



## Operations Notes

FOS Team @ ESAC

Reported by:

*J. Fauste/J.M. Castro Cerón*

Topic:

Date:

Issue:

**FOS Report for week 50, year 2016**

from 12 DEC 2016 to 19 DEC 2016

**1.0**

## 1 General Comments

Activities scheduled for this week are those planned for the 50<sup>th</sup> calendar week of 2016:

12 DEC 2016 to 19 DEC 2016 (DOYs 347 to 354).

The following routine activities were planned this week (see Gantt chart on next page and CRF 626):

- One Warm NIR Calibration on 14 DEC 2016 (DOY 349) with ETO 13:39:59z (orbit 37404) and with the following expected calibration values:

B.T.	=	3.8403°
R.M.S.	=	0.3046
Sun Elevation	=	9.9783°
Moon elevation	=	-2.1822°
R.A.	=	175.92°
DEC.	=	-16.31°
- One PMS Offset on 15 DEC 2016 (DOY 350), including three Short Calibrations at 07:38:00,0z, 07:38:34.8z, and 07:39:09.6z (orbit 37415).
- Local Oscillator Calibrations every 10 minutes.
- X band Passes over ESAC and Svalbard.

## 2 Mission Planning Deviations

None.



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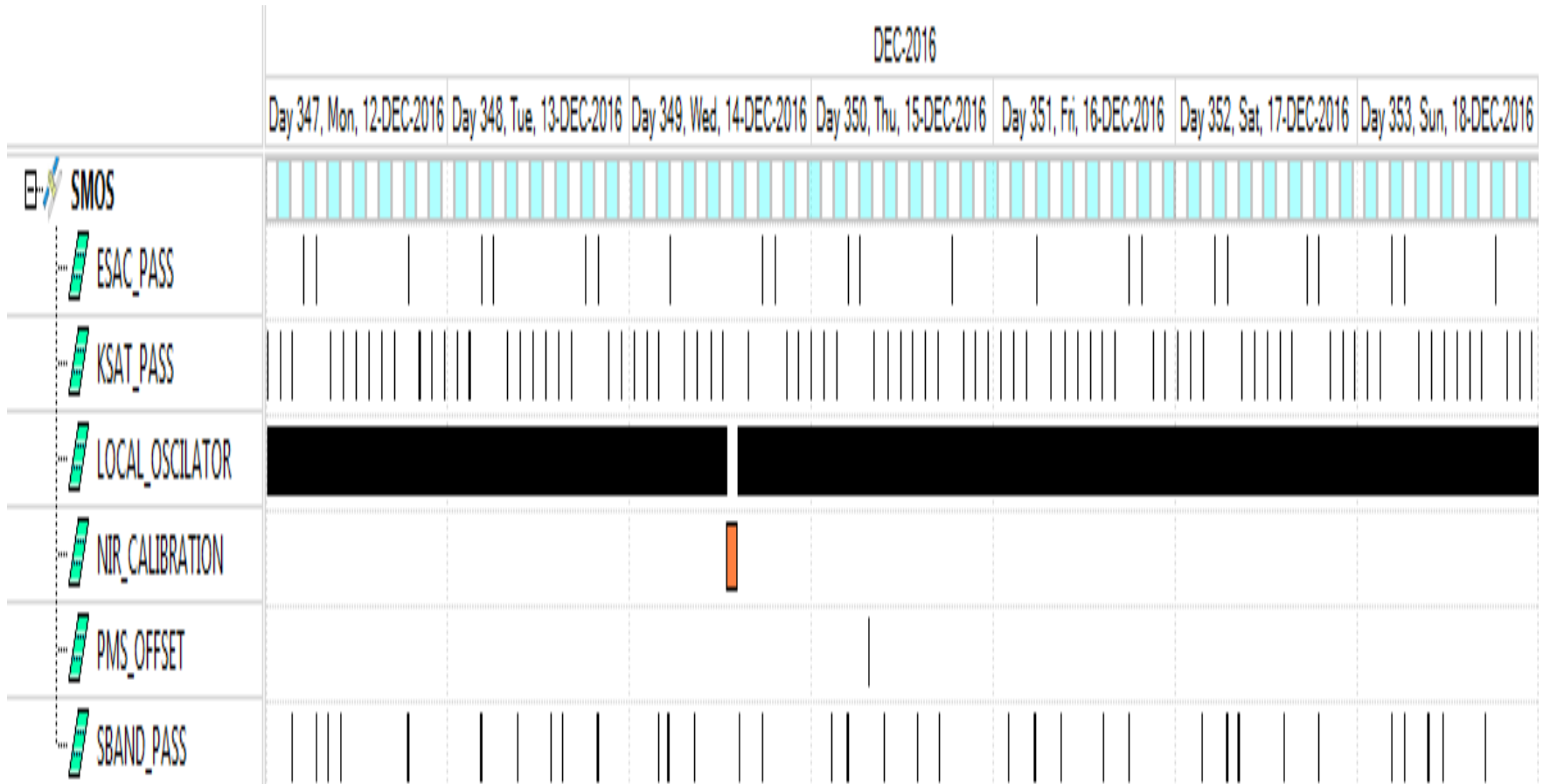
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### 3 TC Failures

None.

