



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste

Topic:

Date:

Issue:

FOS Report for week 51 year 2017

from 18 DEC 2017 to 25 DEC 2017

1.0

1 General Comments

Activities scheduled for this week are those planned for the 51th calendar week of 2017:

18 DEC 2017 to 25 DEC 2017 (DOYs 352 to 359).

The following routine activities were planned this week (see Gantt chart on next page and CRF 701):

- One Warm NIR Calibration on 20 DEC 2017 (DOY 354) with ETO 03:59:26z (orbit 42737) and with the following expected calibration values:
 - B.T. = 3.697°
 - R.M.S. = 0.066
 - Sun Elevation = 9.98°
 - Moon elevation = 27.70°
 - R.A. = 355.79°
 - DEC. = -20.48°
- One PMS Offset on 21 DEC 2017 (DOY 355), including three Short Calibrations at 08:38:00.0z, 08:38:34.8z, and 08:39:09.6z (orbit 42754).
- Local Oscillator Calibrations every 10 minutes.
- X band Passes over ESAC and Svalbard.

2 Mission Planning Deviations

Due to the CCU reset that happened on the 18th of December the following X-Band passes were not acquired on ground:

Station	AOS	LOS	Duration
Xband_SVAL	2017-12-18T11:25:31	2017-12-18T11:29:07	215
Xband_SVAL	2017-12-18T13:06:09	2017-12-18T13:11:33	324
Xband_SVAL	2017-12-18T14:46:06	2017-12-18T14:53:49	462
Xband_SVAL	2017-12-18T16:25:46	2017-12-18T16:35:10	563



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste

Topic:

Date:

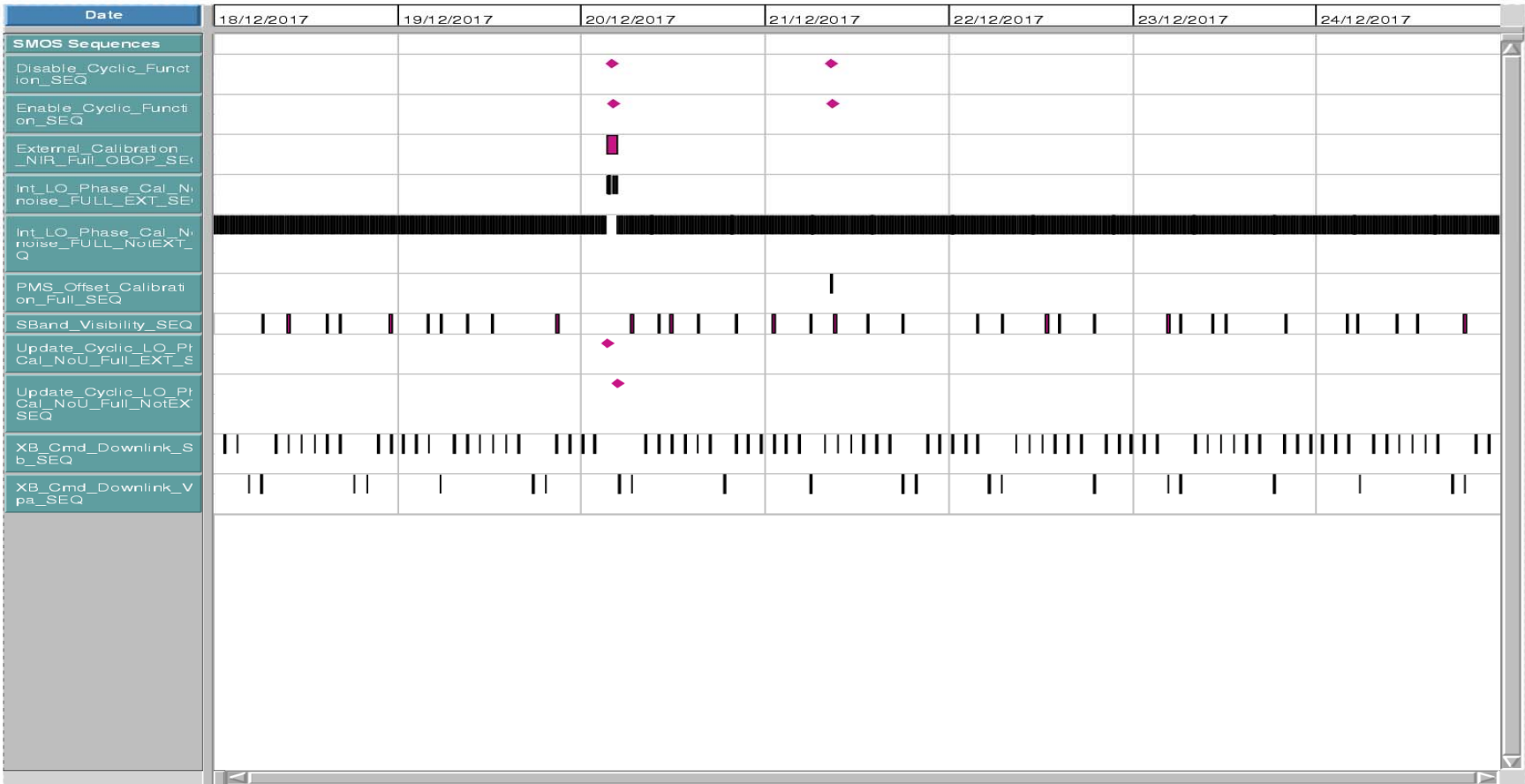
Issue:

