



## Operations Notes

FOS Team @ ESAC

Reported by:

*J. Fauste/J.M. Castro Cerón*

Topic:

Date:

Issue:

**FOS Report for week 24, year 2016**

from 13 JUN 2016 to 20 JUN 2016

**1.0**

## 1 General Comments

Activities scheduled for this week are those planned for the 24<sup>th</sup> calendar week of 2016:

13 JUN 2016 to 20 JUN 2016 (DoYs 165 to 172).

The following routine activities were planned this week (see Gantt chart on next page and CRF 576):

- One Warm NIR Calibration on 15 JUN 2016 (DoY 167) with ETO 07:29:25z (orbit 34782) and with the following expected calibration values:

B.T.	= 3.4867°
R.M.S.	= 0.1121
Sun Elevation	= 8.4096°
Moon elevation	= 40.8919°
R.A.	= 179.51°
DEC.	= 33.99°
- One PMS Offset on 16 JUN 2016 (DoY 168), including three Short Calibrations at 07:23:00.0z, 07:23:34.8z, and 07:24:09.6z (orbit 34796).
- 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 Unforeseen Out of Limits (OOLs)

Several Out of Limits alarms were received during this operational week and always linked to the four MIRAS anomalies described in section 5 of this report.

### 5 On Board Anomalies

The following MIRAS anomalies happened during this reporting period:

- MIRAS suffered a new CMN unlock on 2016-06-19T10:48:27.097z (OBT) affecting CMN H1 unit. The anomaly was geolocated over the North of Chile at the following geographical coordinates:

LAT. = -17.805911  
LONG. = 290.609751

Only locking status parameter, SPM11167, went out of limits in the FOS PLPC system. The anomaly recovered itself after few seconds.

- MIRAS suffered another new CMN unlock on 2016-06-17T08:46:33.735z (OBT) affecting unit H3. The anomaly was geolocated over the South East coast of Brazil (SAA):

LAT. = -16.596261  
LONG. = 320.888774

Both parameters, output power SPM13162 and locking status SPM13167, went out of limits in the FOS PLPC system. The anomaly recovered in 11 Epochs.

- A Mass Memory latch-up impacted partition P9 on 2016-06-16T11:04:26.961z. The following parameters went out of limits in the PLPC system:

<i>2016.168.11.04.26.961</i>	<i>DMASME03</i>	<i>LU Switch P9</i>
<i>2016.168.11.04.26.961</i>	<i>DMASME37</i>	<i>SDD LU Detected</i>

This anomaly was geolocated over the Chilean Atacama Desert at the following geographical coordinates:

LAT. = -20.630766  
LONG. = 287.078540



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There was no science data losses associated with this anomaly because it affected one of the spare partitions, while both the Read and the Write pointers were on P6. Recovery took place on 2016-06-20T13:30:00 via CRF No. 582 (17 JUN 2016 was a public holiday for CNES).

- MIRAS suffered another new CMN unlock on 2016-06-14T10:41:20,472z (OBT) affecting unit H3. The anomaly was geolocated over the Chilean Atacama Desert:

LAT. = -23,995261

LONG. = 293,437463

Both parameters, output power SPM13162 and locking status SPM13167, went out of limits in the FOS PLPC system. The anomaly recovered in 2 Epochs.

## 6 On Board Events Telemetry

No relevant onboard events were received during this reporting week.

## 7 FOS Systems Status

All FOS systems behaved nominally with the following exceptions:

- The PLPC system lost and recover quickly the connection to the TCO server task at 2016.170.08.39.21 (ERT). At that time the following Error message appears on the SCOS Event Logger task:

*"SYSTEMLost connection to TCO server"*

The error did not produce any surrounding effect on the system since the Time Correlation task did not crash and no packets were stored under Data Stream 4. The FOS oncall Engineer contacted the DPGS operator to verify that the TCO task did not crash. The DPGS operator verified that everything was nominal.

- On 15 of June from 09:42 UTC onwards, there was a general EONET-ESA network failure affecting all FTP connections between ESA and external sites. As consequence of that the connectivity and data transfer between CNES and FOS was performed over the backup ISDN line.
- A general EONET network intervention happened between 16:30 and 19:55 UTC. The intervention was transparent to FOS since the ISDN backup line was used to transfer S Band telemetry.

## 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:



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- Six missing packets of MIRAS PUS TM were generated between OBTs:  
2016.169.20.20.42.545Z (SSC 13763) and  
2016.169.20.20.47.345Z (SSC 13770)

The problem appeared in GS pass HBK-11 (2016-06-18T04:38:01z (AOS), 2016-06-18T04:52:34z (LOS))

- S band GS pass AUS-26 (AOS=2016-06-16T16:43:47z; LOS=2016-06-16T16:55:11z) dumped duplicated PUS TM data from OBT 2016.168.14.44.27,107z to OBT 2016.168.15.23.09,130z (i.e. the entire previous S band GS pass HBX-01).  
PUS TM file SMO\_PLTM1\_P\_2016\_06\_16\_16\_46\_01 contained (again) the data that had already been dumped in file SMO\_PLTM1\_P\_2016\_06\_16\_15\_23\_10.
- PUS TM data from S Band GS pass HBK-5 (AOS=2016-06-13T04:32:36z; LOS=2016-06-13T04:47:14z) came duplicated. In particular data from OBT times 2016.165.02.43.37z to 2016.165.03.08.38z appeared twice in the source TM files.

## 9 X Band Data Reception in PXM

None, all S band passes successfully received and processed.

## 10 Exceptional Activities

None.

## 11 AOB

None.



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### APPENDIX A: OOLs

The following out of limit were received on PLPC system at the time of the CMN Unlock on H1 unit on the 19<sup>th</sup> of June:

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.171.15.12.12.481	2016.171.10.48.27.097	SPM11167	H1 LO_Locking	UNLOCK	LOCK

The CMN Unlock on H3 unit on the 17<sup>th</sup> of June generated the following two PLPC OOLs;

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.169.09.27.03.716	2016.169.08.46.38.535	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2016.169.09.27.03.565	2016.169.08.46.33.735	SPM13162	H3 LO_Out_Power	NOT-OK	O.K

The Mass memory latch up in partition P9 on the 16<sup>th</sup> of June generated the following OOLs:

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.168.15.24.01.602	2016.168.11.04.26.961	DMASME03	LU Switch P9	OFF	ON
2016.168.15.24.01.600	2016.168.11.04.26.961	DMASME37	SDD LU Detected	TRUE	FALSE

And finally the CMN Unlock on H3 on the 14<sup>th</sup> of June generated the following two alarms in PLPC system:

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
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2016.166.11.55.29.874	2016.166.10.41.21.672	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2016.166.11.55.29.784	2016.166.10.41.20.472	SPM13162	H3 LO_Out_Power	NOT-OK	O.K

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