1 General Comments

Activities scheduled for this week are those planned for the 33rd calendar week of 2016:

15 AUG 2016 to 22 AUG 2016 (DoYs 228 to 235).

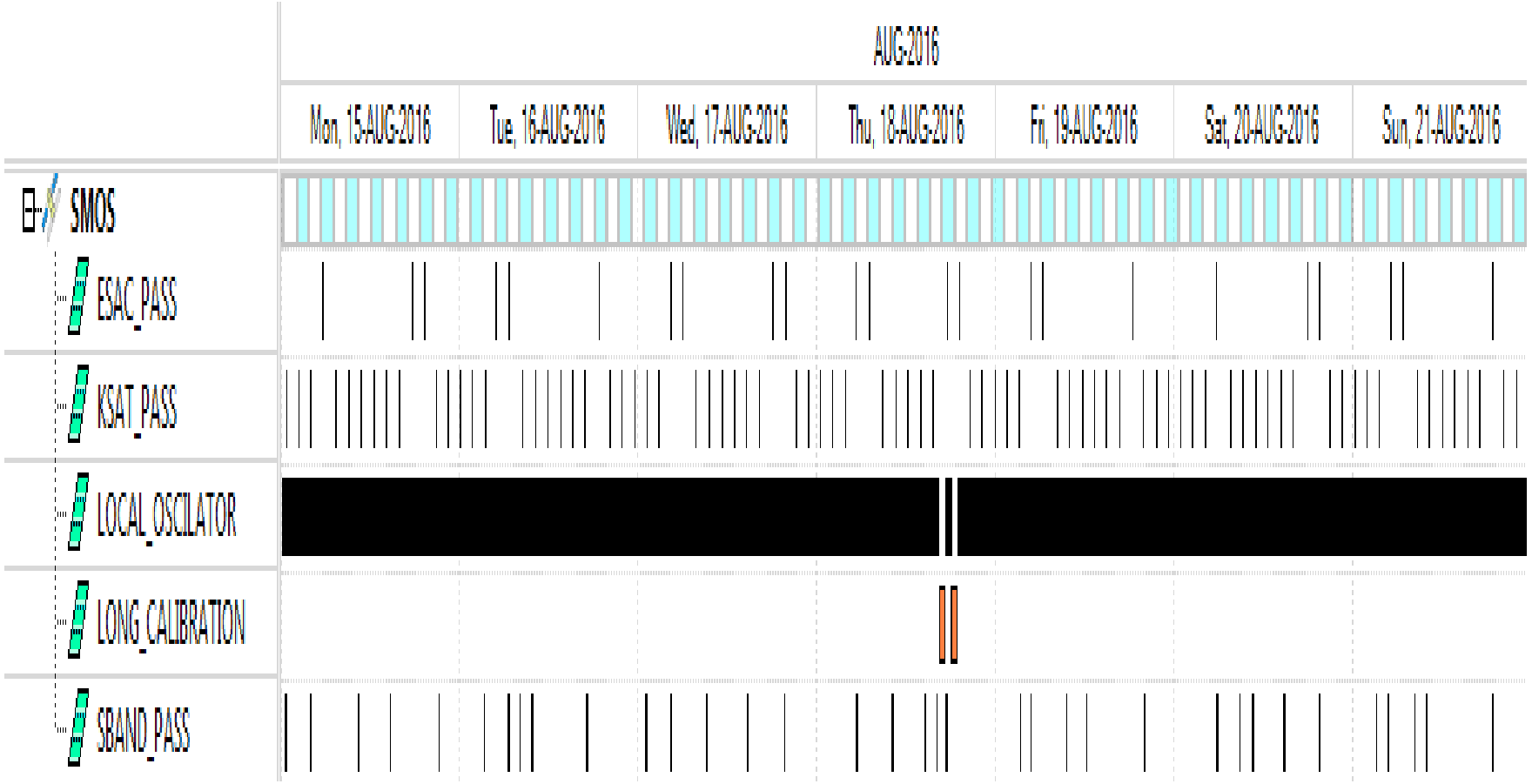
The following routine activities were planned this week (see Gantt chart on next page and CRF 596):

- Two LONG Calibrations on 18 AUG 2016 (DoY 231), which encompassed two orbital periods starting at 16:33:30,0z (orbit 35708) and 18:13:30,0z (orbit 35709).
- Local Oscillator Calibrations every 10 minutes.
- *X* band Passes over ESAC and Svalbard.

