

INTEGRAL
Mission Report
INT-MOC-SYS-RP-1001-TOS-OF
No. 022
Week 08
21.02.03
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 08.02.03 until 14.02.03 (both dates inclusive) and covers the revolutions 39, 40 & 41.

2 Summary of Activities

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

The target of the revolutions was the Crab Nebula (RA 05:34:31.90; DEC +22:00:52.0). Observations consisted of both on-axis and off-axis staring observations, as well as on-axis hexagonal and raster dither patterns.

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 main event of this week was the confirmation that the INTEGRAL STR is affected by the "XMM Bright Object" problem. This problem, which is not understood, causes a fault of the 1750 processor, which makes the STR go to Standby Mode, interrupting the nominal STR functions. The problem that occurred on the 08/02/03 (see previous weekly), has been confirmed to be caused by this, by dumping the Fault Type register of the STR.

The problem has re-occurred again during this week, on day 16/02/03. An Anomaly Report has been opened, with ID INT-002228.

The fuel consumption over the last 14 days was 0.15 Kg. The remaining propellant is in the order of 179.06 Kg on the 19th of February.

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.

A few RF link measurements have been performed in order to identify the available link margin. The analysis of the data is ongoing.

3.2 Payload

3.2.1 SPI

The status of the instrument is nominal.

The instrument has terminated the cooling phase after the annealing, and is now working at 85K in photon by photon mode collecting data from the Crab.

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

3.2.2 IBIS

Status Nominal, verification of the IASW patch on-going. CRAB calibration, off-axis.

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

3.2.3 JEM-X

During this period, both JEM-X units were active and operating nominally as driven by the automatic timeline. Due to the cancellation of the last pass of revolution 42 (Goldstone pass), both units were commanded to SAFE mode and remained in SAFE for the non-coverage period, i.e. the remaining of revolution 42.

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 stopped once by ground due to the cancellation of the last pass of revolution 42 (Goldstone pass). OMC was commanded to SAFE mode and remained in SAFE for the non-coverage period, i.e. the remaining of revolution 42.

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 provision of real-time data to ISDC.

The above statement is only applicable if the pass over Goldstone that has been cancelled on 18 February is not considered as planned service time.

4.1 Mission Operations Centre

The performance of the MOC was good in the reporting period though there were a few problems within the MOC:

- On day 47 at 03:55, a LEACAL command failed release, no impact.
- On day 50 at 04:13, an A3085 command failed on completion.

These problems did not affect the execution of the Timeline nor the science related operations.

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 Redu and at Goldstone.

There was one occasion when the TC link via Redu dropped, at 05:10 on Day 050. The link was restored five minutes later. No impact on the Timeline.

The operations via Goldstone were relatively smooth. There was a last minute outage on Day 049 lasting from 14:29 to 01:37 on day 50. Then there were a few other occasions where there were short drops, at 17:47 on Day 51 the TM dropped for a few seconds, and on day 52, at 18:40, 18:44, 19:22 and 20:36 there were short TM 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

No special events this week.

6 Anomalies

The problems related to the ground segments are already mentioned in chapter 4. The main problem is still the frequent data gaps when receiving data from Goldstone. A teleconference has been held with JPL and an upgrade of the system set-up has been agreed that will be tested on 26 February.

A list of the pending anomalies since Launch is presented in the Appendix. There was only one new unresolved anomaly this week:

INT - 002227	2003/02/16	IDDA/IDDB crash	Ground	IMCS	Pending
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7 Future Milestones

The observations of the Crab nebula are ongoing.

A patch of the JEMX-DFEE Version 4.4 is planned for next week.

8 Appendix

The appendix includes various detailed information.

8.1 Overview of Revolutions

Revolution 41

Revolution 41 consisted of 3 off-axis staring observations of the Crab Nebula. The first was at (RA 04:53:24.00; DEC +21:08:47.8) lasting about 20 hours. This was followed by a staring at (RA 05:36:45.20; DEC +12:25:44.7) lasting about 23hrs40mins and then by an 18 hour staring observation at (RA 06:15:58.90; DEC +22:13:38.0).

The TM allocation amongst the instruments was 5 SPI, 169 IBIS, 8 JEM-X1, 8 JEM-X2, 5 OMC throughout the science observations. Operations for SPI were executed manually; these included the initiation of the active cooling phase at the start of this revolution. IBIS EDs were disabled from the Timeline during the instrument window and the configuration was set manually according to PI Change Requests. For all observations, both JEM-X units were in Data Taking (Full Imaging) mode and OMC was in normal science mode.

