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

INTEGRAL
Mission Report

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

No. 030
Week 16

22.04.03

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 12.04.03 until 18.04.03 (both dates inclusive) and covers the revolutions 60, 61 & 62.

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 XTE J1550-564 (RA 15:50:58.90; DEC -56:28:35.3), Aql X-1 (RA 19:11:16.00; DEC +00:35:06.0), XT 1741-322 (RA 17:45:1.72; DEC -32:13:37.5), GRS 1915+105 (RA 19:15:11.50; DEC +10:56:44.0), the Galactic centre and the Galactic plane. The activities consisted of 3 raster dithering observations, a hexagonal dithering observation, as well as 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 period, the AOCS operations were executed rather smoothly from the timeline. At the beginning of revolution 60, oscillations in the position of the guide star caused pitch and yaw errors. This star was selected by the ACC after an Open Loop Slew. There was also a release of guide star at the beginning of revolution 61 when the STR SEU threshold was exceeded.

Several slews were missed during revolution 61 due to a ground station problem and unavailability of the scheduled antenna. Another slew was also missed in this revolution when the STR failed to pick the FDS commanded guide star for the slew.

The fuel consumption over the 14-day period between 01/04/2003 to 15/04/2003 was 0.32 Kg. The remaining propellant is in the order of 178.22 Kg on the 15th of April.

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 TM bandwidth assigned to SPI was 74 pkts (5 pkt donated by IBIS from the nominal 69) for the all science windows during 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.
The TM bandwidth assigned to IBIS was 107 (5 pkts were given to SPI from the nominal 112) pkts for the all science windows.

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.

Two PI change requests to reduce the nominal high voltage of JEM-X2 and to change the upper limits for the transmitted raw anode signals were implemented.

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

3.2.4 OMC

During this period several OMC pointings were missed because of a problem on the DSS-16 antenna and loss of one slew due to a problem regarding the selection of guide star for a close loop slew.

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 %. The real-time data return from the stations was well above the 95 % and only 2 % of the planned slews failed the nominal execution.

4.1 Mission Operations Centre

On day 104 at 12:53:10 there was an error message indicating a duplicate block was found at the end of a packet, and that the packet was not stored. This is a known minor problem connected with CD production and is under investigation.

4.2 Ground Stations & Network

During this week, there were a few problems related to the ground stations:

- On day 102 at 17:54, 18:14 and 18:29 individual frames were lost from Redu, due to Reed-Solomon errors.
- On day 105 there was a planned outage from DSS-16 due to an antenna jam. The sequence of events was: at 11:29 the timeline was stopped, at 11:35 the TC was taken down, with the TM finally terminating at 12:18. There was then a complete outage until 12:52 when the TM via DSS-24 returned, followed at 12:55 by the TC, the full timeline was finally recovered at 14:14. The impact was that pointings 58 to 62 of revolution 61 were lost. The attitude for pointing 62 was manually recovered, but no science data was taken.
- Continuing on the same day, TC A33171 failed release due to a short TM drop, this command plus the subsequent mapping had to be manually sent, there was no impact to the science data.
- Again on day 105, but this time from Redu, between 18:55 and 19:14 there were Reed-Solomon alarms, which caused short VC7 data drops.

4.3 Science Ground Segment

4.3.1 ISOC

No ISOC Input has been provided

4.3.2 ISDC

No ISDC Input has been provided

5 Special Events

The work concerning the upgrade of the Operational Ground Segment regarding the envisaged increase of the TM data rate is ongoing. A NDIU has been sent to ALENIA in preparation of the System Validation Test with the EM that is planned early May. The pre-test with the EM has revealed some problems concerning the connectivity. The tests had to be interrupted due to the leave of people at ALENIA and will be resumed end of April. The schedule foresees the utilisation of the higher data rate by the end of may.

6 Anomalies

The problems related to the ground segments are already mentioned in chapter 4.
The work on the interface with Goldstone (VC-7 in Online Complete mode) has been completed, and Goldstone is ready to support this connection mode. Since the MOC cannot currently support different modes in subsequent station passes without an interruption of the operations an upgrade of the I/F to Redu is currently being implemented to support the Online Complete mode also from Redu.

