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

INTEGRAL
Mission Report

INT-MOC-SYS-RP-1001-TOS-OF

No. 026
Week 12

21.03.03

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 15.03.03 until 21.03.03 (both dates inclusive) and covers the revolutions 51 and 52.

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 Perseus Cluster (RA 03:18:36.40; DEC +41:30:54.0), the Galactic centre and the Galactic plane. The activities included a raster dither, a stare, a 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

The week was rather smooth from the AOCS point of view. There was an OTF jitter occurrence at the end of an Open Loop Slew due to an excessive roll error, which needs to be investigated.

There was, as in the previous week, a sharp increase in the temperature for one hydrazine pipe thermistor (T6055), for a short period of time. This is a known behaviour (see INT-RP-AI-0267, Integral Commissioning: Thermal Subsystem), due to redistribution of hydrazine in the pipes. In this case the temperature reached was 58.75 ºC. Although there is in principle no indication of anomaly, the information has been forwarded to Alenia for confirmation.

The fuel consumption over the last 7 days was 0.16 Kg. The remaining propellant is in the order of 179.0 Kg on the 19th 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. On revolutions 51, 52 and 53 following the agreement of SPI PI, the PST distribution was altered so that SPI could use more of the available SPI PST TM slots allocated. The overall allocation of PST slots to the DPEs was not changed, just the pattern of PST slots.

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 packets for the entire 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 52, 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 ~75000 km.

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

3.2.4 OMC

During the reporting period, OMC operations were interrupted two times due to problems in establishing the TC link after station handover to the Goldstone G/S.

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 %. This concerns the number of executed pointings with respect to the planned pointings and the data received from the stations. However, the provision of real-time data to ISDC was badly affected this week due to the link drop over the week-end.

4.1 Mission Operations Centre

The performance of the MOC was good during the reporting period. The main problem was the interruption of the real-time data link to ISDC for about 1.5 days over the week-end. This was caused by a problem with the data distribution at MOC.

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 at Goldstone.

There was another occasion when link problems with Goldstone caused missed pointings:

- On day 073 from 12:26 to 13:37 the TC link to DSS-16 was delayed after handover, the impact of this was two missed slews.
- On day 076 from 11:55 to 12:43 the TC link to DSS-24 was delayed after handover, the impact of this was two missed slews

In addition there were a couple of losses of TM frames, e.g. on day 078. They had no impacts apart from the missing TM.

An ESOC / JPL interface meeting has been held to discuss the perfomance and problems related to the Goldstone station. The main problem areas have been identified and some recovery actions have been triggered.

4.3 Science Ground Segment

4.3.1 ISOC

No ISOC Input has been provided

4.3.2 ISDC

On day 074 (15th March 2003), the link to ISDC dropped, and was not recovered till Monday morning (17th March 2003). The impact of this was that ISDC received no data in this time. The missing data will be provided on a CD in due course.

The reason for the long outage was that no S/W Support is available on call outside working hours. The problem was not correctly diagnosed during the week-end and the attempted recovery operations did not have the desired effect.

5 Special Events

There was a scheduled power outage at the MOC on day 077 (18th March 2003). From 03:25 to 12:35 operations were conducted from Redu. The Payload was kept operational and a staring observation has been executed that does not require any command intervention from ground. The relevant science data have been recorded and forwarded to the archive at MOC. The relevant CD ROMs will be produced and shipped to ISDC. Thus the impact on science could be minimised.

6 Anomalies

Some problems related to the ground segment are already described in chapter 4. The main problems were the loss of the data link to ISDC over the week-end and the delayed hand-overs to Goldstone that caused the loss of a couple of pointings.
The satellite performance was good. The main problem is still the frequent loss of the Guide Star for various reasons.

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 - 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

7 Future Milestones

Nothing special to report.

8 Appendix

The appendix includes various detailed information.

