
EUROPEAN SPACE AGENCY
DIRECTORATE OF TECHNICAL & OPERATIONAL SUPPORT
MISSION OPERATIONS DEPARTMENT

INTEGRAL
Mission Report
INT-MOC-SYS-RP-1001-TOS-OF
No. 027
Week 13
28.03.03
Routine Phase

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1 General

The Flight Control Team at MOC has compiled this report considering a couple of inputs provided by the Flight Dynamics Team.

It addresses the activities from 22.03.03 until 28.03.03 (both dates inclusive) and covers the revolutions 53, 54 and 55.

2 Summary of Activities

The operations were performed according to the planning inputs from ISOC combined with some manual commanding of the instruments by MOC.

The targets of the revolutions were Aql X-1 (RA 19:11:16.00; DEC +00:35:06.0), the Galactic centre and the Galactic plane. The activities included raster dithering, GPS and GCDE observations.

Note: Some further information concerning the activities is provided in the Appendix.

3 Satellite Status

3.1 Platform

The performance of the platform was good. No unexpected behaviour / malfunction was identified.

3.1.1 AOCS

During this week there were two losses of guide star. On one occasion the ACC selected guide star was very close to the STR FOV and on the second occasion the guide star was released after the SEU filter threshold was exceeded.

There was an OTF jitter at the end of an Open Loop Slew because of a large roll error. There were as well two other occurrences of OTF jitter due to jumps in the guide star position, which caused excessive pitch errors. None of the above OTF jitters were seen at BCP level.

We also had three occurrences of sharp increase in the temperature of one hydrazine pipe thermistor (T6055) for short periods of time. This is a known behaviour (see INT-RP-AI-0267, Integral Commissioning: Thermal Subsystem), due to redistribution of hydrazine in the pipes. The temperatures reached in these cases were 56.25, 61.67 and 58.75 degrees centigrade.

The fuel consumption over the last 6 days was 0.23 Kg. The remaining propellant is in the order of 178.72 Kg on the 25th of March.

Note: Some more information concerning the AOCS operations and the fuel budget is provided in the Appendix.

3.1.2 Power

The power subsystem is working as specified. The available power is in the order of 2380 W as since the beginning of the mission, i.e. no degradation has been identified so far.

3.1.3 Thermal

The thermal control of the satellite is working well. The temperatures are currently all within the specified operational limits.

3.1.4 OBDH

The OBDH subsystem is working flawlessly. No on-board communications problem identified.

3.1.5 RF

The RF subsystem is working properly. The link margin is sufficient to ensure proper TM reception and execution of commands with the ranging channel enabled.

3.2 Payload

3.2.1 SPI

The status is nominal.

The instrument is operating in photon by photon mode with Spectra telemetry disabled. The TM bandwidth assigned to SPI was 69 pkts for all the period.

The Cryo-cooler is working nominally ensuring 85K temperature in the detector cold plate.

Note: Some more information concerning the SPI operations is provided in the Appendix.

3.2.2 IBIS

Status Nominal, on-going routine phase.

Note: Some more information concerning the IBIS operations is provided in the Appendix.

3.2.3 JEM-X

During the reporting period, JEM-X2 operations were performed nominally as planned in the timeline and JEM-X1 was dormant. Near the end of revolution 53, JEM-X2 went to SAFE mode by its onboard protection when the SW trigger rate reached the HV switch OFF threshold at a descending altitude of ~84000 km.

Note: Some more information concerning the JEM-X operations is provided in the Appendix.

3.2.4 OMC

During the reporting period, two apparently isolated OMC application software anomalies occurred:

On 22 March 2003, Day-of-Year 081, at 20:14:08 and 21:49:36 OMC CSSW issued Constraint Error exception OEMs. At the time of these OEMs OMC status was completely nominal. Later investigation by the PI led to the conclusion that at those times the combination of commanded windows in the crowded Sagittarius sky region had caused the OMCAS error. The CSSW and OMCAS correctly handled the situation on both occurrences by stopping the readout of data and waiting until the next transition to STANDBY.

On 24 March 2003, Day-of-Year 083, during the execution of the CCCF when the PID was set to zero and the OTF was masked by the CCCF, OMCAS crashed during an attempt to read an analogue line at the time of transition to STANDBY mode. To recover the instrument, two unsuccessful attempts were made to restart the application software by sending the OMCAS start TC. At the end a cold reset of the DPE was commanded and then the OMCAS was successfully restarted.

Note: Some more information concerning the OMC operations is provided in the Appendix.

3.2.5 IREM

The status of the unit is nominal.

4 Ground Facilities

The overall performance of the ground segment was good, well above the required 95 %. Only two slews were not executed as planned in the reporting period, which corresponds to less than 1 % of the planned slews. Despite of the data drops that occurred during this week the real-time data return was well above the system specification.

