



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 19, year 2019

from 06 MAY 2019 to 13 MAY 2019

1.0

1 General Comments

Activities scheduled for this week are those planned for the 19th calendar week of 2019:

06 MAY 2019 to 13 MAY 2019 (DoYs 126 to 133).

The following routine activities were planned this week (see Gantt chart on next page and CRF 809).

- One Warm NIR Calibration on 08 MAY 2019 (DoY 128) with ETO 16:12:20z (orbit 49997; ASCENDING: thermally UNSTABLE) and with the following expected calibration values:
 - B.T. = 4.40°
 - R.M.S. = 1.34
 - Sun elevation = 4.54°
 - Moon elevation = -31.89°
 - R.A. = 312.03°
 - DEC. = 23.40°
- One PMS Offset on 09 MAY 2019 (DoY 129), including three Short Calibrations at 06:39:30.0z, 06:40:04.8z, and 06:40:39.6z (orbit 50005).
- Local Oscillator Calibrations every 10 minutes.
- X band Passes over ESAC and Svalbard.

2 Mission Planning Deviations

Because of the CCU reset of 10 MAY 2019, and the unavailability of the auto-downlink function, the following X band GS passes were not acquired:

Station	AoS	LoS	Duration
Xband_SVAL	2019-05-10T16:51:20	2019-05-10T17:01:01	581
Xband_ESAC	2019-05-10T18:42:21	2019-05-10T18:50:39	498
Xband_SVAL	2019-05-10T20:09:54	2019-05-10T20:20:20	626
Xband_SVAL	2019-05-10T21:48:48	2019-05-10T21:59:06	618
Xband_SVAL	2019-05-10T23:27:30	2019-05-10T23:37:46	613
Xband_SVAL	2019-05-11T01:06:12	2019-05-11T01:16:36	623
Xband_SVAL	2019-05-11T02:45:15	2019-05-11T02:55:41	625
Xband_SVAL	2019-05-11T04:25:27	2019-05-11T04:35:00	573
Xband_ESAC	2019-05-11T05:55:30	2019-05-11T06:03:45	495
Xband_SVAL	2019-05-11T07:47:31	2019-05-11T07:54:18	407
Xband_SVAL	2019-05-11T09:29:59	2019-05-11T09:34:28	268



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 19, year 2019

from 06 MAY 2019 to 13 MAY 2019

1.0

Xband_SVAL	2019-05-11T11:12:05	2019-05-11T11:15:36	210
Xband_SVAL	2019-05-11T12:52:52	2019-05-11T12:57:58	305
Xband_SVAL	2019-05-11T14:32:53	2019-05-11T14:40:18	445