2 Mission Planning Deviations

Due to the MIRAS CCU reset that happened on 2016-08-15 (see section 5), the following XBand passes were not received on ground:

Station	AOS	LOS	Duration
SVAL	2016-08-15T09:15:38.782000	2016-08-15T09:20:23.707000	284
SVAL	2016-08-15T10:57:52.839000	2016-08-15T11:01:21.960000	209
SVAL	2016-08-15T12:38:49.259000	2016-08-15T12:43:37.307000	288
SVAL	2016-08-15T14:18:53.571000	2016-08-15T14:26:02.062000	428
SVAL	2016-08-15T15:58:37.055000	2016-08-15T16:07:39.260000	542


AUG-2016
Mon, 15-AUG-2016
Tue, 16-AUG-2016
Wed, 17-AUG-2016
Thu, 18-AUG-2016
Fri, 19-AUG-2016
Sat, 20-AUG-2016
Sun, 21-AUG-2016
SMOS
ESAC_PASS
KSAT_PASS
LOCAL_OSCILATOR
LONG_CALIBRATION
SBAND_PASS

3 TC Failures

None.

4 Unforeseen Out of Limits (OOLs)

Several Out of limits were received at the time of the MIRAS CCU reset on the 2016-08-15 (see Appendix-A for further details)

5 On Board Anomalies

- A new MIRAS CCU reset happened on the 15 of August 2016, at 07:38:16z. First possible indications of this reset were noted by the DPGS operator on shift around 2016-08-15T10:45:00z. At that time the Svalbard XBand pass with AOS/LOS, 2016-08-15T09:15:38z/2016-08-15T09:20:23z, was not received on ground. KSAT operator also notified by email that no signal from the spacecraft was received for that particular pass.
  The two following XBand passes over Svalbard also failed and the CCU reset was later on confirmed during the reception of the first SBand morning pass at 2016-08-15T10:30:00z.
  It was agreed during a telephone call among FOS and CNES on-call teams at 11:30z, to upload the CCU recovery procedure and MIRAS replanning activities during the following SBand available pass at 2016-08-15T14:48z. As per nominal planning procedure, FOS team had produced in advance a suitable re-planning file for this contingency and MIRAS activities were resumed in the evening of the same day at 17:52:40z (CRF-596)

  This new reset took place in the middle of the Svalbard X Band GS pass commencing at 2016-08-15T07:33:13z. Said pass was scheduled for a duration of 425 seconds. The reset occurred 198 seconds after the station AOS and before the switch off of the X Band antenna, scheduled at 2016-08-15T07:40:18z. The last TM packet before the reset was received at 2016-08-15T07:38:17z.

  The sequence of events including alarm and event packets leading to the CCU reset was as follows:

  2016-08-15T07:34:34.316z, XBand Power on
  2016-08-15T07:34:58.316z, Mass Memory Dump Start
  2016-08-15T07:38:16.368z, Mass Memory Ended

  Just before the reset the following alarm packets were issued by the instrument OBSW:
  2016-08-15T07:38:16.308z, MM_Error_Counters_acquisition_Failure

2016-08-15T07:38:16.328z, MM_Scrub_Frequency_Acquisition_Failure
2016-08-15T07:38:16.368z, MM_Address_Acquisition_Failure
2016-08-15T07:38:16.418z, MM_Science_Write_Failure
2016-08-15T07:38:16.518z, MM_Science_Write_Failure
2016-08-15T07:38:16.618z, MM_Science_Write_Failure

Just after the reception of this last alarm packet the CCU reset was then triggered.