4.1 Mission Operations Centre

On day 087, at 02:09, TC A3189 failed release, in addition, the IMCS A did not accept TPFs, and was showing 'red'. An attempt was made to switch to the B chain, but problems were encountered when starting the Manual Stack. In the mean time, the IFTS task had been restarted on the A chain, enabling control to be switched back. The impact was slews 40, 41, 42 and 43 of revolution 55 were missed, with slew 44 executed manually.

4.2 Ground Stations & Network

The performance of the operational network was in general good though there were a few problems related to the ground stations:

- On day 082 from 18:06 to 18:07 the TM link from DSS-16 dropped, the TM returned when the antenna was switch from auto-track to program-track. From 18:11 to 18:18, there was intermittent bit lock on the TC link, this stopped when network un-bound, and re-bound the TC link. From 18:26 to the end of the pass at 18:55, there were more intermittent bad TM frames. From 18:30 to the end of the pass the intermittent bit lock returned, preventing up-link of a guide star change, despite the pass being extended from nominal by 15 minutes.

- On day 083 at 00:52, the TM and TC links to Redu dropped, these were restored 2 minutes later, when the redundant ISDN line was brought up. At 01:04, there was a further 2 minute TC and TM drop.
- On day 084, at 12:44 the bit lock on the TC chain to DSS-16 dropped, returning 5 minutes later, impact a pointing was partially lost, having to have been manually performed. From 13:39 to the end of the pass at 18:45, there were frequent brief TM drops from DSS-16, no impact.
- On day 085 from 11:18 to 12:47, there were again frequent brief TM drops from DSS-16, slew 100 of revolution 54 was missed and had to be manually performed. At 18:23 for 1 minute, the TC link via DSS-16 went down, no impact.
- On day 086, from 16:58 to 17:04, there was a drop in VC7 TM data from Redu, no impact.
- On day 087 from 12:42 to 18:11 there were further brief TM drops from DSS-16, due to 'receiver close to threshold', no impact. At 22:23 the TM from Redu dropped due to network restarting the tracking task. At 23:09 the ground station was switched to VIL2, where further TM and TC drops caused slews 73 and 74 of revolution 55 to be missed.

4.3 Science Ground Segment

4.3.1 ISOC

No ISOC Input has been provided

4.3.2 ISDC

On four occasions last week: on Day 080 from 21:42 to 21:47, on day 083 from 12:22 to 12:28 on day 084 from 08:42 to 08:47 and on day 085 from 15:22 to 16:14 there were transient errors on the TM link to ISDC. The impact was that real time ISDC TM was lost, this will be recovered in due course when the TM CD is supplied.

5 Special Events

None

6 Anomalies

There were a couple of small problems in the reporting period, see chapter 4, but there was no anomaly that impacted significantly the execution of the Timeline.

A list of the pending anomalies since Launch is presented in the Appendix. New anomalies raised during the past week are listed below:

ARid	Date Occurrence	Subject	Segment	Element	Status
INT - 002263	2003/03/22	Data flow interruptions to ISDC	Ground	I/F to SGS	Pending
INT - 002264	2003/03/23	Loss of bitlock + TLM problems on DSS-16	Ground	NASA Sta.	Pending
INT - 002265	2003/03/24	Loss of TC & TM Link	Ground	ESA Sta.	Pending
INT - 002266	2003/03/24	Drop in link from ISDS to ISDC	Ground	I/F to SGS	Pending

INT - 002267	2003/03/25	Drop in link from ISDS to ISDC	Ground	I/F to SGS	Pending
INT - 002268	2003/03/25	No bit lock via DSS-16	Ground	NASA Sta.	Pending
INT - 002269	2003/03/25	Telemetry lost from DSS-16	Ground	NASA Sta.	Pending
INT - 002270	2003/03/26	Late uplink via DSS-16	Ground	NASA Sta.	Pending
INT - 002271	2003/03/26	Drops in telemetry from DSS-16	Ground	NASA Sta.	Pending
INT - 002272	2003/03/26	TC link via DSS-16 lost	Ground	NASA Sta.	Pending
INT - 002273	2003/03/27	Drop in VC7 via REDU	Ground	ESA Sta.	Pending
INT - 002274	2003/03/28	IFTS MCS instance not working	Ground	IMCS	Pending
INT - 002275	2003/03/28	Constraint Error Exception in the OMCAS on DOY081	Space	OMC	Pending
INT - 002276	2003/03/28	Crash of OMCAS on DOY083	Space	OMC	Pending
INT - 002277	2003/03/28	Telemetry lost from DSS-16. DR N100888	Ground	NASA Sta.	Pending
INT - 002278	2003/03/28	FEC failure in REDU	Ground	ESA Sta.	Pending
INT - 002279	2003/03/29	Telemetry lost from DSS-16. DR N109197	Ground	NASA Sta.	Pending
INT - 002280	2003/03/30	Telemetry lost from REDU	Ground	ESA Sta.	Pending
INT - 002281	2003/03/31	TC outage via REDU	Ground	ESA Sta.	Pending

Note: The above list includes some anomalies that occurred after the period that is covered by this report, e.g. the failure of the OMC. The details will be provided in the report of the following week.

