Operations Notes

FOS Team @ ESAC

SMOS

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 45, year 2018

from 05 NOV 2018 to 12 NOV 2018

1.0

1   General Comments

Activities scheduled for this week are those planned for the 45th calendar week of 2018:

```
05 NOV 2018 to 12 NOV 2018 (DOYs 309 to 316).
```

The following routine activities were planned this week (see Gantt chart on next page and CRF 774).

- One PMS Offset on 08 NOV 2018 (DOY 312), including three Short Calibrations at 08:04:00.0z, 08:04:34.8z, and 08:05:09.6z (orbit 47387).
- Local Oscillator Calibrations every 10 minutes.
- *X* band Passes over ESAC and Svalbard.

2   Mission Planning Deviations

None.

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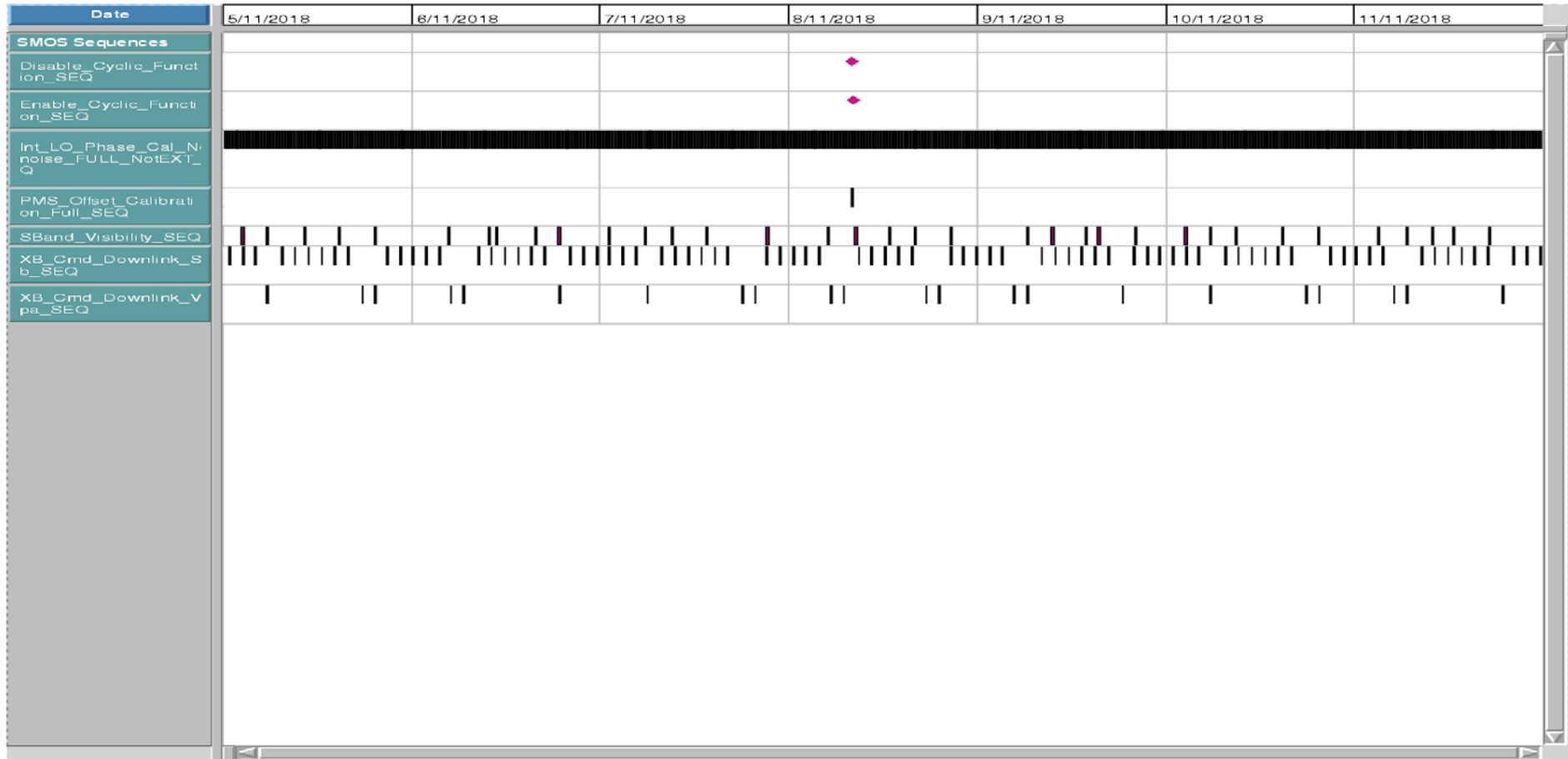
J. Fauste/J.M. Castro Cerón

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3 TC Failures

None.

