



## Operations Notes

FOS Team @ ESAC

Reported by:

*J. Fauste/J.M. Castro Cerón*

Topic:

Date:

Issue:

**FOS Report for week 02, year 2019**

from 07 JAN 2019 to 14 JAN 2019

**1.0**

## 1 General Comments

Activities scheduled for this week are those planned for the 02<sup>nd</sup> calendar week of 2019:

07 JAN 2019 to 14 JAN 2019 (DoYs 007 to 014).

The following routine activities were planned this week (see Gantt chart on next page and CRF 784).

- One PMS Offset on 10 JAN 2019 (DOY 010), including three Short Calibrations at 07:12:00.0z, 07:12:34.8z, and 07:13:09.6z (orbit 48293).
- Local Oscillator Calibrations every 10 minutes.
- X band Passes over ESAC and Svalbard.

## 2 Mission Planning Deviations

Because of the CCU reset of 10 JAN 2019, and the failure of the auto-downlink function that ensued, the following X band GS passes were not acquired (see Sect. 4):

Station	AoS	LoS	Duration
Xband_ESAC	2019-01-10T04:29:34,401	2019-01-10T04:33:13,463	219
Xband_ESAC	2019-01-10T06:05:34,894	2019-01-10T06:13:40,464	485
Xband_SVAL	2019-01-10T07:57:49,859	2019-01-10T08:04:23,473	393
Xband_SVAL	2019-01-10T09:40:19,770	2019-01-10T09:44:36,617	256
Xband_SVAL	2019-01-10T11:22:19,178	2019-01-10T11:25:53,460	214
Xband_SVAL	2019-01-10T13:02:59,349	2019-01-10T13:08:18,607	319



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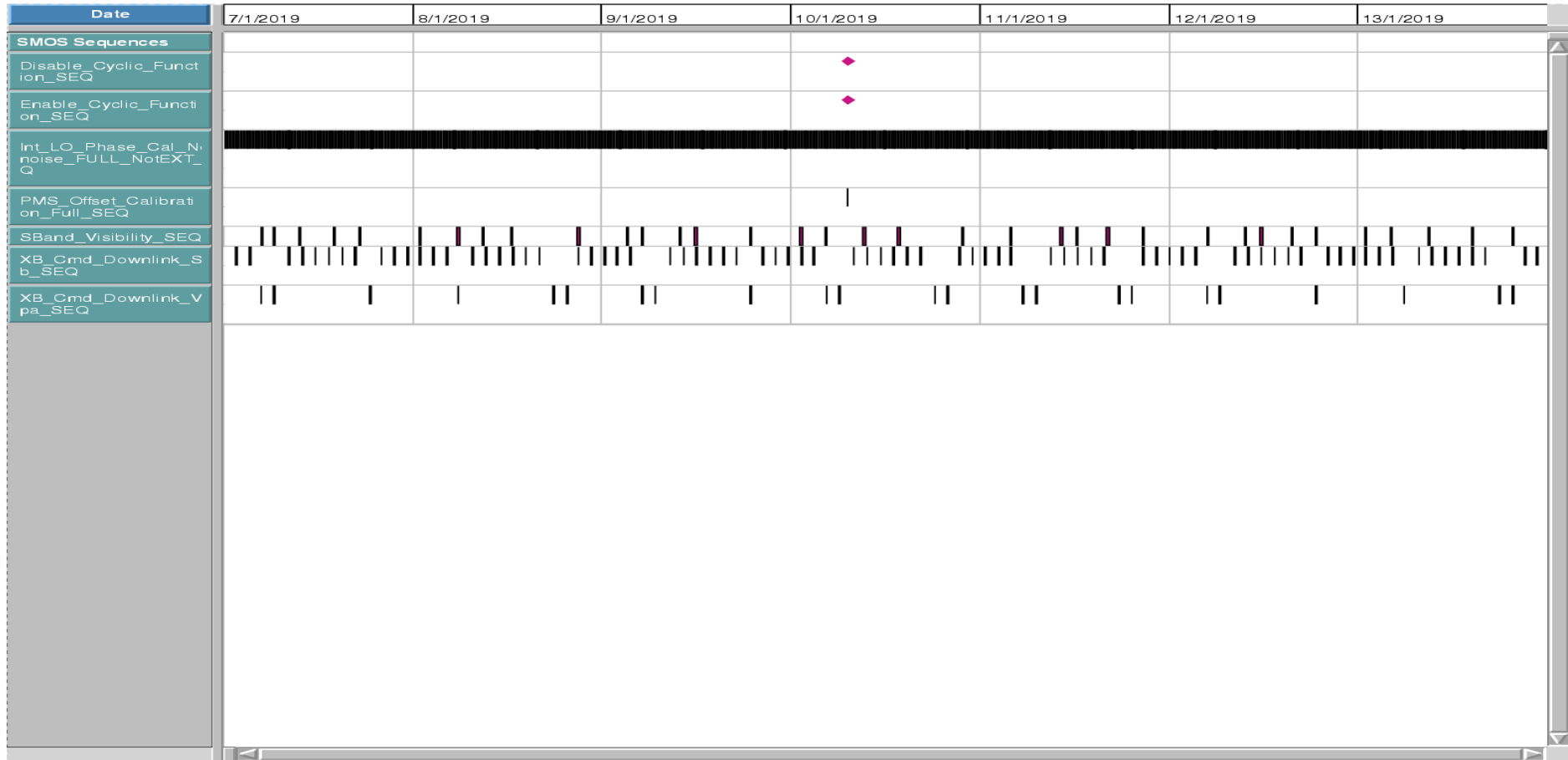
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Schedule Name: 2019\_w02\_cr ### Display start: 07-01-2019 00:00:00.000 ### Display end: 14-01-2019 00:00:00.000





### 3 TC Failures

None.