8.1 Overview of Revolutions

Revolution 51
Revolution 51 consisted of a GCDE lasting ~24 hours, followed by a GPS for ~18 hours and finally a raster dithering observation of Aql X-1 (RA 19:11:16.00; DEC +00:35:06.0) lasting ~16 hours.
Throughout all observations in this revolution, 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. IBIS commanding from the automatic Timeline was disabled during the INSTRUMENT window of the Timeline and IBIS was configured in Standard mode manually according to PI Change Requests.

Revolution 52
Revolution 52 consisted of a staring observation of the Perseus Cluster (RA 03:18:36.40; DEC +41:30:54.0) lasting 28 hours, followed by a GCDE for the remainder of the observation time (~31 hours).

Throughout both 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.

8.2 Consumables

8.2.1 Detailed Fuel Book-keeping

```
2003-03-12T16:52:58.000Z     179.1554    F   Automatic TM
processing.
2003-03-13T10:48:04.000Z     179.1400    F   Automatic TM
processing.
2003-03-15T00:26:00.000Z     179.1205    F   Automatic TM
processing.
2003-03-16T02:43:23.000Z     179.1006    F   Automatic TM
processing.
2003-03-16T10:52:20.000Z     179.0850    F   Automatic TM
processing.
2003-03-16T18:14:12.000Z     179.0688    F   Automatic TM
processing.
2003-03-16T23:01:49.000Z     179.0431    F   Automatic TM
processing.
2003-03-17T17:07:11.000Z     179.0250    F   Automatic TM
processing.
2003-03-18T00:09:11.000Z     179.0087    F   Automatic TM
processing.
2003-03-19T06:20:50.000Z     179.0014    F   Automatic TM
processing.

This report was generated at  Wed Mar 19 08:00:09 GMT 2003
```

```
Note: An increment of +0.6360kg has been added to the
      fuelbook following the final recalibration of
      the LEOP orbit manoeuvres. Details to be found
      in the ADC volume of the Flight Dynamics LEOP
      report (INT-FDOS-ADC-FDR-0001-TOS-GFO ... in
      preparation)
```

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 14/03/2003-20/03/2003

AOCS operations were executed from the Automatic Timeline.
During this period, 77 Open Loop Slews, 124 Closed Loop Slews and 11 Momentum Bias were executed. 4 slews were missed. This is around 2% of the total.

14/03/03 (Day of Year 073, Revolution 50)

Slews missed due to a ground station problem (Goldstone DSS-16): At the H/O from Redu to Goldstone, the TC link could not be established on time. Due to this the AOCS subsystem commanding was disabled from the timeline. The first attempt to recover the planned attitude manually, failed due to an independent problem in the control system (incorrect PTV failure). Finally the attitude for 00500101 was reached manually and the timeline operations re-enabled at 13:37. The impact of these problems was that pointings 00500099, 00500100 and 00500101 were lost.

15/03/03 (Day of Year 074, Revolution 51)

Nothing to report.

16/03/03 (Day of Year 075, Revolution 51)

OTF Flag jitter due to roll error at end of Open Loop Slew: At the end of the slew 00510048 the error in roll with respect to the SSL assumed position was 2.7 arcminutes. This is even more than the new OTF threshold (2'), and for this reason the OTF was set to low at AOCS level. The sequence of events was:

03:55:40.523 First cycle of SSL enabled after the slew end, OTF set to TRUE (this is always the case, regardless of the error, due to an ACC algorithm problem). The error was 2.7'.
03:55:41.023 On the second cycle, the OTF is properly evaluated taking into account the error. It goes to FALSE.
03:55:46.023 The error is corrected to below 2', the OTF goes to TRUE. After that the error is further corrected and the OTF stays TRUE for the rest of the pointing.

The event was not seen at Broadcast Packet level, and had no impact on the instruments. Looking to the origin of this very high error, it seems that most of it was already there on the previous pointing (2.2'). 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 could be taken by the FDS (to be confirmed by FD). The reason why the error was so big at the first place needs also to be investigated by FD.