FOS Report for week 51 year 2017

from 18 DEC 2017 to 25 DEC 2017

1.0

Schedule Name: 2017_w51_cr ### Display start: 18-12-2017 00:00:00.000 ### Display end: 25-12-2017 00:00:00.000





Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste

Topic:

Date:

Issue:

FOS Report for week 51 year 2017

from 18 DEC 2017 to 25 DEC 2017

1.0

3 TC Failures

None.

4 Unforeseen Out of Limits (OOLs)

Several OOLs were issued by the FOS PLPC system at the time of the two MIRAS anomalies that happened during this reporting week: the MIRAS CCU reset on the 18th of December and the CMN Unlock on the 23rd of December. Further details on these anomalies can be found in section five and Appendix-A of this report.

5 On Board Anomalies

- The MIRAS instrument CMN, unit H1, unlocked on 2017-12-23T07:39:20.442z (DOY 357). This anomaly was geolocated over Greenland:

Latitude = -23.44°

Longitude = 338.80°

Both parameters locking status parameter SPM11167 and power output SPM11162 went out of limits in the FOS PLPC system. The anomaly recovered by itself in 5 Epochs.

- The MIRAS instrument CCU, reset on 2017-12-18T09:45:08.293 (DOY 352). First symptoms of the reset were noticed by KSAT operator that reported by email the lack of spacecraft signal for the X-band pass with AOS at 11:25:31z. Following that, the FOS Engineer also checked that the number of TM packets received during the previous X-band pass were significantly less than normal.

As consequence of that, FOS Engineer contacted CNES by email around 12:04z alerting on the possibility of having a CCU reset around 09:45z. In agreement with CNES, and because of two S-Band passes were still pending on the 18th of December, FOS prepared in advance and sent to CNES the replanning for current week 51. The CCU reset was finally confirmed by CNES upon the reception of S-band pass KRX-17 (AOS=14:46:53z, LOS=14:58:32z).

The last TM packet received before the reset was time stamped at 2017-12-18T09:45:08.293z. As detailed on the instrument boot report packet, issued immediately after the reset, the cause of the anomaly was, as in all previous cases, a *Task Overrun* error.