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 - 002293	2003/04/13	Science data CDs produced with no TM inside.	Ground	IMCS	Pending

7 Future Milestones

There is a Packet Terminal Local Time wrap-around expected on 2003/04/29 06:00:11 (DoY 119), to within a second or so.
The IREM patch is now planned for the night between the 01st and 02nd of May.
The SVT for the increased TM data rate is planned for the first week of May.

8 Appendix

The appendix includes various detailed information.

8.1 Overview of Revolutions

Revolution 60
Revolution 60 consisted of a raster dithering observation of XTE J1550-564 (RA 15:50:58.90; DEC -56:28:35.3) lasting about 30 hours followed by a GCDE lasting ~15 hours, after which a raster dithering observation of Aql X-1 (RA 19:11:16.00; DEC +00:35:06.0) was performed for the remaining ~16 hours of observation time.

Throughout these 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 61
Revolution 61 consisted of a raster dithering observation of XT 1741-322 (RA 17:45:1.72; DEC -32:13:37.5) lasting about 30 hours followed by a series of GCDEs for the remaining ~32 hours of observation time.

Throughout these 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 62
The observations in revolution 62 consisted of 3 pointings of a GPS lasting ~12 hours, followed by a series of GCDEs lasting ~11 hours, after which a hexagonal dithering observation centred on GRS 1915+105 (RA 19:15:11.50; DEC +10:56:44.0) was performed for the remaining ~28 hours of observation time.

Throughout these observations, the TM allocation was 64 SPI; 102 IBIS; 0 JEM-X1; 7 JEM-X2; 1 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

```
2003-04-01T22:58:28.000Z     178.5429    F   Automatic TM processing.
2003-04-03T07:08:56.000Z     178.5262    F   Automatic TM processing.
2003-04-03T09:23:28.000Z     178.4932    F   Automatic TM processing.
2003-04-04T22:47:48.000Z     178.4869    F   Automatic TM processing.
2003-04-05T04:29:16.000Z     178.4623    F   Automatic TM processing.
2003-04-05T12:08:21.000Z     178.4403    F   Automatic TM processing.
2003-04-07T14:54:10.000Z     178.3870    F   Automatic TM processing.
2003-04-07T22:39:07.000Z     178.3605    F   Automatic TM processing.
2003-04-08T07:44:44.000Z     178.3371    F   Automatic TM processing.
2003-04-10T15:34:18.000Z     178.3177    F   Automatic TM processing.
2003-04-10T22:23:46.000Z     178.3018    F   Automatic TM processing.
2003-04-12T08:51:50.000Z     178.2845    F   Automatic TM processing.
2003-04-13T15:35:53.000Z     178.2584    F   Automatic TM processing.
2003-04-13T22:08:02.000Z     178.2498    F   Automatic TM processing.
2003-04-15T08:27:01.000Z     178.2199    F   Automatic TM processing.
```

This report was generated Wed Apr 16 08:00:08 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 11/04/2003-18/04/2003

AOCS operations were executed from the Automatic Timeline.
During this period, 69 Open Loop Slews, 216 Closed Loop Slews and 6 Momentum Bias were executed. 6 slews were missed. This is around 2% of the total.

11/04/03 (Day of Year 101, Revolution 60)

Pitch and yaw errors at the end of Open Loop Slew: After the Open Loop Slew 00600001, the ACC picked a guide star, as reported in TM, of magnitude 8.4 and CCD coordinates (-1147, 8362). The position of this guide star oscillated up to (184, -172) CCD units in between the cycles and caused several pitch and/or yaw errors (4 sets of pointing errors in total).

Looking into the attitude log file of this slew, the ACC selected guide star did not match with any stars in the star catalogue. However, two close by stars (9.0 Mi, -1297, 8521) and (8.9 Mi, -953, 8234) did exist in the catalogue. Apparently the barycentre of the images of these two starts was assumed as the guide star by the ACC, which had oscillated several times. The OTF did jitter due to these attitude errors and was seen at the BCP level, but this was not during the instrument operations window.

12/04/03 (Day of Year 102, Revolution 60)

Nothing to report.

13/04/03 (Day of Year 103, Revolution 60-61)

Loss of guide star due to False Events: At 22:12:22 (beginning of revolution 61) and at the end of the Reaction Wheel Bias operations, the guide star was released when the STR SEU Filter threshold was exceeded. The released star had a magnitude of 7.00 and CCD coordinates (21994, 1691). An automatic mapping was commanded by the ACC and another guide star was picked. This happened during the Reaction Wheel Bias window and outside of the instrument activity window. Therefore, it had no impact on observations.

