XMM-Newton and INTEGRAL weekly Mission Operations Report

XMM-INT-WOPS-23_30-31

Issue 1

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1. Weekly report

	XMM	**Integral**
Main activities	▪ Nominal Operations ▪ MUST recovery ▪ Eclipse OPS 03-17 July ▪ OA OPS tools servers S/W and H/W migration ▪ DABYS D/B prototype ▪ Tolhuin station consolidation ▪ G/S ops automation (part2/ NIS) ▪ Lela final migration to MCS ▪ Manual spacecraft recovery without propellant procedures ▪ CDMU recovery automation	▪ Routine science operations
Status and performance of S/C	▪ Nominal for platform and all instruments	▪ Manual transponder swaps following RF switch anomaly
Status and performance of Ground segment	▪ Nominal	▪ Occasional data buffering on the MCS, otherwise nominal
S/C Anomalies	▪ XMM_SC-154 HLCL 5.2A went from CLOSED to OPEN	▪ INT_SC-737 TC KU0003B failed release due to PTV failure (Static PTV NO GO).
G/S Anomalies	▪ XMM-1540 Electrical fault in no-break power affecting E41 (INT-XMM-Gaia DCA)	▪ INT-3912 Electrical fault in no-break power affecting E41 (INT-XMM-Gaia DCA)
Future activities planned	▪ Face in of new service contract for SOEs ▪ NSM via MOIS ▪ NSM on board ▪ Webserver and NRT Analysis/Monitoring migration	▪ Automation of Transponder swap operations ▪ Automation of ground station operations (EVFM) ▪ Disposal optimisation manoeuvre preparation

2. Detailed weekly operational events

note: all times are Zulu (in brackets DOY)

2.1. XMM

- 25/07/2023 (206) 08:20:11: OI 4589 MOIS Ixauto-D to Ixauto-H, AS 3.0.4 IXAUTO icon did not work. Had to launch from command line. Automation 3.0.4 live for Operations (IXAUTOH)

- 25/07/2023 (206) 10:26:29: Lela resgtarted. EC
  10:28:01 Lela frozen, no mouse or keyboard response
  11:45:20 LELA machine reatsrted by NP/CCC. Lela restarted OK.

- 28/07/2023 (209) 20:00:49: OOL P2118 "H:CL 5.2A STAT". Status = Open. CRP_EPS_0212: FPDU HLCL OFF failure. TC T2141 sent to close HLCL. ***See XMM_SC-154***

- 29/07/2023 (210) 03:12:51: Failure of autocommand to set MOS1/2 into Cal_Closed due no TC. (Groundstation Handover) MOS 1/2 sent into Cal_Closed manually per SCP_SYS_5101 steps 20, 22. S/S 3 & 4 disabled in Autostack.
  03:16:26 X_CRP_EM1/2_5101: "End of procedure with error. MOIS could not verify S/S 3/4 was disabled in MStack, AStack ad ECH...."
  03:35:22 X_SS_EVT_ENABLE: S/Ss 3, 4, 5, 7, 8 re-enabled by MOIS. X_MCOOL1_SET: MCOOL1 set to 1

- 02/08/2023 (214) 18:55:13:
  Following the discovery of an electrical fault of the no-break power distribution in the DCA, the FM technicians declared the risk to be life-threatening (Lebensgefarlich) and that power would have to be shut down as soon as practically possible.
  On-call SOEs were informed. Preparations were made to move out of DCA as required. ***See XMM-1540***
  20:29:40 ACH has died
  20:41:25 AutoCmd attemps WD rest for MOS1 and MOS2 but fails as ACH is down
  21:11:00 Onboard Watchdog expires for MOS1 and MOS2 and sets both instruments to SAFE STANDBY
  21:27:55 All DCA (Spacon MCS & Spacon ancilliary) systems swapped to short-break power, restarted and nominal status. Spacecraft operations were unaffected.