7 Future Milestones

It is foreseen to implement the upgrades of the ESOC – Goldstone I/F that were agreed during the ESOC – JPL I/F meeting in the next week. This should reduce the number of data gaps.

In addition the upgrade of the communications I/F between MOC and ISDC will be implemented in the next week that should make the I/F between MOC and ISDC more robust and should reduce the number of disconnections.

8 Appendix

The appendix includes various detailed information.

8.1 Overview of Revolutions

Revolution 53

Revolution 53 consisted of a series of GCDE observations lasting ~44 hours in total. This was followed by a raster dithering observation of Aql X-1 (RA 19:11:16.00; DEC +00:35:06.0) lasting ~16 hours.

Throughout all observations, the TM allocation was 69 SPI; 112 IBIS; 1 JEM-X1; 8 JEM-X2; 5 OMC and all instruments were in their nominal science modes, except for JEM-X1, which remained in Safe mode for the entire revolution.

Revolution 54

Revolution 54 consisted of a GPS of ~20 hours, followed by a GCDE which was performed for the remaining 39 hours of observation time.

Throughout these observations, the TM allocation was 69 SPI; 112 IBIS; 1 JEM-X1; 8 JEM-X2; 5 OMC. All instruments were in their nominal science modes for both observations, except for JEM-X1, which remained in Safe mode for the entire revolution. However, OMC commanding from the Timeline was disabled between 2003-03-24T06:34Z and 2003-03-24T14:15Z (during the GPS) due to an anomaly requiring resumption of OMC science operations by manual commanding.

8.2 Consumables

8.2.1 Detailed Fuel Book-keeping

2003-03-19T07:48:58.000Z processing.	178.9569	F	Automatic TM
2003-03-19T10:18:43.000Z processing.	178.9387	F	Automatic TM
2003-03-20T23:54:06.000Z processing.	178.9193	F	Automatic TM
2003-03-22T10:14:18.000Z processing.	178.9020	F	Automatic TM
2003-03-23T16:09:49.000Z processing.	178.8376	F	Automatic TM
2003-03-23T23:39:58.000Z processing.	178.8169	F	Automatic TM
2003-03-24T08:46:39.000Z processing.	178.8011	F	Automatic TM
2003-03-24T15:54:07.000Z processing.	178.7846	F	Automatic TM
2003-03-24T22:24:00.000Z processing.	178.7354	F	Automatic TM
2003-03-25T10:05:29.000Z processing.	178.7233	F	Automatic TM

This report was generated at Wed Mar 26 08:00:10 GMT 2003

8.3 Detailed Satellite Information

This section contains some detailed information concerning the various subsystems of the satellite and instruments.

8.3.1 AOCs SUMMARY OPERATIONS REPORT 21/03/2003-27/03/2003

AOCs operations were executed from the Automatic Timeline.
During this period, 84 Open Loop Slews, 171 Closed Loop Slews and 8 Momentum Bias were executed. 2 slews were missed. This is around 0.8% of the total.

21/03/03 (Day of Year 080, Revolution 53)

Nothing to report.

22/03/03 (Day of Year 081, Revolution 53)

Guide star released due to proximity to the edge of the STR FOV: During pointing 00530050 the guide star, which was picked by the ACC after the open loop slew was released because it was very close to the edge of the STR field of view. An autonomous mapping was commanded by the ACC and a new guide star was acquired. The details are:

2003.081.04.38.21.275 VALID/FULL VALID MAG 5.3-29747 -9509

2003.081.04.38.21.775 FREE INVALID MAG 8.60 -1 -1

....

2003.081.04.38.25.275 VALID/FULL VALID MAG 8.45 6148 671

The OTF went to low and remained low for the rest of the pointing.

23/03/03 (Day of Year 082, Revolution 53-54)

OTF Flag jitter due to roll error at the end of Open Loop Slew: At the end of open loop slew 00530110 the error in roll with respect to the SSL assumed position was 3 arc-minutes, which is more than the new OTF threshold of 2 arc-minutes. The sequence of events was:

17:11:26.518 In the first cycle of SSL enabled after the slew end, the OTF is set to TRUE although the error was 3 arc-minutes. This is an ACC algorithm feature (problem), which sets the OTF to TRUE on the first cycle after enabling the SSL regardless of the error.

17:11:27.018 On the second cycle, the OTF is properly evaluated taking the error into account and the OTF goes to FALSE.

17:11:33.018 The error is corrected to below 2 arc-minutes and the OTF goes to TRUE. Afterwards the error was further corrected and the OTF remained TRUE.