After the usual onboard events at the start of the pass:



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste

Topic:

Date:

Issue:

FOS Report for week 51 year 2017

from 18 DEC 2017 to 25 DEC 2017

1.0

2017.352.09.43.20.623 725 NORM XBand Powered On
 2017.352.09.43.44.623 695 NORM MM Full Dump Start

The following Alarm packets were issued by the instrument:

2017.352.09.45.07.413 MM_Error_Counters_Acquisition_Failure
 2017.352.09.45.07.433 MM_Scrub_Frequency_Acquisition_Failure
 2017.352.09.45.07.473 MM_Address_Acquisition_Failure
 2017.352.09.45.07.733 MM_Science_Write_Failure

and then one second later the instrument finally reset at 2017-12-18T09:45:08.293z

MIRAS re-planning was prepared by FOS in the morning of the 18 of December and included as part of CRF-705. That replanning together with the CCU recovery procedure, was uploaded by CNES using two SBand passes (KRX-17, AOS=14:46:53z, LOS=14:58:32z) and (KRX-18, AOS=16:26:02z, LOS=16:40:17z). As per this re-planning, nominal MIRAS X band GS dumps were resumed on 2017-12-18, at 18:16:55z (ESAC XBand pass)

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

Read = 487856, MM Partition P1
 Write = 223406, MM Partition P0

The anomaly was geolocated over Arctic areas (north of Canada):

Latitude = 79.65°
 Longitude = 250.03°

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	2017-12-24T21:28:10	20BED9C
RAM single Bit Error	730	WARN	2017-12-23T23:20:17	23283A0
RAM single Bit Error	730	WARN	2017-12-22T07:10:04	2068D54

7 FOS Systems Status

All FOS systems nominal.



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste

Topic:

Date:

Issue:

FOS Report for week 51 year 2017

from 18 DEC 2017 to 25 DEC 2017

1.0

8 Data Reception from CNES

All S band passes were correctly received from CNES and successfully processed by the FOS PLPC system.

9 X Band Data Reception in PXMF

None, all S band passes successfully received and processed.

10 Exceptional Activities

FOS replanning activities, CRF-705, linked to the CCU reset that happened on the 18th of December.

11 AOB

None.



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste

Topic:

FOS Report for week 51 year 2017

Date:

from 18 DEC 2017 to 25 DEC 2017

Issue:

1.0

APPENDIX A: OOLs

The following Out of Limits were issued by the FOS PLPC system at the time of the CMN Unlock on the 23th of December.

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2017-12-23T11:04:01	2017-12-23T07:39:20	SPM11162	H1 LO_Out_Power	NOT-OK	OK
2017-12-23T11:04:01	2017-12-23T07:39:21	SPM11167	H1 LO_Locking	UNLOCK	LOCK

During the execution of the CCU recovery procedure, the following OOL was issued by the FOS PLPC system at the time the MIRAS ITL was temporary made disabled.

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2017-12-18T16:54:21	2017-12-18T14:51:59	NTLHK022	ITL Ena State	Disabled	Enabled

At the time of the CCU reset the following OOLs were issued by the FOS PLPC system:

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM22167	C3 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM21167	C2 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM20167	C1 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM19167	B3 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM18167	B2 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM17167	B1 LO_Locking	UNLOCK	LOCK



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste

Topic:

Date:

Issue:

FOS Report for week 51 year 2017

from 18 DEC 2017 to 25 DEC 2017

1.0

2017-12-18T15:13:44	2017-12-18T09:45:41	SPM16167	A3 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM15167	A2 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM14167	A1 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM12172	H2 LO_locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPM11167	H1 LO_Locking	UNLOCK	LOCK
2017-12-18T15:13:44	2017-12-18T09:45:41	SPC02106	Instrument_Mode	Inst Init	Any other mode
2017-12-18T15:13:44	2017-12-18T09:45:41	XNIRABST	NIR AB VALID ST	NOT-OK	OK
2017-12-18T15:13:44	2017-12-18T09:45:41	XNIRBCST	NIR BC VALID ST	NOT-OK	OK
2017-12-18T15:13:44	2017-12-18T09:45:41	XNIRCAST	NIR CA VALID ST	NOT-OK	OK