It is worth to mention that immediately after the reset, three packets that are normally received with their correct OBT, this time were not correctly correlated, these packets were:

MIRAS HK Packet SID2
Mode Change to Full Polarization
RAM Single Bit Error

The reason for this problem was that the platform PPS signal was not correctly received for just one Epoch after the reset and in fact the following two Error packet were received immediately after the reset:

Time_Correlator_Unexpected_UTC
Time_Correlator_Unexpected_PPS

Further investigations have shown that the same problem have also been seen in the past during the following resets:

2011-02-28T20:17:14z
2011-02-10T03:24:46z
2011-12-01T02:49:14z
2012-01-10T21:56:52z
2012-05-20T03:32:43z
2016-06-05T03:38:57z

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

Read = 1251691 MM Partition P3
Write = 1543836 MM Partition P2

6 On Board Events Telemetry

Immediately before the MIRAS CCU reset the following Alarm packets were received on ground:

Event Description	Severity	Event Time
MM_Error_Counters_acquisition_Failure	ALARM	2016-08-15T07:38:16.308
MM_Scrub_Frequency_Acquisition_Failure	ALARM	2016-08-15T07:38:16.328

MM_Address_Acquisition_Failure	ALARM	2016-08-15T07:38:16.368
MM_Science_Write_Failure	ALARM	2016-08-15T07:38:16.418
MM_Science_Write_Failure	ALARM	2016-08-15T07:38:16.518
MM_Science_Write_Failure	ALARM	2016-08-15T07:38:16.618

The following RAM Single Bit errors befell this week:

Event Description	Severity	Event Time	Parameters
RAM single Bit Error	WARN	2016.233.10.56.05.692	21F659C
RAM single Bit Error	WARN	2016.230.10.04.24.833	23DFBA4
RAM single Bit Error	WARN	2016.228.11.10.45.047	2177CFC
RAM single Bit Error	WARN	2016.228.04.37.52.370	2177CFC

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.

9 *X* Band Data Reception in PXMF

None, all *S* band passes successfully received and processed.

10 Exceptional Activities

None.

11 AOB

None.

APPENDIX A: OOLs

The following Out of Limits were received at the time of CCU reset on the 15th of August:

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.228.11.11.01.399	2016.228.11.10.45.046	XNIRCAST	NIR CA VALID ST	NOT-OK	OK
2016.228.11.11.01.399	2016.228.11.10.45.046	XNIRBCST	NIR BC VALID ST	NOT-OK	OK
2016.228.11.11.01.399	2016.228.11.10.45.046	XNIRABST	NIR AB VALID ST	NOT-OK	OK
2016.228.11.11.01.396	2016.228.11.10.45.046	SPC10107	PPS_ERROR_FLAG	Unexpected	Valid
2016.228.11.11.01.396	2016.228.11.10.45.046	SPC02106	Instrument_Mode	Inst Init	Any other
2016.228.11.11.01.395	2016.228.11.10.45.046	SPM13167	H3 LO_Locking	Unlock	Lock
2016.228.11.11.01.395	2016.228.11.10.45.046	SPM12172	H2 LO_locking	Unlock	Lock
2016.228.11.11.01.395	2016.228.11.10.45.046	SPM11167	H1 LO_Locking	Unlock	Lock
2016.228.11.11.01.394	2016.228.11.10.45.046	SPM16167	A3 LO_Locking	Unlock	Lock
2016.228.11.11.01.394	2016.228.11.10.45.046	SPM15167	A2 LO_Locking	Unlock	Lock
2016.228.11.11.01.394	2016.228.11.10.45.046	SPM14167	A1 LO_Locking	Unlock	Lock
2016.228.11.11.01.393	2016.228.11.10.45.046	SPM19167	B3 LO_Locking	Unlock	Lock
2016.228.11.11.01.393	2016.228.11.10.45.046	SPM18167	B2 LO_Locking	Unlock	Lock
2016.228.11.11.01.393	2016.228.11.10.45.046	SPM17167	B1 LO_Locking	Unlock	Lock
2016.228.11.11.01.392	2016.228.11.10.45.046	SPM22167	C3 LO_Locking	Unlock	Lock
2016.228.11.11.01.392	2016.228.11.10.45.046	SPM21167	C2 LO_Locking	Unlock	Lock
2016.228.11.11.01.392	2016.228.11.10.45.046	SPM20167	C1 LO_Locking	Unlock	Lock

During the execution of the CCU recovery procedure the onboard MIRAS ITL went nominally Out of Limits

GS_TIME	OBTIME	PARAMETER	DESCRIPTION	OOL Value	Check Value
2016.228.21.50.01.608	2016.228.14.51.32.494	NTLHK022	ITL Ena State	Disable	Enable