This happened after Critical Instrument Descend Altitude and it was also not seen at Broadcast Packet level. Therefore, it had no effect on the instrument activities. Looking to the origin of this very high error, it seems that most of it was already there on the previous pointing (2.7'). In this case the OTF didn't flicker because the SSL was enabled by ground TC (since it was after a long slew), and in this case the ACC algorithm works OK. The error was presumably not corrected for the parameters of the next pointing, because the mapping used took place in the time between the slew end and the time when the SSL is enabled, in which case an incorrect assumption for the roll attitude at the end of the pointing is taken by the FDS. The reason for the error being so big at the first place has been traced down to be the result of the residual error on the FSS/STR misalignment, which is propagated during the long open loop slew, together with a simplification in the slew calculation that does not take into account the apparent movement of the sun during the slew proper, as seen from the S/C. In order to correct the problem, an update of the FSS transfer function is going to be performed, based on a "continuous" calibration done by FD based on TM from all the scientific pointings (this is already in place). In addition the slew parameter computation algorithm is going to be modified to account for the sun not being inertially fixed during slews.

Guide Star released by SEU Filter: At the beginning of revolution 54 at 23:22:55 the guide star was released due to the SEU filter being exceeded. An autonomous mapping was commanded by the ACC and a new guide star was acquired. This was below the Critical Instrument Ascend Altitude and had no effect on instrument activities. The details of the lost star were: magnitude 8.5, CCD coordinates (13330, -4655). The S/C altitude at this time was approximately 18900 km.

24/03/03 (Day of Year 083, Revolution 54)

Temperature of T6055 reached 56.25 degC: At 09:49 the temperature of T6055 started to increase from a value of 35 °C, reaching a maximum of 56.25 °C at 10:03, and dropping back to 35 °C at 10:16. For an explanation of this phenomenon, refer to INT-RP-AI-0267, Integral Commissioning: Thermal Subsystem.

25/03/03 (Day of Year 084, Revolution 54)

Slew missed due to ground station problem (Goldstone, DSS-16): At 12:44 the AOCS commanding was disabled from the timeline because of problems with the TC link (no bit lock). This led to missing of slew 00540057.

Temperature of T6055 reached 61.67 degC: At 18:18 the temperature of T6055 started to increase from a value of 44 °C, reaching a maximum of 61.67 °C at 18:26, and dropping back to 29 °C at 18:48. For an explanation of this phenomenon, refer to INT-RP-AI-0267, Integral Commissioning: Thermal Subsystem.

26/03/03 (Day of Year 085, Revolution 54-55)

Temperature of T6055 reached 58.75 degC: At 08:58 the temperature of T6055 started to increase from a value of 45 °C, reaching a maximum of 58.75 °C at 09:03, and dropping back to 25 °C at 09:25. For an explanation of this phenomenon, refer to INT-RP-AI-0267, Integral Commissioning: Thermal Subsystem.

Slew missed due to ground station problem (Goldstone, DSS-16): After station handover from Redu to Goldstone, drops in TM caused failure of AOCS command to start the Offset slew. The AOCS commanding from the timeline was disabled and slew 00540101 was missed. Manual slew to the attitude of pointing 00540101 was done and slew 00540102 was manually updated.

27/03/03 (Day of Year 086, Revolution 55)

OTF jitter due to pitch error: At 01:24:44 the OTF went to FALSE for one cycle. The details are:

01:24:44.276 8.3-2731 7725
01:24:44.776 8.4-2907 7868
01:24:45.276 8.35 -2733 7725

The jump in the pitch coordinates was 176 CCD units or 43.12 arc-seconds. This is more than the current threshold of 36 arc-seconds.

At 01:28:26 the OTF again went to FALSE for one cycle, with the following details:

01:28:26.283 8.3-2727 7731
01:28:26.783 8.4-2904 7873
01:28:27.283 8.35 -2730 7725

The jump in pitch coordinates was 177 CCD units or 43.36 arc-seconds.

None of the above cases were reflected in the Broadcast Packet. This happened at an altitude of approximately 42500 Km. Looking into the flight dynamic attitude log file, an "Unmatched TM image" with a magnitude of 8.4 and CCD coordinates of (-2726, 7726) was reported by the STR, which did not match any entries in the star catalogue extract. However, the following two stars did exist in the star catalogue:

