000 ### Display end: 25-09-2017 00:00:00.000

Date	18/9/2017	19/9/2017	20/9/2017	21/9/2017	22/9/2017	23/9/2017	24/9/2017
SMOS Sequences							
Disable_Cyclic_Function_SEQ				◆			
Enable_Cyclic_Function_SEQ				◆			
Int_LO_Phase_Cal_Noise_FULL_NotEXT_Q	[Solid black bar]						
PMS_Offset_Calibration_Full_SEQ							
SBand_Visibility_SEQ	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]
XB_Cmd_Downlink_Sb_SEQ	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]
XB_Cmd_Downlink_Vpa_SEQ	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]	[Vertical bars]



3 TC Failures

None.

4 Unforeseen Out of Limits (OOLs)

Several Out of Limits were issued by the FOS PLPC system at the time of the MIRAS CCU reset on the 20th of September 2017. Further details can be found on Appendix-A of this report.

5 On Board Anomalies

- The MIRAS instrument CCU reset on 2017-09-19T06:16:16.284 (DOY 262). The reset took place during the second ESAC XBand pass of the day (AOS=06:12:05z, LOS=06:20:00z) and it was confirmed upon the reception of the first S band morning pass on the 19 of September(KRX-16, AOS=06:18:23z, LOS=06:29:54).

The reset happened at the end of the ESAC XBand pass commencing on 2017-09-19T06:12:05z. Said GS pass was scheduled for a theoretical duration of 475 seconds. The reset occurred 224 seconds after station AOS, and before the switch off of the X band antenna, scheduled on 2017-09-19T06:20:00z. The last TM packet received before the reset was time stamped at 2017-09-19T06:15:42.028z. As detailed on the instrument boot report packet, issued immediately after the reset, the cause of the anomaly as in all previous cases was a Task Overrun error.

MIRAS re-planning was prepared immediately after the reset and included as part of CRF-687. That replanning together with the execution of the CCU recovery procedure, was uploaded by CNES during SBand pass (KUX -25, AOS=09:19:17z, LOS=09:33:56z). As per this re-planning, nominal MIRAS X band GS dumps were resumed on 2017-09-19, at 13:09:31z (Svalbard pass)

The sequence of events packets leading to the CCU reset was as follows

On Board Time	Type	TM Packet Description
2017-09-19T06:12:08	EVENT	XBand Powered On
2017-09-19T06:12:32	EVENT	MM Full Dump Start

224 seconds after this last on board event the reset took place. PLPC Out of limits displaying the reset can be found in Appendix-A.

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



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Read = 943844, MM Partition P2

Write = 1198795, MM Partition P2

6 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	2017-09-19T22:15:00	20EA59C
RAM single Bit Error	730	WARN	2017-09-19T06:16:16	21CF9EC
RAM single Bit Error	730	WARN	2017-09-18T00:11:53	21CF9EC

7 FOS Systems Status

- A new version of the FOS MIB Database version 6.2, was installed on PLPC systems on the 21 of September. This new version contains a change on the limits for parameter NCMN3T03.

8 Data Reception from CNES

All S band passes were correctly received from CNES and successfully processed by the FOS PLPC system, with the following exceptions:

- For S-Band pass STC-9 (AOS=18:54:36z, LOS=19:08:53z) the following three PUS telemetry gaps were detected on PLPC system:
 - from 2017-09-18T16:09:06z to 2017-09-18T16:09:10z*
 - from 2017-09-18T17:21:42z to 2017-09-18T17:21:46z*
 - from 2017-09-18T17:21:58z to 2017-09-18T17:22:03z*

9 X Band Data Reception in PXMf

None, all S band passes successfully received and processed.

10 Exceptional Activities

- A PROTEUS Gyro calibration was performed on the 20 of September from 13:11:55z to 14:52:44z. MIRAS Science telemetry on that interval was marked with an External APID.

11 AOB

None.



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APPENDIX A: OOL

At the time of the Gyro Calibration and as part of the instrument configuration for that platform calibration, the onboard ITL was made temporary disable, that event is marked by the fact the TM parameter NTLHK022 went OOL on FOS PLPC system

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2017-09-20T16:57:49	2017-09-20T13:11:47	NTLHK022	ITL Ena State	Disabled	Enabled

As part of the instrument CCU recovery procedure, the onboard ITL is also made disabled for a while, the following OOL was also seen at that time on PLPC system

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2017-09-19T12:38:52	2017-09-19T09:21:28	NTLHK022	ITL Ena State	Disabled	Enabled

The MIRAS CCU recovery procedure generated the following Out of Limits on PLPC system.

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM22167	C3 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM21167	C2 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM20167	C1 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM19167	B3 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM18167	B2 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM17167	B1 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM16167	A3 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM15167	A2 LO_Locking	UNLOCK	LOCK



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2017-09-19T06:58:48	2017-09-19T06:16:16	SPM14167	A1 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM12172	H2 LO_locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPM11167	H1 LO_Locking	UNLOCK	LOCK
2017-09-19T06:58:48	2017-09-19T06:16:16	SPC02106	Instrument_Mode	Inst Init	Any Other Mode
2017-09-19T06:58:48	2017-09-19T06:16:16	XNIRABST	NIR AB VALID ST	NOT-OK	OK
2017-09-19T06:58:48	2017-09-19T06:16:16	XNIRBCST	NIR BC VALID ST	NOT-OK	OK
2017-09-19T06:58:48	2017-09-19T06:16:16	XNIRCAST	NIR CA VALID ST	NOT-OK	OK