Operations Notes

FOS Team @ ESAC

Reported by:

J. Fauste/J.M. Castro Cerón

Topic:

Date:

Issue:

FOS Report for week 01, year 2016

from 04 JAN 2016 to 11 JAN 2016

1.0

1 General Comments

Activities scheduled for this week are those planned for the 01nd calendar week of 2016:

> 04 JAN 2016 to 11 JAN 2016 (DoYs 004 to 011).

The following routine activities were planned this week (see Gantt chart on next page and CRF 546):

- One Warm NIR Calibration on 06 JAN 2016 (DoY 006), with ETO 03:50:37z (orbit 32463), and with the following expected calibration values:

B.T.	= 3.646700
R.M.S.	= 0.059000
Sun Elevation	= 9.973900 degrees
R.A.	= 12.365600 degrees
DEC.	= -16.981100degrees

  This Calibration was not executed due to the CCU reset that happened on the 5th of January.
- One PMS Offset on 7 JAN 2016 (DoY 007), including three Short Calibrations at 13:31:00.0z, 13:31:34.8z, and 13:32:09.6z (orbit 32483).
- 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 5th of January 2016, the NIR calibration that should have been performed the following day, 6th of January, was not executed due to the onboard clean-up of the MIRAS ITL after the reset. Nevertheless the External Manoeuvre was nominally performed by the spacecraft but with a wrong instrument setting.

Due to the same anomaly the following XBand passes were not acquired at Ground Segment level:

From 2016-01-05T22:16:02	to	2016-01-05T22:26:18
From 2016-01-05T23:54:42	to	2016-01-06T00:05:00
From 2016-01-06T01:33:28	to	2016-01-06T01:43:54
From 2016-01-06T04:45:45	to	2016-01-06T04:51:30
From 2016-01-06T06:23:14	to	2016-01-06T06:30:44
From 2016-01-06T08:15:46	to	2016-01-06T08:21:53
From 2016-01-06T09:58:17	to	2016-01-06T10:02:15
From 2016-01-06T11:40:02	to	2016-01-06T11:43:47
From 2016-01-06T13:20:31	to	2016-01-06T13:26:17

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From 2016-01-06T15:00:25   to   2016-01-06T15:08:26
From 2016-01-06T16:40:02   to   2016-01-06T16:49:37

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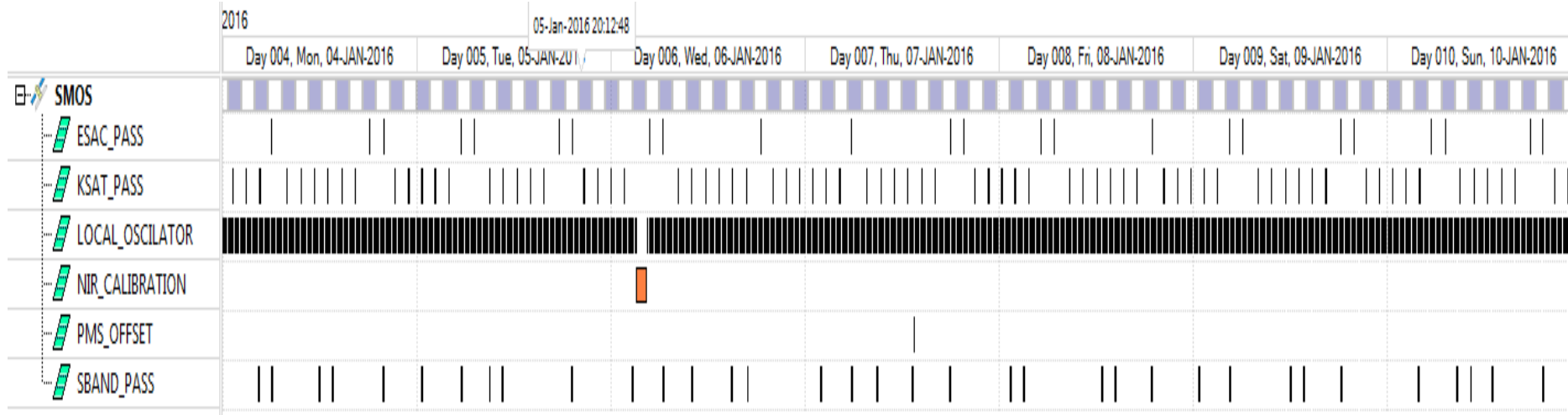*J. Fauste/J.M. Castro Cerón*

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SMOS

3 TC Failures

None.