8.6-2957 7939
8.48 -2566 7720

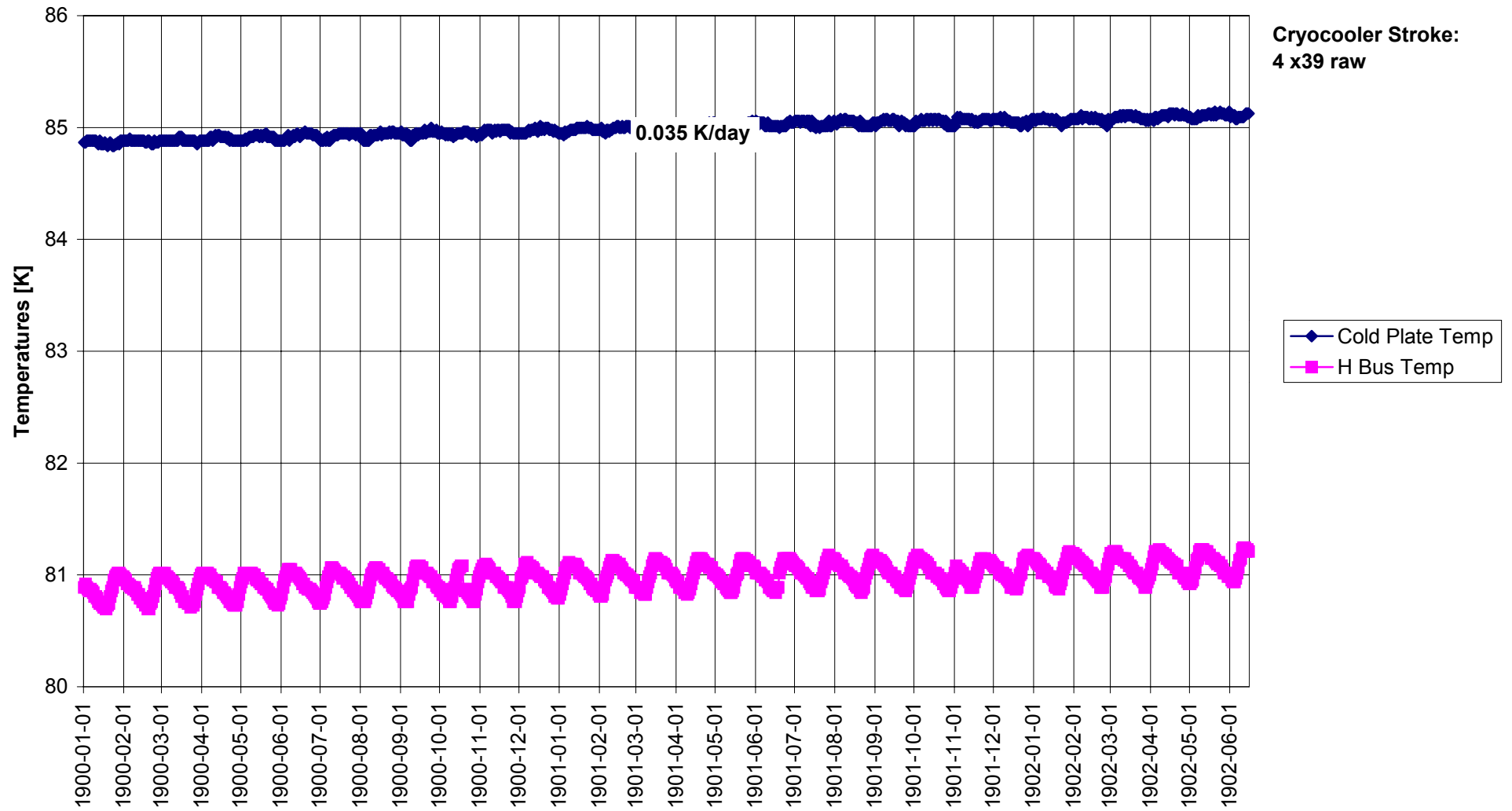
Apparently the barycentre of the images of these two stars was taken as the guide star, which had jumped two times.

8.3.2 SPI Operations

No special events occurred in the last week.

The drift of the cold plate temperature still continues at about 0.035K/day. See attached plot.

Week 13 - SPI Cold Plate Temperatures



8.3.3 IBIS Operations

There were a few incidences of the OEM ID 167 Class 2 <<IBIS1 PICsIT NOISY SEMIMODULE>> during the Belt passage, due to the PICsIT detectors being ON without the VETO anticoincidence system, as required by Pls.

On DOY 2003. 080.20.42Z, 080.21.08Z and 80.22.16Z the OEM ID 179 Class 2 <<IBIS1 VETO COUNTER BOTTOM EXCEEDS ALERT VALUE>> was reported. The relevant TM_para G6062 reported values inside limits after a few TM cycles and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

On DOY 2003. 081.04.38Z and 081.22.57Z the OEM ID 180 Class 2 <<IBIS1 VETO COUNTER LATERAL EXCEEDS ALERT VALUE>> was reported. The relevant TM_para G6063 reported a value inside limits and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

On DOY 2003. 082.15.51Z the VETO Lateral and Bottom Counter (TM para G6062-63) reported OOL. The value was >36000 cts/sec. At 16:10, 20 minutes before radiation belt entry, the IBIS (+VETO) was commanded from ground to Stand-By.

On DOY 2003.083.01.04Z the ED GEISCL03 failed execution due to a TM drop. The IBIS s/s was disabled and the calibration performed manually. At 03.03 the IBIS s/s and CCCF were re-enabled.

On DOY 2003.083.18.45Z the G5002 family (PDMs semimodules counters) went OOL Alarm Low (=0). At 18:55 all the counters were back in limits. No action had been taken: an AR has been already raised during the Commissioning phase (No OEM flagging the resynch of the peripherals has been reported this time).