Pointing unstable due to double guide star: At the end of the open loop slew 00510070 the ACC picked up as a guide a mag. 8.25 star that had a close neighbour (0.8 arcminutes away) of mag. 9.6. This caused the position of the star to oscillate up to 80 ccd units in between cycles. The problem had no operational impact, but the attitude stability was bad for this pointing.

17/03/03 (Day of Year 076, Revolution 51)

Slew missed due to a ground station (Goldstone DSS-24) - NCTRS problem: At the H/O from Redu to Goldstone, the links from the NCTRS to the station could not be established on time. Due to this the AOCS subsystem commanding was disabled from the timeline. The impact was that the slew 00510097 was missed.

18/03/03 (Day of Year 077, Revolution 52)

Nothing to report.

19/03/03 (Day of Year 078, Revolution 52)

Nothing to report.

20/03/03 (Day of Year 079, Revolution 52)

Temperature of T6055 reached 58.75 degC: At 06:30 the temperature of T6055 started to increase from a value of 40ºC, reaching a maximum of 58.75 ºC at 06:39, and dropping back to 30 ºC at 06:58. For an explanation of this phenomenon, refer to INT-RP-AI-0267, Integral Commissioning: Thermal Subsystem .

8.3.2 SPI Operations

During the reporting period the following main events occurred:

1- The drift of the cold plate temperature has still continued at about 0.03K/day

2- In order to reduce the number of unused SPI TM slots (from 3 to 1), at radiation belt exit of each orbit the PST has been reprogrammed manually, applying a TM slot distribution scheme slightly different than the one used by the automatic timeline.

3- On 18th March at ~04:00Z, the power supply to the Mission Control Room and the PI W/Ss has been removed for planned maintenance (~10hrs). The SPI W/S relaying the TM to Toulouse was shut down and later restarted.

8.3.3 IBIS Operations

During the belt passage the OEM ID 167 Class 2<<IBIS1 PICsIT NOISY SEMIMODULE>> was reported. This was due to the PICsIT detectors being ON without the VETO anticoincidence system, as required by PIs.

On DOY 2003. 073.16.31Z, 075.15.51Z and 77.23.23Z the OEM ID 180 Class 2 <<IBIS1 VETO COUNTER LATERAL EXCEEDS ALERT VALUE>> was reported. The corresponding TM_para G6063 reported a value within limits so the problem was disregarded, according to the recommended procedure for this OEM.

On DOY 2003. 074.01.43Z, 077.01.28Z the OEM ID 169 Class 0 <<HK OUT OF SYNCH>> was reported. This OEM is reported at the start of every ISGRI calibration.

On DOY 2003.074.02.25Z IBIS s/s was disabled for Rev 51, to perform the special configuration as requested by CR PI-OPS-238

On DOY 2003.077.02.18 the ED GESTAN02 the execution of TC G0803 failed, and the following TC due to the Dynamic PTV was not updated correctly. Due to the ESOC power outage, the instrument configuration was first recovered 12 hours later by re-enabling the CCCF.

On DOY 2003.079.10.29Z an anomaly was observed in the Histogram downloading. No histograms were produced since 78.18.55Z. To properly re-configure the instrument, the CCCF was enabled. At 79.11.17Z the unit restarted downloading the Histograms (see AR 2258)

8.3.4 JEM-X Operations

20-Mar-2003, DOY 079, Revolution 52

- 14:35:21, 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 ~75000 km and about 50 minutes before the JEM-X2 SAFE TC in planned in the timeline. JEM-X2 remained in SAFE mode for the rest of revolution 52.
-

8.3.5 OMC Operations

14-Mar-2003, DOY 073, Revolution 50

- 12:26:00, After station handover to Goldstone, the TC link could not be established on time and slews 00500099 to 00500101 were missed. Manual slew was performed to the attitude of pointing 00500101 and OMC resumed its normal operations at pointing 00500102.

