



1 General Comments

The activities scheduled for this week are those planned for calendar week 17 of year 2015, from 20/04/2015 to 27/04/2015 (DOYs 110 to 117.)

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

- X-band passes over ESAC and Svalbard.
- One NIR External Calibration on 22/04/2015 with ETO at 06:35:56z with the following calibration values.
 Brightness Temperature= 3.682947
 RMS=0.361603
 Sun Elevation above MIRAS=2.247176
 RA= 127.583694
 DEC= 42.565060
- 2 LONG Calibrations on 23/04/2015 and with start times at 03:36:11z and 05:16:00z
- Local oscillator calibration every 10 minutes.

2 Mission Planning Deviation

Due to a CCU reset that happened on day 24/04/2015 at 18:40z, the MIRAS instrument went into auto downlink mode downloading data only over ESAC station. The instrument was reconfigured in the morning of the 25/04/2015 and the replanning for weeks 17 and 18 uploaded again as part of this recovery. The following XBand GS passes over Svalbard were lost:

STATION	START TIME	END TIME	DURATI
Xband_SVAL	2015-04-24T20:02:39.207000	2015-04-24T20:13:05.795000	626
Xband_SVAL	2015-04-24T21:41:34.496000	2015-04-24T21:51:53.195000	618
Xband_SVAL	2015-04-24T23:20:16.776000	2015-04-24T23:30:32.913000	616
Xband_SVAL	2015-04-25T00:58:58.095000	2015-04-25T01:09:21.500000	623
Xband_SVAL	2015-04-25T02:37:59.115000	2015-04-25T02:48:25.458000	626
Xband_SVAL	2015-04-25T04:18:07.489000	2015-04-25T04:27:44.314000	576
Xband_SVAL	2015-04-25T07:40:04.714000	2015-04-25T07:47:00.833000	416
Xband_SVAL	2015-04-25T09:22:31.785000	2015-04-25T09:27:08.079000	276
Xband_SVAL	2015-04-25T11:04:41.945000	2015-04-25T11:08:11.628000	209
Xband_SVAL	2015-04-25T12:45:33.326000	2015-04-25T12:50:30.346000	297



	APR-2015						
	Mon, 20-APR-2015	Tue, 21-APR-2015	Wed, 22-APR-2015	Thu, 23-APR-2015	Fri, 24-APR-2015	Sat, 25-APR-2015	Sun, 26-APR-2015
Int_LO_Phase_Cal_NoUnoise_FULL_NotEXT_SEQ	[Black bars indicating full sequence]						
SBand_Visibility_SEQ							
XB_Cmd_Downlink_Svalb_SEQ							
XB_Cmd_Downlink_Yilspa_SEQ							
Update_Cyclic_LO_Ph_Cal_NoU_Full_EXT_SEQ			◆				
External_Calibration_NIR_Full_OBOP_SEQ			█				
Int_LO_Phase_Cal_NoUnoise_FULL_EXT_SEQ							
Disable_Cyclic_Function_SEQ			◆	◆◆			
Enable_Cyclic_Function_SEQ			◆	◆◆			
Update_Cyclic_LO_Ph_Cal_NoU_Full_NotEXT_SEQ			◆				
Long_Calibration_Full_OBOP_SEQ							



3 TC Failures

None.

4 Unforeseen Out Of Limits (OOLs)

See appendix A for a complete list of OOL's in the period.

5 On Board Anomalies

The following payload anomalies happened during this reporting period:

- Received a short, two frames, Out of Soft Limit alarm for PROTEUS parameter IHTBR on day 20/04/2015 at 13:01:47z and with value 20.382 mAmps. CNES was consulted on this OOL and no anomaly was found and in fact limit checks were different in both sides since CNES had 25 mAmps instead of 20 as FOS has.
- A new CCU reset happened on day 24/04/2015 at 18:39:38z during the XBand pass over ESAC that started at 18:35:55z. The scheduled duration of that pass was 497 seconds and the reset happened 223 seconds after the start of the pass. The CCU recovery procedure was performed the following day by CNES, 25/04/2015, and during GS pass KRU-25 at 08:56z and the instrument recovery completed by 09:01z. A new planning program, CRF 493, was also sent by FOS on 25/04/2015 and uploaded to the spacecraft by CNES during the same previous pass.

In total 22minutes and 47 seconds of science data were lost from 2015-04-25T06:00:26z to 2015-04-25T06:23:13z.