On DOY 2003. 086.05.22Z the OEM ID 183 Class 2 <<IBIS1 VETO +5V VECU VOLTAGE OUT OF RANGE>> was reported. The relevant TM_para G6106 reported a value inside limits and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

8.3.4 JEM-X Operations

23-Mar-2003, DOY 082, Revolution 53

- 12:58:57, JEM-X2 went to SAFE mode after the SW Trigger Rate reached the HV switch OFF threshold of 20000. This was at a descending altitude of ~84000 km and about 2 hours before the JEM-X2 SAFE TC planned in the timeline. JEM-X2 remained in SAFE mode for the rest of revolution 52.

8.3.5 OMC Operations

22-Mar-2003, DOY 081, Revolution 53

- 20:14:08, OMC CSSW issued OEM class 1, ID 7: "Ada exception CONSTRAINT_ERROR raised in DPE SW by OMCAS Task 4 (SEQUENCER)". This OEM was followed by OEM class 2, ID 5: "DPE CSSW internal error – Unexpected Exception".

2003.081.20.14.15.325 2003.081.20.14.08.080 1792 Real Time Exception 7 OMC CONSTRAINT D
M9073=4,IASW TASK 4 M9079=1 M9080=7 M9076=33 M9067=20191

2003.081.20.14.15.367 2003.081.20.14.08.080 1792 Real Time Anomaly 5 OMC CSSW INT ER
FIX6=0 M9079=2 M9080=5 M9074=4 M9067=5531

- 21:49:36, OMC CSSW issued OEM class 1, ID 7: "Ada exception CONSTRAINT_ERROR raised in DPE SW by OMCAS Task 4 (SEQUENCER)". This OEM was followed by OEM class 2, ID 5: "DPE CSSW internal error – Unexpected Exception".

2003.081.21.49.44.081 2003.081.21.49.36.458 1792 Real Time Exception 7 OMC CONSTRAINT D
M9073=4,IASW TASK 4 M9079=1 M9080=7 M9076=11 M9067=20191

2003.081.21.49.44.133 2003.081.21.49.36.458 1792 Real Time Anomaly 5 OMC CSSW INT ER
FIX6=0 M9079=2 M9080=5 M9074=4 M9067=5531

According to the OMC PI, these constraint errors were caused by an unusual combination of windows, which were commanded for a pointing in the crowded region of Sagittarius. On both occurrences, the constraint errors were correctly blocked by the CSSW and OMCAS by stopping the data readout and waiting until the next transition to STANDBY mode. Each time the operations resumed at the next acquisition.

24-Mar-2003, DOY 083, Revolution 54

- 06:08:49, During the execution of the CCCF (which was enabled to set the IBIS configuration after the missing of some IBIS TCs) and at the time when the PID was set to zero and OTF was masked by the CCCF, OMCAS crashed and OMC mode changed to NONE. At this time the following OEMs were issued by the CSSW:
 - OEM class 1, ID 5: "Exception raised in IASW/CSSW interface by CSS operation START_ANALOG_ACQUISITION. Interface called by IASW task NEW_TC. Exception Identification."
 - OEM calss 1, ID 6: "Exception raised in IASW/CSSW interface by CSS operation START_ANALOG_ACQUISITION. Interface called by IASW task NEW_TC. IASW Culprit Identification."
 - OEM class 1, ID 5: "Exception raised in IASW/CSSW interface by CSS operation READ_LAST_ANALOG_ACQUIRED_VALUE. Interface called by IASW task NEW_TC. Exception Identification."
 - OEM calss 1, ID 6: "Exception raised in IASW/CSSW interface by CSS operation READ_LAST_ANALOG_ACQUIRED_VALUE. Interface called by IASW task NEW_TC. IASW Culprit Identification."
 - OEM class 0, ID 232: "Transition to STANDBY."

2003.083.06.09.03.172 2003.083.06.08.50.695 1792 Real Time Exception 5 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=5 M9065=51,START AN ACQ M9066=1,IASW TASK 1 M9067=5078

2003.083.06.09.03.250 2003.083.06.08.50.695 1792 Real Time Exception 6 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=6 M9065=51,START AN ACQ M9066=1,IASW TASK 1 M9067=14537

2003.083.06.09.03.267 2003.083.06.08.50.695 1792 Real Time Exception 5 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=5 M9065=52,READ LAST AN M9066=1,IASW TASK 1 M9067=5024

2003.083.06.09.03.291 2003.083.06.08.50.695 1792 Real Time Exception 6 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=6 M9065=52,READ LAST AN M9066=1,IASW TASK 1 M9067=14578

2003.083.06.09.03.303 2003.083.06.08.50.890 1792 Real Time Event 232 TO STDBY
FIX2=0 M5010=1,STAND BY M9079=0 M9080=232 M5800=350,OTF M5899=0

Apparently during transition to STANDBY an attempt to read an analogue line had failed and the OMCAS had crashed.

The first action taken was switching OFF the Electronics Unit. Then two attempts were made to restart the OMCAS by direct commanding. The OMCAS did not react to these commands and it was decided to first dump the memory of the DPE and then to do a cold reset of the DPE.