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

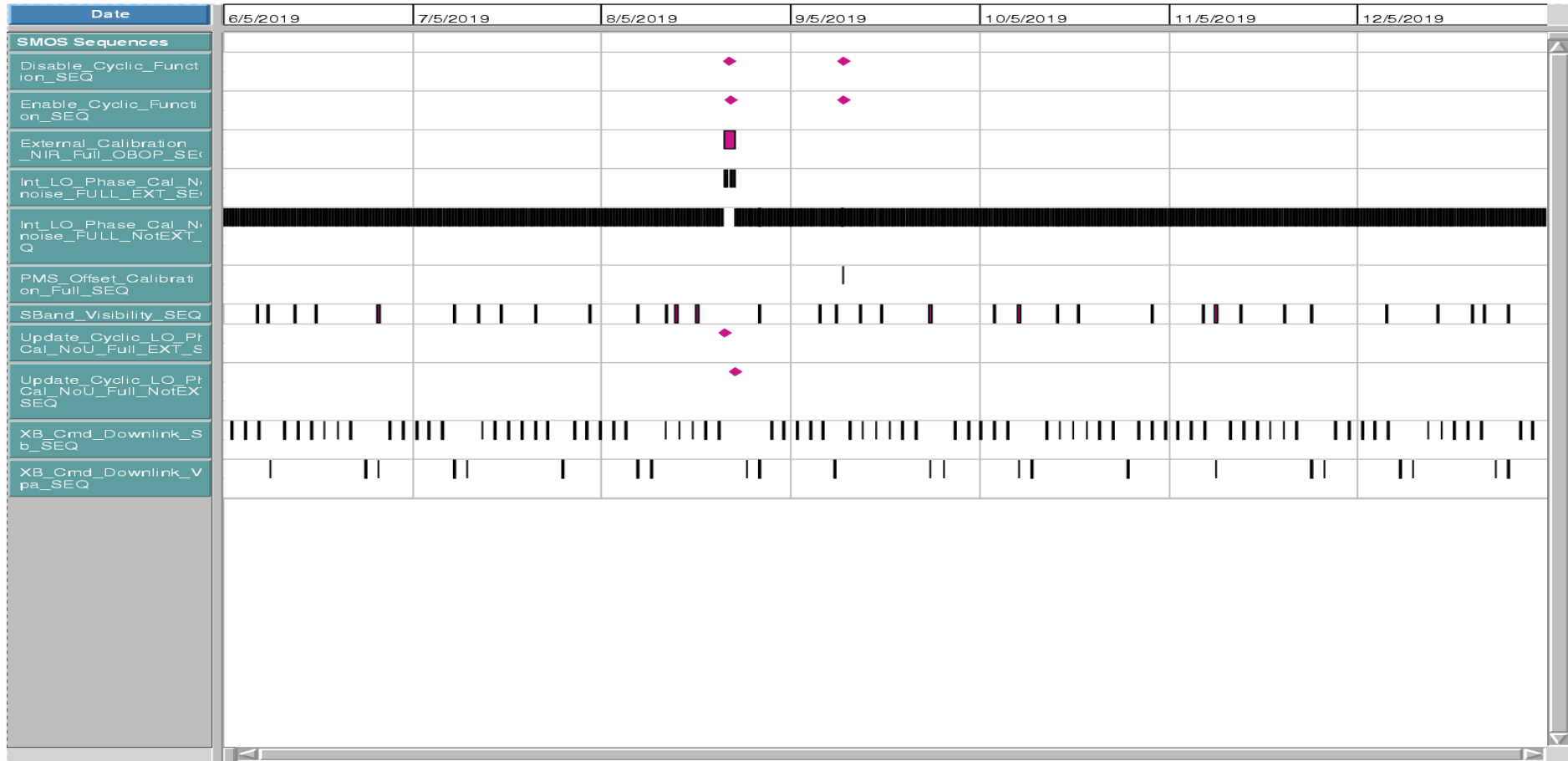
Issue:

FOS Report for week 19, year 2019

from 06 MAY 2019 to 13 MAY 2019

1.0

Schedule Name: 2019_w19_cr ### Display start: 06-05-2019 00:00:00.000 ### Display end: 13-05-2019 00:00:00.000





3 TC Failures

None.

4 On Board Anomalies

- A MIRAS CCU reset took place 2019-05-10T15:15:03.724z (DOY 130). The first warning came via email from KSAT, following no data dump during Svalbard GS pass AOS=2019-05-10T16:51:20z. After ESAC GS pass AOS=2019-05-10T18:42:21z failed to dump data as well, DPGS operator alerted FOS on-call engineer and, in turn, FOS provided CNES with a heads-up notice at 18:49z. Further FOS informed KSAT at 20:24z that no data had been received for a second X band pass. The CCU reset was finally confirmed by CNES upon reception of S band GS pass KRX-6 AOS=2019-05-10T21:47:36z.

The reset befell at the end of Svalbard X band GS pass AOS=2019-05-10T15:11:29z (transponder ON). Said pass was scheduled for a duration of 492 s. Reset occurred 190 s after AOS, and before the switch off of the X band antenna, scheduled for 2019-05-10T15:19:56z. The last TM packet received before the reset was time stamped at 2019-05-10T15:15:03.724z. As detailed on the instrument Boot Report TM packet, the reset was triggered by the standard Task Overrun error (Boot Report).

