



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 26, year 2016

from 27 JUN 2016 to 04 JUL 2016

1.0

1 General Comments

Activities scheduled for this week are those planned for the 26th calendar week of 2016:

27 JUN 2016 to 04 JUL 2016 (DoYs 179 to 186).

The following routine activities were planned this week (see Gantt chart on next page and CRF 583):

- One PMS Offset on 30 JUN 2016 (DoY 182), including three Short Calibrations at 06:38:00.0z, 06:38:34.8z, and 06:39:09.6z (orbit 34997).
- One Warm NIR Calibration on 02 JUL 2016 (DoY 184) with ETO 06:27:00z (orbit 35026) and with the following expected calibration values:

B.T.	= 3.5311°
R.M.S.	= 0.1431
Sun Elevation	= 9,3437°
Moon elevation	= -17.6552°
R.A.	= 196.73°
DEC.	= 36.20°
- Two LONG Calibrations on 02 JUL 2016 (DoY 184), which encompassed two orbital periods starting at 15:22:45,0z (orbit 35031) and 17:02:45,0z (orbit 35032).
- Local Oscillator Calibrations every 10 minutes.
- X band Passes over ESAC and Svalbard.

2 Mission Planning Deviations

- Due to an antenna problem on Svalbard station, XBand pass with AOS=2016-06-30T04:01:44z and LOS=2016-06-30T04:11:43z was lost.



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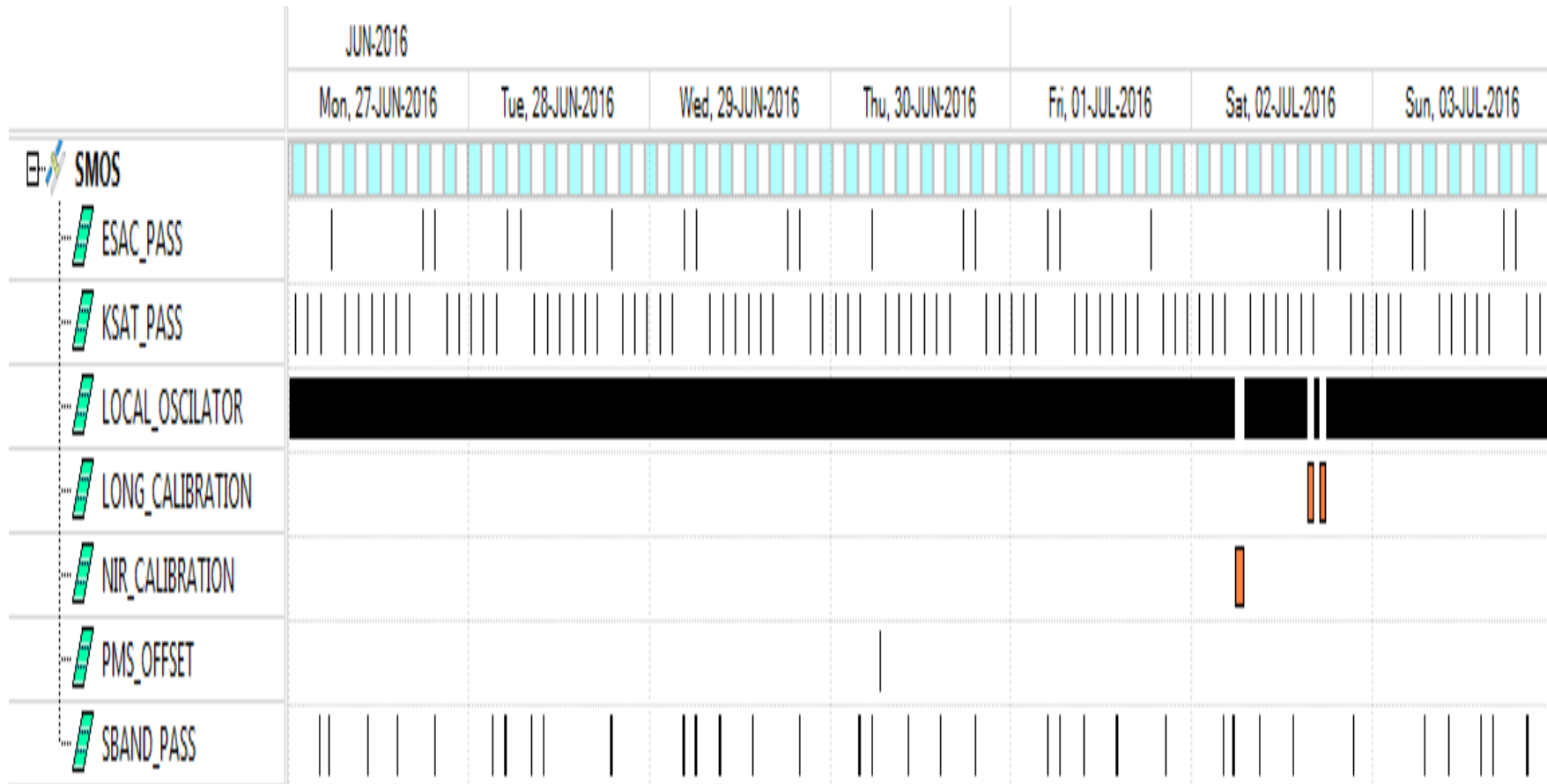
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3 TC Failures

None.