After dumping the DPE memory, the DPE cold reset was commanded and then the command to restart the OMCAS was sent. This time the OMCAS restarted and OMC went to STANDBY mode. Afterwards, the EU was reactivated and all the OMCAS built-in parameters were uploaded. The imaging TCS for pointing 00540019 were uplinked and at 14:11:00 OMC resumed its nominal operations.

Since the occurrence of this anomaly, MOC has been monitoring the behavior and status of OMC. Up to the time of this writing everything has been nominal.

26-Mar-2003, DOY 085, Revolution 54

12:14:10, Because of loss of telemetry, AOCS TCs failed, the timeline was stopped and Slews 00540100 and 00540101 were missed. Manual slew to the attitude of pointing 005400101 was performed and from pointing 00540102 normal operations resumed

8.3.6 IREM Operations

The status of the unit is nominal.

8.4 List of Anomalies since Launch

The following table presents the list of all identified anomalies that have been registered since Launch and that are still pending. Though these Anomaly Reports still have a pending status most of the problems have been analysed and solutions or at least workarounds are already in place.

Note:

An Anomaly Review Board meeting has taken place to close some of the pending AR's. The results of this review are not yet reflected in the attached listing.

ARid	Date Occurrence	Subject	Segment	Element	Status
INT - 002003	2002/10/19	Command failure from TCE2 at Redu1.	Ground	ESA Sta.	Pending
INT - 002010	2002/10/22	Time correlation not applied correctly to time parameters in TM type 8 reports.	Ground	IMCS	Pending
INT - 002024	2002/10/28	OEM: SPI1 Fixed print overflow	Space	SPI	Pending
INT - 002055	2002/11/09	IBIS VETO anomalous count rates.	Space	IBIS	Pending
INT - 002061	2002/11/12	TM Desktop performance collapses when de-selecting supercommutated procesing.	Ground	IMCS	Pending
INT - 002066	2002/11/13	Data routing to ISDS	Ground	I/F to SGS	Pending
INT - 002082	2002/11/13	TM packet production lower than allocation.	Space	SPI	Pending
INT - 002070	2002/11/14	TDRS: data Rerievals cancelled	Ground	IMCS	Pending
INT - 002079	2002/11/14	Timing Problem with Telecommands	Ground	ESA Sta.	Pending
INT - 002083	2002/11/16	SPI DPE Crash	Space	SPI	Pending
INT - 002092	2002/11/19	Load-Dump comparison uses also non-released load commands	Ground	IMCS	Pending
INT - 002094	2002/11/19	TDRS does not work with supercommutated parameters	Ground	IMCS	Pending
INT - 002121	2002/11/26	ISGRI countrates increase up to 8000 counts/sec in one module	Space	IBIS	Pending
INT - 002125	2002/11/29	Data loss between IMCS and ISDC	Ground	I/F to SGS	Pending
INT - 002122	2002/12/02	IBIS VDM4 HV broke down	Space	IBIS	Pending
INT - 002142	2002/12/11	TDRS Time Interval Setting	Ground	IMCS	Pending

INT - 002145	2002/12/15	Commands failing PTV for no reason	Ground	IMCS	Pending
INT - 002174	2002/12/29	Wrong GuideStar selected.	Space	Spacecraft	Pending
INT - 002169	2003/01/03	IREM sw local resets due to SEU (twice)	Space	IREM	Pending
INT - 002191	2003/01/11	FDS not able to update slew parameters	Ground	FDS	Pending
INT - 002194	2003/01/16	Wrong handling of the OTF after Open Loop Slew	Space	Spacecraft	Pending
INT - 002199	2003/01/17	Incorrect handling of CLCW wrapparound in CLTU mode	Ground	ESA Sta.	Pending
INT - 002197	2003/01/20	Lost Telecommanding via REDU	Ground	IMCS	Pending
INT - 002202	2003/01/22	NCTRS log file writing takes all the CPU making the application fail.	Ground	NCTRS	Pending
INT - 002206	2003/01/25	Link lost to ISDC.	Ground	I/F to SGS	Pending
INT - 002207	2003/01/27	TM and TC lost due to COMMS problems	Ground	COMMS	Pending
INT - 002208	2003/01/27	Autostack: Commands that fail release do not apply any further interlock.	Ground	IMCS	Pending
INT - 002212	2003/01/29	TDRS Interval-by-Interval TM Retrieval Problem	Ground	IMCS	Pending
INT - 002213	2003/01/29	SCOS 2000 Interval-by-Interval TM Retrieval Problem	Ground	IMCS	Pending
INT - 002214	2003/01/29	Drop in telemetry from REDU	Ground	ESA Sta.	Pending
INT - 002216	2003/01/31	TPF generation failed	Ground	FDS	Pending
INT - 002217	2003/02/06	TC link drop	Ground	NASA Sta.	Pending
INT - 002219	2003/02/10	IBIS: PICsIT PDMs counters SET to 0 (twice) during nominal operation	Space	IBIS	Pending
INT - 002220	2003/02/10	Wrong Scrolling Display definitions on IMCS following Import	Ground	IMCS	Pending
INT - 002221	2003/02/10	IBIS: SCI submode table loaded only if forcing the submode	Space	IBIS	Pending
INT - 002227	2003/02/16	IDDA/IDDB crash	Ground	IMCS	Pending
INT - 002228	2003/02/21	STR 1750 Processor Fault in the presence of Saturn in the FoV	Space	Spacecraft	Pending
INT - 002233	2003/02/24	Time Calibration not Coherent among Ground Stations	Ground		Pending
INT - 002234	2003/02/24	S2K unable to access READ ONLY disk in IDDA.	Ground	IMCS	Pending
INT - 002235	2003/02/25	Too narrow window for RMU cal in PSF of rev 49	Ground	I/F to SGS	Pending
INT - 002239	2003/02/26	Attitude Determination Failed	Ground	FDS	Pending
INT - 002240	2003/02/27	Update of slew failed on FDS	Ground	FDS	Pending
INT - 002242	2003/03/02	TM &TC Drop on DSS 16	Ground	NASA Sta.	Pending
INT - 002243	2003/03/04	CDS Failed to Lock at Redu - H/O Postponed	Ground	ESA Sta.	Pending
INT - 002244	2003/03/05	Loss of guide star immediately prior to slew	Space	Spacecraft	Pending