A suitable re-planning for this CCU reset had been prepared in advance by FOS as part of week 20 activities (CRF 810). The execution of the recovery procedure, PRO-CRP-100, and upload of the re-planning, was performed during S band GS pass KUX-14 (AOS=2019-05-11T09:02:51z). Nominal MIRAS X band GS dumps were resumed on 2019-05-10T16:12:20z.

Because of this reset, 228 s of science data were lost (from 2019-05-10T15:11:52z to 2019-05-10T15:15:40z), and several X band GS passes were not acquired (see Sect. 2). Further, faulty chip 6 in MM partition P3 was written before the CCU recovery, what resulted in an additional loss of 1364 s of science data (from 2019-05-11T02:35:54z to 2019-05-11T02:58:38z).

The sequence of events leading to/following the CCU reset was as follows:

2019.130.15.11.29	725	NORM	XBand Powered On
2019.130.15.11.53	695	NORM	MM Full Dump Star

No alarms were issued prior to the reset. See Appendix A for a list of OOLs displayed in the FOS PLPC system immediately after the reset. These OOLs appeared time stamped with ground reception time because the instrument had not yet synchronised with the platform.

The following two error packets appeared on the PLPC system:

2019.130.23.03.58	652	ERROR	Time_Correlator_Unexpected_UTC
2019.130.23.03.58	653	ERROR	Time_Correlator_Unexpected_PPS



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 19, year 2019

from 06 MAY 2019 to 13 MAY 2019

1.0

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

Read = 3011075, *MM Partition P6*

Write = 3272955, *MM Partition P7*

The anomaly was geolocated off the artic Russian coastline, over the Kara Sea:

LAT. = 78.19°

LONG. = 86.51°

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	WARNING	2019.126.12.05.27,731	228B108
RAM Single Bit Error	730	WARNING	2019.129.22.28.51,551	2042784
RAM Single Bit Error	730	WARNING	2019.130.23.03.58,040	2042784
RAM Single Bit Error	730	WARNING	2019.132.12.25.35,451	2109940

6 FOS Systems Status

- The new FOS-CNES back-up line for S band TM delivery (now based on ESA's Corporate Network) was first tested live on 10 MAY 2019. S band GS pass KUX-13 (AOS=09:41:14) TM was successfully received. Goal has it for this new line to substitute the old ISDN set-up.

7 Data Reception from CNES

- All S band passes were received from CNES and processed by the FOS PLPC system. Nonetheless, a systematic time lag in the arrival of the TM has been observed this week for all S band passes. It is having minor side effects on FOS systems (i.e. spurious gaps in the TM DB that had to be filled manually). This time lag is under investigation by CNES with FOS support.

8 X Band Data Reception in PXMF

None, all S band passes successfully received and processed.

9 Exceptional Activities

None.

10 AOB

None.



Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 19, year 2019

from 06 MAY 2019 to 13 MAY 2019

1.0

APPENDIX A: OOLs

The following OOLs befell at the time the MIRAS instrument CCU reset on 2019-05-10T15:15:03,724z (DoY 130):

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOl Value	Check Value
2019.130.23.03.18,973	— — —	XNIRABST	NIR AB VALID ST	NOT-OK	OK
2019.130.23.03.18,973	— — —	XNIRBCST	NIR BC VALID ST	NOT-OK	OK
2019.130.23.03.18,973	— — —	XNIRCAST	NIR CA VALID ST	NOT-OK	OK
2019.130.23.03.18,973	— — —	SPC02106	Instrument_Mode	Inst Init	Any Mode
2019.130.23.03.18,973	— — —	SPM11167	H1 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM12172	H2 LO_locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM14167	A1 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM15167	A2 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM16167	A3 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM17167	B1 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM18167	B2 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM19167	B3 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM20167	C1 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM21167	C2 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	SPM22167	C3 LO_Locking	UNLOCK	LOCK
2019.130.23.03.18,973	— — —	NTLHK022	ITL Ena State	Disabled	Enabled