  02/08/2023 (214) 05:50:46:
  Soc call. Speak to soc who suggest start recovery from SCP_SYS_5004, case a, step 9.4, as MOS1+2 are in safe at moment. Also double check with oncall that instruments are not put to safe due to electrical problem
  05:59:45 SCP_SYS_5004, case a, step 9.4
  06:02:11 SCP_SYS_5009, from step 2.1, Mos1+2 to idle

  03/08/2023 (215) 09:00:10:

OI 4590 - Database Update v7.18 - Shutdown XMC A-chain (XMCA, XLTA, XCLA1-4) 09:20z - configured XMC A-chain and disconnected again. 10:00z - Update of XMCS A-chain (XMCSA, XMCSLTA, XCLAS1-4) 10:12z - configured XMCS A-chain and connected for TM only.

2.2. INTEGRAL

26/07/2023 (207) 12:11:57 -
OBEH, strange OM messages 10* 1792, 171 Sci Window Rejected and multiple 1792, 179 Cent Cycle however they are Events, not Alarm
Cross ref:
Log the occurrence.
- IF the problem persists THEN inform OMC SOE during working hours.
-oncall called

27/07/2023 (208) 17:09:54 -
OBEH, multiple OMC messages 1792, 171 Sci Window Rejected

28/07/2023 (209) 03:22:54 -
TC A3089 "Start sun steer" (AESSS_00) failed release due to PTV failure. Reason unknown but there many EvL messages at the time from Belt Entry reconfiguration.

OSL #2667_0080 missed from timeline - recovered manually

28/07/2023 (209) 19:25:38 -
TM: M5024 'CCD OFF' STATUS-OOL (value= 1)
TM: MD0033D OMC_SAFEOUTBELT STATUS-OOL (value=1)
OMC went to SAFE due to high radiation. NOAA website shows increased activity.
Waiting for counts to be below threshold for 2 hours as per CRP_OMC_5120, before OMC re-join.

29/07/2023 (210) 04:06:39 -
TM: Param. K5317 ('RAD MONITOR 3') OOL (value = 95)
TM: Param. L5317 ('RAD MONITOR 3') OOL (value = 95)
High radiation environment. IREM counts high and increasing.
Executed FCP_JEM1/2_0040 JEMX1/2 TRANSITION TO SAFE.

29/07/2023 (210) 05:09:51 -
OOL GD9921D. IBIS RAD TH ELEC. Val. Hard/High (Parameter that indicates when IBIS ELECTRONS RADIATION THRESHOLD FOR ENTERING SAFE MODE is exceeded outside belts). Toggling of OOL ~1/min since 04:32.
X-ref action; Command IBIS into safe (send TC seq. GS0801) if automation does not put instrument into standby.
IBIS s/s disabled in a/s and above TC seq. sent.
It was decided to do so given the OOL toggling and the clear overall trend of increasing radiation. Last transition to OOL which remains OOL at 04:58:59

29/07/2023 (210) 16:01:14 -
Sent GS0803 2023.210.15.33.as per FCP_IBIS1_0803 under SOE guidance.
GESTAN02 sent 2023.210.15.49
S/S was re-enabled 2023.210.15.52

30/07/2023 (211) 06:55:10 -
S/S OMC enabled on the A/S

30/07/2023 (211) 14:38:45 -
OI2384. Recovery of JEM-Xs after high radiation (steps 1 & 2).
1. IREM paras below threshold for more than 1hr.
2. Apply, FCP_JEM1_0041. Transition to Setup.

30/07/2023 (211) 14:55:03 -
OI2384. Recovery of JEM-Xs after high radiation (step 3).
Apply, FCP_JEM1_1010. Configure for science. (seq. takes ~22mins to complete)

30/07/2023 (211) 15:19:43 - As part of FCP_JEM1_1010. JEM-X1 configure for science, TC KU0003B failed release due to PTV failure (Stactic PTV NO GO).
Contacted on-call SOE. ***See INT_SC-737***

30/07/2023 (211) 15:49:21 -
With guidance from on-call SOE, snet TC K0008, JEM-X1 to SAFE. Analysis of PTV failure with SOE found incorrect value entered for TC KU0003B (FCP_JEM1_1010, step 3.6), where val of K0001F (part of KEHVAC01 in APF) has to be 3 LESS than the stated value. Stated value was entered instead.