4 Unforeseen Out of Limits (OOLs)

Several MIRAS Out of limits were received on PLPC system associated to the CCU reset (see Appendix-A for further details)

5 On Board Anomalies

- An anomalous temperature increase on LICEF A10 thermistor connected to CMN3 (Housekeeping parameter NCMN3T03) happened on 9th of January around 21:55z. The increase is slight seen also in LICEF A11 and little bit less in LICEF A9. LICEF A10 is located on the boundary of Arm-A segment 2.

  On 9th of January, at 21:55:03z parameter NCMN3T03 went out of High soft limit with value 26.00178 degrees (PLPC limit is set to 26 degrees). From that point onwards the parameter was having one spike per orbit with highest value seen so far equals 26.6334 degrees. Hard limit for this parameter is set at 30 degrees.
  This problem for this particular sensor has not seen before during the mission. In average the temperature has increased in about 1.5 degrees respect its nominal values with is an increase of around 6.2 percent.

  No changes on the PROTEUS parameter have seen at that time. The problem was also detected at MUST Novelty level, a graphic of this increase is here below included.

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Reported by:
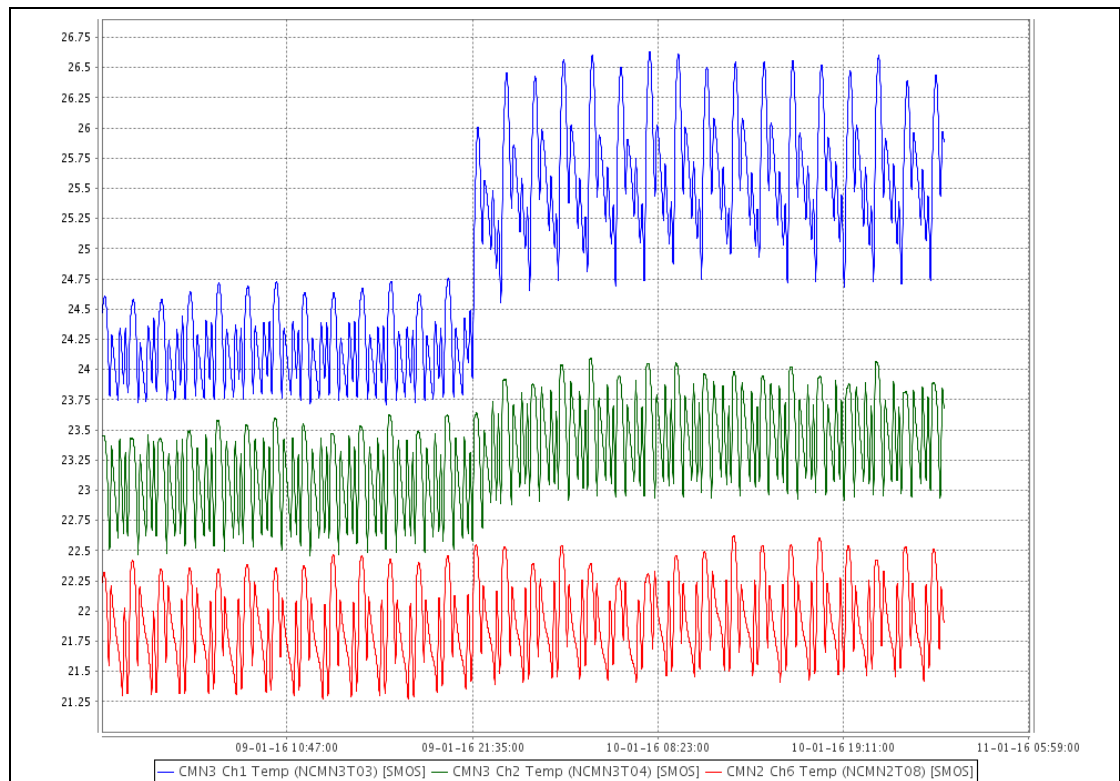*J. Fauste/J.M. Castro Cerón*