4 Unforeseen Out of Limits (OOLs)

- Two different set of Out of Limits were received at the time of the two MIRAS anomalies that happened during this week (see section 5 and Appendix-A for further details)

5 On Board Anomalies

- A new Mass Memory latch up happened for partition P9 on day 2016-07-02T21:44:08.366z. The anomaly took place over South America and it was recovered via CRF-586 (procedure PRO-CRP-800) at 2016-07-04T12:30:00z. At the time of the anomaly the positions of the two MM pointers were:
Write Pointer=2867099 (partition P6),
Read Pointer=2781163 (partition P6)
- A Double Bit memory error in Mass Memory partition P11 happened on day 2016-06-30T16:09:19.687z. No impact on science data since the affected partition was one of the spare Mass Memory partitions. The anomaly recovery itself and no FOS operational action was required.

6 On Board Events Telemetry

- No relevant onboard event packets, alarm and error packets, were received during this week.

7 FOS Systems Status

- On 2016-06-30 around 09:30z, a power network intervention was performed on the DMZ to substitute the old power line of the DMZ switches. As consequence of that some network drop outs were observed on the SMTA and PLPCEXT machines. After that some surrounding effects appeared and as consequence of that the nominal communication line with CNES went down and the data transfer for SBand pass KUX-32 performed with the ISDN line.
- On 2016-06-28 around 11:00z, the *WebMUST* system stopped working and the system established again by the restart of the *Tomcat* service.



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:

- Telemetry data received as part of HBK-13 pass (AOS=2016-06-28T03:10:58z, LOS=2016-06-28T03:23:12z), contained a TM gap in both PUS and HKTM telemetry from 2016-06-27T21:12:46z to 2016-06-28T03:13:09z. New TM files with no gaps were again sent from CNES and ingested into the PLPC system around 2016-06-28T08:15:00z. Unfortunately this was not notified well in advance and there was no time on the FOS side to restart the TCO task before the arrival of those files. As consequence of that lots of *"Time couple OBET lower than expected"* error messages appeared on PLPC Event Logger task. After the processing of these files the TCO task was again restarted in cold mode to avoid the same type of messages during the reception of the following pass KUX-29 (AOS=2016-06-28T08:20:14z, LOS=2016-06-28T08:32:22z). After further checking it was seen that the E_HKTM files sent after the anomaly were also wrong and as consequence of that a dedicated email was sent from FOS to CNES on the 29 of June requesting again good E_HKTM files. This was performed around 2016-06-29T14:30z.
- On 2016-06-29, SBand GS pass STC-11 (AOS=04:30:44z, LOS=04:44:44) contained the following nine different MIRAS PUS Telemetry gaps:

Start TM Gap	End TM Gap
2016-06-28T18:56:14.508z	2016-06-28T18:56:33.708z
2016-06-28T18:58:01.309z	2016-06-28T18:58:24.109z
2016-06-28T19:01:10.910z	2016-06-28T19:01:27.710z
2016-06-28T19:36:15.724z	2016-06-28T19:36:32.524z
2016-06-28T19:39:40.925z	2016-06-28T19:40:01.325z
2016-06-28T19:42:19.326z	2016-06-28T20:28:21.761
2016-06-28T20:28:01.361	2016-06-28T20:28:52.962
2016-06-28T20:28:52.962	2016-06-28T20:28:52.962
2016-06-28T20:28:58.962	2016-06-28T20:29:20.562

All these gaps were recovered on the SMTA-MUST telemetry archive using the PXMF XBand system.

- A total of thirteen PUS Telemetry gaps appeared as part of the data files of SBand GS pass STC-12 (AOS=2016-06-30T03:53:25, LOS=2016-06-30T04:05:51z). The list of gaps was as follows:



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Start TM Gap	End TM Gap
2016-06-30T19:58:11.782z	2016-06-30T19:58:29.782z
2016-06-30T20:09:45.386z	2016-06-30T20:10:05.787z
2016-06-30T20:30:35.795z	2016-06-30T20:30:59.795z
2016-06-30T20:31:06.995z	2016-06-30T20:31:29.795z
2016-06-30T20:33:23.796z	2016-06-30T20:33:44.196z
2016-06-30T20:33:56.196z	2016-06-30T20:34:15.398z
2016-06-30T20:34:27.396z	2016-06-30T20:34:46.596z
2016-06-30T20:34:54.996z	2016-06-30T20:35:18.996z
2016-06-30T20:35:26.196z	2016-06-30T20:35:48.997z
2016-06-30T20:35:57.397z	2016-06-30T20:36:20.197z
2016-06-30T20:36:28.597z	2016-06-30T20:36:50.197z
2016-06-30T20:36:59.797z	2016-06-30T20:37:21.397z
2016-06-30T20:37:29.797z	2016-06-30T20:37:51.397z

All these gaps were recovered on the SMTA-MUST telemetry archive using the PXMF XBand system.

9 X Band Data Reception in PXMF

- Due to the two SBand reception problems reported in section 8 of this report, the PXMF system was used to fill on the SMTA-MUST system all the MIRAS PUS Telemetry gaps.

10 Exceptional Activities

None.

11 AOB

None.



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APPENDIX A: OOLs

The following parameter went out of limits on PLPC system at the time of the Mass Memory Errors on partition P11

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.182.19.50.05.238	2016.182.16.09.19.687	DMASME50	DB Err In P11	FALSE	TRUE

At the time of the Mass Memory Latch up in partition P9 the following two parameters went Out of Limits on PLPC system:

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.185.07.22.50.591	2016.184.21.44.08.366	DMASME03	LU Switch P9	OFF	ON
2016.185.07.22.50.588	2016.184.21.44.08.366	DMASME37	SDD LU Detected	FALSE	TRUE

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