30/07/2023 (211) 15:50:57 - with support of the on-call SOE the JEM-X have been recovered

30/07/2023 (211) 17:22:55 -
OI2384. JEM-X 1&2. Sent missed seqs. ED KEDATA02 & LEDATA02

01/08/2023 (213) 18:24:52 -
TC: MU1321 failed release (Reason: unknown, probably delayed TM)

01/08/2023 (213) 19:29:38 - OOL G5046. POE-PDM2STB. Val. OFF. Limit ON
OEM. EvID 170. Type. EXCEPTION. Desc. IBIS1 PICSIT LATCHED UP MODULE NOTIFICATION.
X-ref actions. Inform on-call SOE, then under SOE guidance apply: FCP_IBIS1_0317. then FCP_IBIS1_0313* (where last 4 no.s correspond to relevant PDMi unit).

01/08/2023 (213) 20:47:50 - Recovery performed with SOE guidance
OOL G5046 recovery. With SOE guidance. Final x-ref action resend most recent seq. of GESTAN02

01/08/2023 (213) 22:37:22 - IREM crash

02/08/2023 (213) 00:56:31 - Recovery finished

02/08/2023 (214) 18:55:13 -
Following the discovery of an electrical fault of the no-break power distribution in the DCA, the FM technicians declared the risk to be life-threatening (Lebensgefarlich) and that power would have to be shut down as soon as practically possible.
On-call SOEs were informed. Preparations were made to move out of DCA as required. Access to D103 was checked. Essential documents were gathered. ***See INT-3912***

02/08/2023 (214) 21:27:54 -
All DCA (Spacon MCS & Spacon ancilliary) systems swapped to short-break power, restarted and nominal status. Spacecraft operations were unaffected.

03/08/2023 (215) 22:46:59 -
TM glitch / drop from G/S KIR, reason: unknown, duration: 13s, impacts: none

05/08/2023 (217) 13:06:22 -
M5024 CCD Off,

05/08/2023 (217) 13:09:12
MD0033D OMC safe_outofbelt

05/08/2023 (217) 13:12:34 -
MEBEXT01 Reset Roe Fails release (OMC still in safe)
No radiation OOLs but GRD MG0002 (D5214) shows radiation hovering around limit
Will wait until radiation drops a bit before recovering (OMC from Safe). OI 2384

05/08/2023 (217) 13:27:31 - OMC manually disabled in autostack

05/08/2023 (217) 21:30:45 -
OMC RMC Rates below threshholds for 1hr+. Recovery of OMC following OI #2384
- CRP_OMC_5120: "OMC Recovery from High Radiation" step 3.
- FCP_OMC_0041: "OMC Exit from Safe"
- MEBEXT01: "OMC Reset ROE"
- Uplink MEIM-A01, MEIMB[N01]
- OMC re-enabled.

06/08/2023 (218) 00:18:28 -
OOL M5024 'CCD OFF' STATUS-OOL (value= 1)
OOL MD0033D OMC_SAFEOUTBELT STATUS-OOL (value=1)
OMC --> SAFE due to a radiation. To be recovered after 1hr+ below RMC threshholds. OMC disabled.

06/08/2023 (218) 01:39:22 -
OMC RMC Rates below threshholds for 1hr+. Recovery of OMC following OI #2384
- CRP_OMC_5120: "OMC Recovery from High Radiation" step 3.

- FCP_OMC_0041: "OMC Exit from Safe"
- OMC re-enabled for next pointing.

06/08/2023 (218) 06:40:24 -
Fast TRSP swap 1 --> 2
Sent P0110
AD Service initiated, - Test Cmd OK
No TM being received after TRSP swap to TRSP1. ESTRACK are informed and are investigating

06/08/2023 (218) 08:15:24 -
Lost TC AOCS cmds failed. AOCS S/S disabled

06/08/2023 (218) 08:50:02 -
Manual slew 2671_0500_M.OSL from PID #26710022 to #26710023

06/08/2023 (218) 09:15:11 - Spacon error, the request was for TRSP 2