The sequence of events prior to the CCU was as follows:

2015-04-24T18:35:55.680 *XBand Transmitter on*
2015-04-24T18:36:19.680 *Start of Mass Memory data*
2015-04-24T18:39:37.672 *MM Error Counter Acq Failure*
2015-04-24T18:39:37.692 *MM Scrub Frequenc Acq Failure*
2015-04-24T18:39:37.732 *MM Address Acq Failure*
2015-04-24T18:39:37.732 *MM Dump Ended*
2015-04-24T18:39:37.792 *MM Science Write Failure*
2015-04-24T18:39:37.792 *MM Science Write Failure*
2015-04-24T18:39:37.792 *MM Science Write Failure*

After this last event the CCU reset took place and the *Boot Report* packet received on ground indicating as SW Reset reason SLOT_SCH_TASK_OVERRUN, which is the same reason as other previous resets. The values of the READ and WRITE pointers at the time of the reset were:



WRITE=234576 READ=0

and the geolocation of the event was Iberian Peninsula:

Longitude= 356.961171

Latitude= 38.989660

6 Telemetry On Board Events in the period.

The following RAM Single bit error happened just after the CCU reset:

Event Description	Severity	Event Time	Parameters
RAM Single Bit Error	WARN	2015.114.18.40.12.118	23A06A4

Also the following Alarm packets were received just before the CCU reset:

Event Description	Severity	Event Time
MM_Error_Counters_Acquisition_Failure	ALARM	2015.114.18.39.37.672
MM_Scrub_Frequency_Acquisition_Failure	ALARM	2015.114.18.39.37.692
MM_Address_Acquisition_Failure	ALARM	2015.114.18.39.37.732
MM_Science_Write_Failure	ALARM	2015.114.18.39.37.792
MM_Science_Write_Failure	ALARM	2015.114.18.39.37.892
MM_Science_Write_Failure	ALARM	2015.114.18.39.37.992

7 FOS System Status

All FOS systems behaved nominal during this period exception of:

- On 23/04/15 FOS network switch, DPGSDSCNS, of sub-network of 10.10.13x raised a red alarm due to a failure of FAN-1. The fan was replaced by a spare unit, after the replacement the device was again working fine.

8 Data Reception from CNES

All SBand passes of the week were correctly received from CNES and successfully processed by the FOS PLPC system with the following exceptions:

- On 22/04/15 and for SAUS01 ground station pass at 04:24z, the system reported 2 bunch of missing packets with the following ground time stamps.

Date	Packets	APID	SSC
2015.112.05.08.54.697	5783	2	7071
2015.112.05.02.16.071	2010	2	9080

The reason for these errors was due to the wrong inclusion of two telemetry files from a different grounds station pass on the 16th of April most probably from old GS pass, AUS-15 of day



16/04/2015.

The name of these two wrong files were:

SMO_PLTM1_P_2015_04_16_06_40_46

SMO_PLTM1_P_2015_04_16_06_42_58

CNES was informed about this issue.

- On 23/04/2015 and from KER 43 pass, seven packets were lost.
- On 26/04/2015 the programmed SBand pass over Kourou station, KRU-27, was cancelled and substituted by a new pass SKRN01-29 at 20:25z. Unfortunately that pass failed due to a designation problem and no data was acquired, as consequence of that 7hours and 45 minutes of data were lost from 2015-04-26T12:42:02z to 2015-04-26T20:27:43z. MIRAS Housekeeping telemetry for that gap was recovered using the XBand data and PXMf system.

9 X-Band Data Reception in PXMf

Due to the failure of Sband pass SKRN01-29, PXMf was used to retrieve MIRAS PUS telemetry from 2015-04-26T12:42:02z to 2015-04-26T20:27:43z.

10 Exceptional Activities

Due to the CCU reset that happened on day 24/04/2015, the planning for weeks 17 and 18 was resend on the night of the 25/04/2015.

11 AOB

None.



APPENDIX A: OOL's

The following OOL list were received at the time of the CCU reset only the first one was issued at the time of the CCU recovery procedure.

GS_TIME	OBTIME	SEVERITY	ALARM VALUE	CHECK VALUE	PARAMETER	DESCRIPTION
2015.115.09.31.40.350	2015.115.08.58.51.702	STATUS CHECK	DISABLED	ENABLED	NTLHK022	ITL Ena State
2015.114.22.09.56.077	2015.114.18.40.11.618	STATUS CHECK	NOT-OK	O.K	XNIRCAST	NIR CA VALID ST
2015.114.22.09.56.077	2015.114.18.40.11.618	STATUS CHECK	NOT-OK	O.K	XNIRBCST	NIR BC VALID ST
2015.114.22.09.56.076	2015.114.18.40.11.618	STATUS CHECK	NOT-OK	O.K	XNIRABST	NIR AB VALID ST
2015.114.22.09.56.071	2015.114.18.40.11.618	STATUS CHECK	INST INIT	Any other	SPC02106	Instrument_Mode
2015.114.22.09.56.070	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM11167	H1 LO_Locking
2015.114.22.09.56.069	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM12172	H2 LO_locking
2015.114.22.09.56.068	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM13167	H3 LO_Locking
2015.114.22.09.56.065	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM14167	A1 LO_Locking
2015.114.22.09.56.064	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM15167	A2 LO_Locking
2015.114.22.09.56.062	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM16167	A3 LO_Locking
2015.114.22.09.56.060	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM17167	B1 LO_Locking
2015.114.22.09.56.059	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM18167	B2 LO_Locking
2015.114.22.09.56.058	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM20167	C1 LO_Locking
2015.114.22.09.56.058	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM19167	B3 LO_Locking
2015.114.22.09.56.057	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM21167	C2 LO_Locking
2015.114.22.09.55.987	2015.114.18.40.11.618	STATUS CHECK	UNLOCK	LOCK	SPM22167	C3 LO_Locking