14/04/03 (Day of Year 104, Revolution 61)

Nothing to report.

15/04/03 (Day of Year 105, Revolution 61)

Slews missed due to ground station problem (DSS-16): Due to technical problems, the DSS-16 antenna could not be used at the scheduled station handover time. The only option to cover the Goldstone pass was to use the DSS-24 antenna, which would be only available later. We had no coverage from 12:18 to 12:52 and no commanding capability from 11:35 to 12:55. After DSS-24 AOS, the timeline recovery was started. In total, slews 00610058 to

00610062 were missed. Manual slew to the attitude of pointing 00610062 was done and the parameters of slew 00610063 were updated.

Manual update of slew parameters: The AOCS TC to report the actual offset slew parameters after the start of close loop slew 00610068, failed release because of glitches in TM, which resulted in late verification of the previous AOCS command. The AOCS commanding was disabled and the mapping required to update the next slew was missed. Schedule recovery tool was then used to manually update the parameters for slew 00610069. This had no impact on pointings and instrument operations.

16/04/03 (Day of Year 106, Revolution 61-62)

Slew missed because the commanded star was not picked by the STR: Slew 00610097 failed execution because the STR had not picked the 8.25 M star in the commanded search window. The reason seams to be another dim star of magnitude 9.6 located at a distance of 1.79 arc-minutes from this star. This had caused the failing of the clustering algorithm and rejection of the commanded star. At the time, no star was present in slot number 2. Therefore, the command to start the new guide star failed and the slew was not executed. The FD timeline recovery tool was used to manually perform slew 00610098.

NOTE: When selecting a guide star for a close loop slew, the FDS selects stars that do not have a star brighter than 9.3 M in their vicinity.

17/04/03 (Day of Year 107, Revolution 62)

Nothing to report.

18/04/03 (Day of Year 108, Revolution 62)

Nothing to report.

8.3.2 SPI Operations

SPI Status: Details

On DOY 2003. 108 at 17.16Z the TM paras E0367 showed Warning Low Limit (read value -2.47 V). The parameters has been monitored and after few minutes returned within in limits; no further action was taken.

8.3.3 IBIS Operations

On DOY 2003. 102 at 05.41Z the OEM ID 183 Class 2 <<IBIS1 VETO +5V VECU VOLTAGE OUT OF RANGE>> was reported. The relevant TM_para G6106 showed a value inside limits and the occurrence of the OEM was less than 1 OEM per 30 sec therefore no action has been taken, as suggested by the nominal reaction to this OEM.

On DOY 2003. 103 IBIS and VETO were both switched to Stand-By for about 1 hour before the expected Crit Alt Asc: this was due to Alarms as parameters TM_paras G6062 and G6063 (the VETO counters) >35000 cts/sec reaching the upper limits. As foreseen by the P/L Contingencies doc, the procedures FCP_IBIS1_0313 and 203 were applied. ISDC was informed of the early transition to Stand-By.

The OEM ID 167 Class 2<<IBIS1 PICsIT NOISY SEMIMODULE>> was reported a few times during the belt passage due to the PICsIT detectors being ON without the VETO anticoincidence system, as it was required by PIs.

On DOY 2003. 104 at 06.36Z 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 the occurrence of the OEM was less than 1 OEM per 30 sec therefore no action has been taken, as suggested by the nominal reaction to this OEM.

On DOY 2003. 106 at 08.42Z the OEM ID 183 Class 2 <<IBIS1 VETO +5V VECU VOLTAGE OUT OF RANGE>> was reported. The relevant TM_para G6106 showed a value inside limits and the occurrence of the OEM was less than 1 OEM per 30 sec therefore no action has been taken, as suggested by the nominal reaction to this OEM.

At 23.26Z the TM para G2098 (ISGRI Noisy Pixel overflow) showed OOL. This parameter is related to the quality of the data production and accordingly with the P/L contingencies doc ISDC has been informed.

On DOY 2003. 107 at 00.06Z the TM paras G7028 and 7027 showed OOL. These parameters are related to the quality of the data production and accordingly with the P/L contingencies doc ISDC has been informed.