17-Mar-2003, DOY 076, Revolution 51

- 11:55:00, Due to late establishment of TC link after station handover to Goldstone, slews 00510096 and 00510097 were missed. Manual slew to the attitude of pointing 00510097 was performed and OMC resumed normal operations after at pointing 00510098.

8.3.6 IREM Operations

The status of the unit is nominal.

8.4 Configuration Control Issues

This chapter provides some information concerning the configuration control of the Operational Ground Segment.

INTEGRAL Baseline 21-03-03

- **SW**

IMCS	8.6
NCTRS	8.1p3
SIM	OD3.9
IFDS	1.3 (SCD)
FOPGEN	1.0
OBSMS	1.0

- **OPS**

FOP	2.0
IODB	3.1_018_13_03_03

- **HW**

Int. OPSLAN+LCTF	1.2 (CIP)

- **COMMS**

Int. COMMS	1.0 (Plan)

- **Facilities**

DCA + PI	2.6 (TN)

- **Stations**

Redu	1.0 (NCD)
NOP	1.0 (NOP)
ESA-DSN	2.2 (ICD)
SLE	1.2 (proxy)
NCTRS	1.2 (serv. ins)

Versioning

In case of approved change:

- **either the version is increased** (recommended by Quality)

e.g. NCD VIL2 1.3

- **or the description of the current version is extended**

e.g. RMCS D2.1p4 (Release note + CCRs)

The contents of each version shall be always properly described and traced.

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Frozen OPSLAN

The OPSLAN frozen by Rosetta CCB includes at least:

- **All COMMS equipment**
  (e.g. switches, cabling, routers)
- **Rosetta frozen hardware on OPSLAN**
  (e.g. ROMCS, RNCTRS, IFSA)
- **All software on Rosetta frozen hardware on OPSLAN**
  (e.g. RMCS, RFDS)

All installation of **any non validated software** into OPSLAN shall be submitted to Rosetta CCB.

Node 801: Status

- **Chassis replaced**
- **Database rebuilt from scratch**
- **Suspected faulty cards repaired in few days**
- **Some internal redundancy is missing**

Now the situation is stable and frozen: no planned maintenance.

- **Rosetta connections backed up through nodes 100 and 400: workaround tested and validated (time to switch: 5 min)**
- **Some spares available, other ready for Dress Rehearsal**
- **Spare chassis ready for Launch**

Node 801: Recovery Plan

During nights and weekends:

- **<u>In case of glitches</u>,**

  Network will call OSC for prime level support: standard maintenance actions.
- **<u>In case of repeated glitches or escalated problem</u>,**

  OSC will call Marko and/or Mike: second level support (it could include rebooting or components replacement).
- **<u>In case of complete failure of the node or escalated problem</u>,**

  Marko and Mike will call Netrix support: it could require the transfer of functionalities to Model 70. This drastic solution is not applicable before 15-1-03, and between Dress Rehearsal and end of LEOP.

8.5 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.