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- MIRAS suffered a new CCU Reset on 2016-01-05T20:41:59.882z. First indications of a possible CCU reset were initially seen by the FOS on call engineer around 2016-01-05T022:00z. At that time the following two XBand passes over Svalbard were not received

    from 2016-01-05T22:16:02z to 2016-01-05T22:26:18z
    from 2016-01-05T23:54:42z to 2016-01-06T00:05:00z

    Following to this a telephone call from KSAT was received around 2016-01-06T00:15z. Communication with the CNES on call team was performed later on around 2016-01-06T07:00z

    The reset happened at the end of the Svalbard X Band Pass that started on 2016-01-05T20:37:12s. Said pass was scheduled for a duration of 624 s. The reset occurred 04:47 after AoS, and before the switch off of the X Band Antenna, scheduled for 20:47:36z. The last TM packet received before the reset was at 20:41:26z. Re-planning was considered by FOS in CRF No. 546 and uploaded by CNES starting during GS Pass IVK-3 on 2016-01-05T09:53:54z.

    MIRAS planning activities were resumed on 2016-01-06T18:31:54z.

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The sequence of events prior to the CCU was:

    2016-01-05 20:37:58.341 XBand Powered On
    2016-01-05 20:38:22.341 MM Full Dump Start
    2016-01-05 20:42:00.152 Mode Change To Full Polarisation

No Alarm packets were received before the reset event.

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

    Read   = 1673606, MM Partition P3
    Write   = 1904040, MM Partition P4

The geolocation of the event was over Artic Regions:

    Latitude   = 80.208146
    Longitude   = 18.345721

As specified in the instrument boot report the reason for the reset was the usual Task Overrun problem (8012 HEX)

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	2016.009.21.49.27.745	20117F4
RAM single Bit Error	WARN	2016.008.21.56.19.713	22DDAE4
RAM single Bit Error	WARN	2016.005.20.42.00.382	23E1660
RAM single Bit Error	WARN	2016.004.22.14.02.537	23E1660

7 FOS Systems Status

All FOS Systems nominal.

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

Replanning due to CCU reset on 26th of December.

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11 AOB

None.

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APPENDIX A: OOLs

The following set of Out of Limit alarms were received at the time the CCU reset on the 5th of January.

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.006.03.15.25.351	2016.005.20.41.59.882	XNIRCAST	NIR CA VALID ST	NOT-OK	OK
2016.006.03.15.25.351	2016.005.20.41.59.882	XNIRBCST	NIR BC VALID ST	NOT-OK	OK
2016.006.03.15.25.351	2016.005.20.41.59.882	XNIRABST	NIR AB VALID ST	NOT-OK	OK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM11167	H1 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPC02106	Instrument_Mode	Inst Init	Any other
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM16167	A3 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM15167	A2 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM14167	A1 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM13167	H3 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM12172	H2 LO_locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM20167	C1 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM19167	B3 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM18167	B2 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM17167	B1 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM22167	C3 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM21167	C2 LO_Locking	UNLOCK	LOCK
2016.006.03.15.25.351	2016.005.20.41.59.882	SPM18167	B2 LO_Locking	UNLOCK	LOCK

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The following PLPC alarm was received indicating the temporary disable of the MIRAS ITL alarm as part of the CCU recovery procedure on the 6th January.

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.006.10.32.45.630	2016.006.09.56.08.750	NTLHK022	ITL Ena State	Disabled	Enable