4 On Board Anomalies

- The MIRAS instrument MM, partition P4, latched up on 2018-11-11T09:52:43.851z (DOY 315). The following parameters went out of limits in the PLPC system:

  2018.315.09.52.43.851z   DMASME08   LU Switch P4
  2018.315.09.52.43.851z   DMASME37   SDD LU Detected

  This anomaly was geolocated over Amazonas state north of Brazil:
  Latitude   = -5.47°
  Longitude = 302.95°

  There were no science data losses associated with this anomaly because it affected partition P4 and both Write and Read pointers were located in partition P0. Recovery took place on 12 NOV 2018, at 15:00:00z (CRF 777). At the time of the anomaly the position of the MM pointers were as follows:
  READ   = 99154 (partition P0)
  WRITE = 297430 (partition P0)

- The MIRAS instrument CMN, unit B2, unlocked on 2018-11-07T21:48:29,752z (DOY 311). This anomaly was geolocated over the Province of Santa Fe (Argentina; South Atlantic Anomaly):
  Latitude   = -28.91°°
  Longitude   = 298.52

  Both parameters, output power SPM18162 and locking status SPM18167, went out of limits in the FOS PLPC system. The anomaly recovered in 11 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	2018-11-05T22:43:56	22DD3E4
RAM single Bit Error	730	WARN	2018-11-05T11:09:05	213C310
RAM single Bit Error	730	WARN	2018-11-05T09:23:26	2361CA4

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6 FOS Systems Status

- The FOS-CNES ISDN backup line went down on the 8th of November. The issued was notified by email from CNES. FOS check that the ISDN box seems to have power but the line was clearly down. First visit from Telefonica was in the morning of the 9th of November checking that the problem was outside ESAC. At the time this report is written the ISDN backup line is still down.

- On the 8th of November, the PLPC servers (both PRM and BKP) were swapped as per the following general schedule:

  KUX-07   AOS=08:27:05z   (acquired with PLPCPRM)
  KER-06   AOS=12:47:38z   (acquired with PLPCBKP)
  HBX-11   AOS=16:01:12z   (acquired with PLPCPRM)

  The test was successfully performed, though minor issues were identified and will be documented in the procedures.

- On the 5th of November GMV delivered new SPOC version 2.0 on Google Play. The application was installed on the same date on the FOS on call phone. This new version includes the fix of the Gantt chart and a first prototype of the monitoring service.

- The new *WebMUST* MUSE system was installed on the SMTA machine on the 7th of November by ESOC maintenance team. As part of this installation, *Tomcat* version was also installed replacing the old *Tomcat* 6.

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 exceptions:

- Because of an electrical failure at the receiving station, S band GS pass HBX-10 (AOS = 2018-11-08T04:56:07z; LOS = 2018-11-08T05:10:10z) could not be acquired. The gap on PUS TM went:

  from 2018-11-07T21:12:56.129z to 2018-11-08T04:58:16.835z.

  To achieve completion MIRAS PUS TM was recovered from the X band PXMF system and ingested into the MUST-SMTA system on 8th NOV 2018. The corresponding EHK-TM was lost:

  from 2018-11-07T21:12:39.692z to 2018-11-08T04:58:48.129z.

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8 *X* Band Data Reception in PXMF

Due to the S-Band acquisition problem reported in section seven of this report, the FOS PXMF system was activated to reprocess X-Band Telemetry data. During this reprocessing the CMN Unlock on B2 unit was detected therefore that anomaly was not recorded on S-Band and it cannot be found on PLPC system.

9 Exceptional Activities

None.

10 AOB

None.

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APPENDIX A: OOLs

The following Out of Limits were received on FOS PLPC system at the time of the Mass Memory Latch-up of partition P4.

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2018-11-11T13:04:23	2018-11-11T09:52:43	DMASME37	SDD LU Detected	FALSE	TRUE
2018-11-11T13:04:23	2018-11-11T09:52:43	DMASME08	LU Switch P4	OFF	ON

The following Out of Limits were received on the FOS X-Band system, PXMF, at the time of the CMN Unlock of B2 unit. It is important to remark that those Out of Limits were not seen and cannot be retrieved on FOS PLPC system

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2018-11-09T10:01:01	2018-11-08T21:48:29	SPM18167	B2 LO_Locking	Unlock	Lock
2018-11-09T10:01:01	2018-11-08T21:48:29	SPM18162	B2 LO_Out_Power	NOT-OK	OK