On DOY 2003. 108 at 02.39Z the OEM ID 183 Class 2 <<IBIS1 VETO +5V VECU VOLTAGE OUT OF RANGE>> was reported. The relevant TM_para G6106 showed a value inside limits and the occurrence of the OEM was less than1 OEM per 30 sec therefore no action has been taken, as suggested by the nominal reaction to this OEM.

The ISDC reported a problem with the downloading of PICsIT Histograms since 10:50Z. The problem is known and it can occur in coincidence with a Ground Station Handover (that was executed at 10.47Z). Corrective action was taken by enabling the CCCF at 15:17Z, which re-set the IBIS configuration and restarted the downloading of the Histograms. By 17:17Z IBIS the downloading was nominal.

8.3.4 JEM-X Operations

The following two JEM-X2 change requests were implemented:
CR PI-OPS-242, "Upper limits for the raw anode signals for events to be transmitted from JEM-X2" and
CR PI-OPS-243, "Decrease nominal high voltage for JEM-X2"

CR PI-OPS-242 was implemented on 16/04/2003T13:30:00z after JEM-X2 was commanded to SAFE mode at 70000km descending and before the BCP Rad Belts start time. For CR PI-OPS-243, the relevant telecommand parameter default values, PTVs and CEVs were updated in the data-base, which was propagated on the system during the perigee pass of revolution 0061-0062. At the beginning of revolution 0062, JEM-X2 HV was switched on to a "nominal - 3steps" value of 76 decimal and then to a nominal value of 79 decimal by the timeline. 79 (~790 volts) will be the nominal JEM-X2 HV setting from this revolution.

8.3.5 OMC Operations

During this period, 6 out of the 265 originally planned OMC pointings were missed.

15-Apr-2003, DOY 105, Revolution 61

- **Missing of pointings 00610058 to 00610062**
  Due to a technical problem on the DSS-16 antenna and later availability of the DSS-24 antenna, slews 00610058 to 00610062 were missed. After AOS at DSS-24, the schedule recovery tool was used to recover the timeline. Manual slew was performed to the attitude of pointing 00610062 and parameters of slew 00610063 were updated manually.

16-Apr-2003, DOY 106, Revolution 61

- **Slew missed because the commanded star was not picked by the STR**
  Due to a problem with the commanded guide star for close loop slew 00610097, the slew did not execute and pointing 00610097 was missed. Manual slew to the attitude of pointing 00610098 was performed and OMC resumed operations from pointing 00610098.

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.

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 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 - 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 - 002121	2002/11/26	ISGRI count-rates increase up to 8000 counts/sec in one module	Space	IBIS	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 - 002169	2003/01/03	IREM S/W local resets due to SEU (twice)	Space	IREM	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 - 002202	2003/01/22	NCTRS log file writing takes all the CPU making the application fail.	Ground	NCTRS	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 - 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 sub-mode table loaded only if forcing the sub-mode	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 - 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 - 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 - 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 bit-lock + TLM problems on DSS-16	Ground	NASA Sta.	Pending
INT - 002265	2003/03/24	Loss of TC & TM Link	Ground	ESA Sta.	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
INT - 002282	2003/03/31	Bad data being received from DSS-16	Ground	NASA Sta.	Pending
INT - 002283	2003/04/01	ISDS-A and IDDA services stopped	Ground	IMCS	Pending
INT - 002284	2003/04/01	Reed Solomon alarms from REDU	Ground	ESA Sta.	Pending
INT - 002285	2003/04/02	Redu Antenna Uplink switch goes off bus	Ground	ESA Sta.	Pending
INT - 002286	2003/04/02	Reboot of ESOC Firewall	Ground	I/F to SGS	Pending
INT - 002288	2003/04/03	TM/TC lost via REDU	Ground	ESA Sta.	Pending
INT - 002289	2003/04/03	Delayed handover to DSS-16	Ground	NASA Sta.	Pending
INT - 002290	2003/04/03	Bad frames and TLM drop from DSS-16. Possible RFI	Ground	NASA Sta.	Pending
INT - 002291	2003/04/08	Archiving lost on A chain	Ground	IMCS	Pending
INT - 002292	2003/04/09	Telemetry Drops from Goldstone (DR 6102621)	Ground	NASA Sta.	Pending
INT - 002293	2003/04/13	Science data CDs produced with no TM inside.	Ground	IMCS	Pending