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 - 002018	2002/10/22	Loss of TM and TC with Goldstone.	Ground	NASA Sta.	Pending
INT - 002024	2002/10/28	OEM: SPI1 Fixed print overflow	Space	SPI	Pending
INT - 002048	2002/11/08	TM Data Retrieval Jobs not executed	Ground	IMCS	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 super-commutated processing.	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 Retrievals cancelled	Ground	IMCS	Pending
INT - 002079	2002/11/14	Timing Problem with Tele-commands	Ground	ESA Sta.	Pending
INT - 002083	2002/11/16	SPI DPE Crash	Space	SPI	Pending
INT - 002091	2002/11/18	A-Chain Frozen	Ground	IMCS	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 super-commutated parameters	Ground	IMCS	Pending
INT - 002096	2002/11/19	Retrieval from the stations	Ground	IMCS	Pending
INT - 002097	2002/11/19	Unexpected dithering process when SPI spectra accumulation = 0	Space	SPI	Pending
INT - 002121	2002/11/26	ISGRI count-rates 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 - 002131	2002/12/04	Lost TC capability via Goldstone (Dss-16)	Ground	NASA Sta.	Pending
INT - 002132	2002/12/05	TM/TC loss via REDU	Ground	ESA Sta.	Pending
INT - 002137	2002/12/08	Handover to DSS-16 delayed due to hardware problems	Ground	NASA Sta.	Pending
INT - 002138	2002/12/09	Command failure	Ground	IMCS	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 - 002152	2002/12/18	NCTRS-A required resetting	Ground	NCTRS	Pending
INT - 002157	2002/12/20	Lost VC-7 from NCTRS	Ground	NCTRS	Pending
INT - 002174	2002/12/29	Wrong GuideStar selected.	Space	Spacecraft	Pending
INT - 002183	2003/01/01	Dyn PTV failure	Ground	IMCS	Pending
INT - 002169	2003/01/03	IREM S/W 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 wrap-around in CLTU mode	Ground	ESA Sta.	Pending
INT - 002197	2003/01/20	Lost Tele-commanding via REDU	Ground	IMCS	Pending
INT - 002200	2003/01/20	TM/TC Link lost via REDU	Ground	ESA Sta.	Pending
INT - 002203	2003/01/21	Telemetry Drops from Goldstone	Ground	NASA Sta.	Pending
INT - 002202	2003/01/22	NCTRS log file writing takes all the CPU making the application fail.	Ground	NCTRS	Pending
INT - 002205	2003/01/24	Telemetry Drops from Goldstone	Ground	NASA Sta.	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 - 002209	2003/01/27	Loss of TM/TC via DSS-24	Ground	NASA Sta.	Pending
INT - 002210	2003/01/27	Telemetry loss via DSS-24	Ground	NASA Sta.	Pending
INT - 002211	2003/01/28	Manual Stack crashed on SUN-123	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 - 002215	2003/01/30	Occasional TM drops on DSS-16	Ground	NASA 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 - 002218	2003/02/08	Loss of lock at DSS-16	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 - 002224	2003/02/12	Uplink problems via DSS-16	Ground	NASA Sta.	Pending
INT - 002225	2003/02/13	Drop in TM via REDU	Ground	ESA Sta.	Pending
INT - 002226	2003/02/13	Drop in telemetry from REDU	Ground	ESA Sta.	Pending
INT - 002227	2003/02/16	IDDA/IDDB crash	Ground	IMCS	Pending
INT - 002229	2003/02/18	Autostack hangs when loading timeline	Ground	IMCS	Pending
INT - 002230	2003/02/19	TC link outage via REDU	Ground	ESA Sta.	Pending
INT - 002231	2003/02/19	HFA task crashed	Ground	IMCS	Pending
INT - 002228	2003/02/21	STR 1750 Processor Fault in the presence of Saturn in the FoV	Space	Spacecraft	Pending
INT - 002232	2003/02/23	TC outage via REDU	Ground	ESA Sta.	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 - 002237	2003/02/24	Telemetry loss from DSS-24	Ground	NASA Sta.	Pending
INT - 002235	2003/02/25	Too narrow window for RMU cal in PSF of rev 49	Ground	I/F to SGS	Pending
INT - 002238	2003/02/25	Time Correlator at REDU	Ground	ESA Sta.	Pending
INT - 002239	2003/02/26	Attitude Determination Failed	Ground	FDS	Pending
INT - 002236	2003/02/27	Wrong ERT in the TM frames	Ground	ESA Sta.	Pending
INT - 002240	2003/02/27	Update of slew failed on FDS	Ground	FDS	Pending
INT - 002241	2003/03/01	No possibility to establish TC & TM link during handover to Redu	Ground	IMCS	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	Ground	IMCS	Pending

		work			
INT - 002247	2003/03/06	Reaction Wheel Bias Failed	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 - 002254	2003/03/10	CDS out of lock at REDU	Ground	ESA 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