INT - 002246	2003/03/05	Loss of Telemetry from DSS16	Ground	NASA Sta.	Pending
INT - 002245	2003/03/06	TDRS: Retrieval of packet 60602 or contained parameters does not work	Ground	IMCS	Pending
INT - 002250	2003/03/09	FD System Crashed	Ground	IMCS	Pending
INT - 002251	2003/03/10	Loss of Guide Star	Space	Spacecraft	Pending
INT - 002252	2003/03/10	CDS out of Lock at Redu - TM&TC Loss	Ground	ESA Sta.	Pending
INT - 002253	2003/03/10	RX1 and RX2 Locked at the same time	Ground	NASA Sta.	Pending
INT - 002255	2003/03/10	Late AOS at DSS-24	Ground	NASA Sta.	Pending
INT - 002256	2003/03/14	Late AOS at DSS-16	Ground	NASA Sta.	Pending
INT - 002257	2003/03/17	Late AOS at DSS-24	Ground	NASA Sta.	Pending
INT - 002258	2003/03/20	IBIS: stop downloading HIST during GCDE	Space	IBIS	Pending
INT - 002259	2003/03/21	TDRS: Retrieval log is Meaningless.	Ground	IMCS	Pending
INT - 002260	2003/03/21	Monitoring task Printout, sample time	Ground	IMCS	Pending
INT - 002262	2003/03/21	TDRS: FEN Retrievals containing status parameters always fail.	Ground	IMCS	Pending
INT - 002263	2003/03/22	Data flow interruptions to ISDC	Ground	I/F to SGS	Pending
INT - 002264	2003/03/23	Loss of bitlock + TLM problems on DSS-16	Ground	NASA Sta.	Pending
INT - 002265	2003/03/24	Loss of TC & TM Link	Ground	ESA Sta.	Pending
INT - 002266	2003/03/24	Drop in link from ISDS to ISDC	Ground	I/F to SGS	Pending
INT - 002267	2003/03/25	Drop in link from ISDS to ISDC	Ground	I/F to SGS	Pending
INT - 002268	2003/03/25	No bit lock via DSS-16	Ground	NASA Sta.	Pending
INT - 002269	2003/03/25	Telemetry lost from DSS-16	Ground	NASA Sta.	Pending
INT - 002270	2003/03/26	Late uplink via DSS-16	Ground	NASA Sta.	Pending
INT - 002271	2003/03/26	Drops in telemetry from DSS-16	Ground	NASA Sta.	Pending
INT - 002272	2003/03/26	TC link via DSS-16 lost	Ground	NASA Sta.	Pending
INT - 002273	2003/03/27	Drop in VC7 via REDU	Ground	ESA Sta.	Pending
INT - 002274	2003/03/28	IFTS MCS instance not working	Ground	IMCS	Pending
INT - 002275	2003/03/28	Constraint Error Exception in the OMCAS on DOY081	Space	OMC	Pending
INT - 002276	2003/03/28	Crash of OMCAS on DOY083	Space	OMC	Pending
INT - 002277	2003/03/28	Telemetry lost from DSS-16. DR N100888	Ground	NASA Sta.	Pending
INT - 002278	2003/03/28	FEC failure in REDU	Ground	ESA Sta.	Pending

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INT - 002279	2003/03/29	Telemetry lost from DSS-16. DR N109197	Ground	NASA Sta.	Pending
INT - 002280	2003/03/30	Telemetry lost from REDU	Ground	ESA Sta.	Pending
INT - 002281	2003/03/31	TC outage via REDU	Ground	ESA Sta.	Pending