### 4 Unforeseen Out of Limits (OOLs)

Three main groups Out of Limits were received at the time of the three relevant anomalies happening during this reporting week: Two MM Latch-ups in partitions P0 and P9 (respectively on 16<sup>th</sup> and 18<sup>th</sup> of December) and the MM Double Bit memory error that also happened on the 18<sup>th</sup> of December. Further details on these three events can be found in sections 5 and Appendix-A of this report.

### 5 On Board Anomalies

- A Double Bit memory error in Mass Memory partition P4 happened on day 2016-12-18T11:27:26.371z, at that time the following TM Parameter went OOL on PLPC system:

*DMASME43 DB Err In P4 with value False.*

Also at the same time the following parameters went out of Soft limits on PLPC system:

*NMASME08 Last IP SB Errs with value 32*

*NMASME09 Last IP DB Errs with value 1*

*NMASME14 SB Err Cnt P4 with value 32*

At the time of the anomaly MM pointers were located as follows:

*Write Pointer= 2204143 (P5)*

*Read pointer = 1961121 (P4)*

Some possible corrupted data might be downloaded during the following XBand pass from 2016-12-18T11:32:34z to 2016-12-18T11:36:15z (to be confirmed by DPGS/CEC teams)

The anomaly recovery itself therefore no operational action was required.

- The MIRAS instrument MM, partition P9, latched up on 2016-12-18T04:15:45.311z (DOY 353). The following parameters went out of limits on the PLPC system:

*2016.353.04.15.45,311z DMASME03 LU Switch P9*

*2016.353.04.15.45,311z DMASME37 SDD LU Detected*

This anomaly was geolocated over the South Indian Ocean at the following geographical coordinates:

*Latitude. = -45.621749*



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*Longitude = 34.745167*

No science data losses did occur for this anomaly. Recovery took place on 19 DEC 2016, at 16:04:00z (CRF 628). At the time of the anomaly the position of the MM pointers were as follows:

*READ = 930732 (partition P2)*

*WRITE = 1106819 (partition P2)*

- The MIRAS instrument MM, partition P0, latched up on 2016-12-16T19:26:27.370z (DOY 351). The following parameters went out of limits on PLPC system:

*2016.351.19.26.27,370z DMASME12 LU Switch P0*

*2016.351.19.26.27,370z DMASME37 SDD LU Detected*

This anomaly was geolocated over North of Siberia at the following geographical coordinates:

*Latitude = 68.266095*

*Longitude = 136.645142*

Science data losses did occur for this anomaly because partition P0 was being written when it latched up (2624 s, from 2016-12-16T18:42:52 to 2016-12-16T19:26:36). Recovery took place on 19 DEC 2016, at 16:04:00z (CRF 628). At the time of the anomaly the position of the MM pointers were as follows:

*READ = 105067 (partition P0)*

*WRITE = 3897772 (partition P8)*

## 6 On Board Events Telemetry

The following RAM Single Bit errors befell this week:

Event Description	Severity	Event Time	Parameters
RAM single Bit Error	WARN	2016.349.21.22.07.038	216B4F0

## 7 FOS Systems Status

All FOS systems behaved nominally during this week.

- On 14<sup>th</sup> of December and as part of the preparation activities for the new leap second that will be introduced on the first of January 2017, a new SMOS Orbit Scenario File including this new leap second, was generated using FLEXPLAN tool on SPGF-3 machine. The file was edited and transferred to DPGS team on PLCEXT machine directory

*/home/spgfftp/outTray/DPGS/ORBIT\_SCENARIO.*



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The new OSF will also be transferred to the different FOS places on the 21 of December 2016.

### **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:

### **9 X Band Data Reception in PXMF**

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 was issued by the FOS PLPC system at the time of the Mass Memory Double Bit Memory error on 2016-12-18T11:27:26.371z.

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.353.17.29.12.445	2016.353.11.27.26.371	DMASME43	DB Err In P4	False	True

The Mass Memory Latch-up on partition P9 on 2016-12-18T04:15:45Z generated the following two OOLs on PLPC system.

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.353.05.33.01.774	2016.353.04.15.45.311	DMASME37	SDD LU Detected	False	True
2016.353.05.33.01.774	2016.353.04.15.45.311	DMASME03	LU Switch P9	OFF	ON

And the Mass Memory Latch-up on partition P0 on 2016-12-16T19:26:27z the following two OOLs.

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.352.04.08.27.012	2016.351.19.26.27.370	DMASME37	SDD LU Detected		
2016.352.04.08.27.011	2016.351.19.26.27.370	DMASME12	LU Switch P0	OFF	ON