### 4 On Board Anomalies

- The MIRAS instrument CCU reset on 2019-01-10T02:59:29,590z (DOY 010). A phone call from CNES to the FOS hotline on 10 JAN 2019, at 06:18, alerted about this anomaly. The reset had been confirmed on reception of S band GS pass STC-6 (AoS = 2019-01-10T04:24:40z). At 07:13 the FOS on-call engineer contacted KSAT to advise them that they would receive no further X band GS passes until 2019-01-10T14:43:00z.

The reset befell in the middle of a Svalbard X band GS pass commencing on 2019-01-10T02:55:19,660z (transponder on). Said GS pass was scheduled for a duration of 624 seconds. The reset occurred 4.17 minutes after AoS, and before the switch off of the X band antenna, scheduled on 2019-01-10T03:05:24,666z. The last TM packet received before the reset was time stamped at 2019-01-10T02:58:55,333z. This reset was triggered by the standard «Task Overrun» error (Boot Report).

FOS team re-planned activities for both the remainder of week 02 and week 03 that same day, 10 JAN 2019. Included in CRF No. 787, it was uploaded by CNES, following the execution of PRO-CRP-100, during S band GS pass KUX-10 on 2019-01-10T09:12:59z.

As per this re-planning, nominal MIRAS X band GS dumps resumed on 2019-01-10T14:43:00,632z.

Because of this reset, 231 seconds of science data were lost (from 2019-01-10T02:55:42z to 2019-01-10T02:59:33z), and several X band GS passes were not acquired (see Sect. 2). Further, the PMS OffSet calibration scheduled for 10 JAN 2019 at 07:12:00z was not executed.

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

2019.010.02.55.19,666	725	NORM	XBand Powered On
2019.010.02.55.43,661	695	NORM	MM Full Dump Star
2019.010.02.58.55,653	689	ALARM	MM_Error_Counters_Acquisition_Failure
2019.010.02.58.55,673	690	ALARM	MM_Scrub_Frequency_Acquisition_Failure
2019.010.02.58.55,713	684	ALARM	MM_Address_Acquisition_Failure
2019.010.02.58.55,713	682	NORM	MM Dump Ended
2019.010.02.58.55,973	692	ALARM	MM_Science_Write_Failure

No alarms were issued prior to the reset.



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See Appendix A for a list of OOLs displayed in the FOS PLPC system immediately after the reset.

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

Read = 2273495, MM Partition P5  
Write = 2533846, MM Partition P5

The anomaly was geolocated over the Barents Sea, just south of Svalbard:

LAT. = 73.83°  
LONG. = 14.83°

## 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	2019.010.02.59.30,090	20F4D00
RAM Single Bit Error	730	WARNING	2019.010.22.51.35,628	20ED428
RAM Single Bit Error	730	WARNING	2019.013.10.03.53,428	22E25D4

## 6 FOS Systems Status

All FOS systems nominal.

## 7 Data Reception from CNES

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

## 8 X Band Data Reception in PXMF

None, all S band passes successfully received and processed.

## 9 Exceptional Activities

None.

## 10 AOB

- In preparation for the upcoming upload of OBSW (v2.8.5.1), memory addresses to be patched were dumped on 09 JAN 2019 as per CRF no. 785. Dump results verified expected values.



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## APPENDIX A: OOLs

The following OOLs befell at the time the MIRAS instrument CCU reset on 2019-01-10T02:59:29,590z (DOY 010):

GS_TIME	OB_TIME	PARAMETER	DESCRIPTION	OOl Value	Check Value
2019.010.04.57.05,816	2019.010.02.59.29,590	XNIRABST	NIR AB VALID ST	NOT-OK	OK
2019.010.04.57.05,816	2019.010.02.59.29,590	XNIRBCST	NIR BC VALID ST	NOT-OK	OK
2019.010.04.57.05,816	2019.010.02.59.29,590	XNIRCAST	NIR CA VALID ST	NOT-OK	OK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPC02106	Instrument_Mode	Inst Init	Any Mode
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM11167	H1 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM12172	H2 LO_locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM14167	A1 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM15167	A2 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM16167	A3 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM17167	B1 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM18167	B2 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM19167	B3 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM20167	C1 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM21167	C2 LO_Locking	UNLOCK	LOCK
2019.010.04.57.05,816	2019.010.02.59.29,590	SPM22167	C3 LO_Locking	UNLOCK	LOCK
2019.010.14.08.35,707	2019.010.09.15.09,432	NTLHK022	ITL Ena State	Disabled	Enabled