Revolution 42

Revolution 42 consisted of a series of staring observations around the Crab Nebula. The first was at (RA 06:15:58.90; DEC +22:13:38.0) and lasted ~5 hours. The TM allocation amongst the instruments was 59 SPI, 122 IBIS, 4 JEM-X1, 5 JEM-X2, 5 OMC.

Following this a series of 12 pointings were performed as part of a scan across the Crab. The first pointing of this scan was at (RA 05:35:40.20; DEC +17:07:18.5) and the last pointing was at (RA 05:49:55.40; DEC +18:41:58.3). The first and last pointings of this scan lasted 3 hours while the others each lasted 2 hours. The TM allocation during these observations was 100 S, 72 I, 9 J1, 9 J2, 5 O. During this time, the SPI camera was switched on.

This was followed by a Crab on-axis staring (RA 05:34:31.90; DEC +22:00:52.0) for 17hrs 30mins with TM allocation 100 S, 81 I, 4 J1, 5 J2, 5 O. During this observation, fine-tuning of SPI was performed.

The last observation was a staring at (RA 06:05:59.70; DEC +14:47:05.2) with TM allocation 59 S, 122 I, 4 J1, 5 J2, 5 O. This observation was planned to last 12 hours, however due to the cancellation of the second Goldstone pass of the revolution, a slew to the safe perigee passage attitude of (RA 05:34:31.90; DEC +36:00:52.0) was executed by manual commanding at approximately 2003-02-18T12:30Z and therefore this pointing lasted only 5hrs 30mins.

Throughout this revolution, all operations for SPI were executed manually. IBIS EDs were disabled from the Timeline during the instrument window and the configuration was set manually according to PI Change Requests. Both JEM-X units were in Data Taking (Full Imaging) mode and OMC was in normal science mode for all observations.

Revolution 43

Revolution 43 started with the continuation of the off-axis staring observation of the Crab Nebula which was the last observation of revolution 42 (RA 06:05:59.70; DEC +14:47:05.2). This lasted approx. 11 hours and the TM allocation was 59 SPI, 122 IBIS, 4 JEM-X1, 5 JEM-X2, 5 OMC.

Following this a hexagonal dither pattern centered on the Crab (RA 05:34:31.90; DEC +22:00:52.0) was performed. This lasted 18 hours, after which a Crab on-axis raster dither pattern was executed. This raster dither pattern was repeated until the end of the instrument window (~32 hours). The TM allocation throughout both of these dithering observations was 100 SPI, 81 IBIS, 4 JEM-X1, 5 JEM-X2, 5 OMC.

Nominal science observations of the Crab commenced for SPI (in Photon by Photon mode with spectra enabled) with the on-axis hexagonal dither pattern (2003-02-19T16:06:19Z). Configuration of SPI performed before this was executed manually. IBIS EDs were disabled

from the Timeline during the instrument window and IBIS was manually commanded into Standard mode with the configuration set according to PI Change Requests (depending on TM allocation). Both JEM-X units were in Data Taking (Full Imaging) mode and OMC was in normal science mode for all observations.

8.2 Consumables

8.2.1 Detailed Fuel Book-keeping

2003-02-05T13:25:06.000Z	179.2115	F	Automatic TM processing.
2003-02-07T03:11:58.000Z	179.1888	F	Automatic TM processing.
2003-02-08T13:12:41.000Z	179.1758	F	Automatic TM processing.
2003-02-10T03:01:09.000Z	179.1609	F	Automatic TM processing.
2003-02-11T13:01:45.000Z	179.1423	F	Automatic TM processing.
2003-02-13T02:49:57.000Z	179.1268	F	Automatic TM processing.
2003-02-14T12:51:53.000Z	179.1193	F	Automatic TM processing.
2003-02-16T02:35:33.000Z	179.1069	F	Automatic TM processing.
2003-02-17T12:33:05.000Z	179.0817	F	Automatic TM processing.
2003-02-19T02:20:05.000Z	179.0614	F	Automatic TM processing.

This report was generated at Wed Feb 19 08:00:07 GMT 2003

Note: The 4.24kg pressurant has now been removed from the fuel-book - the above list shows ONLY the remaining propellant

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 14/02/2003-20/02/2003

AOCS operations were executed from the Automatic Timeline.

During this period, 14 Open Loop Slews, 68 Closed Loop Slews and 5 Momentum Bias were executed. One slew was missed, a pointing had the OTF low due to the STR 1750 fault, and another pointing had to be cut by 7 hours due to the cancellation of a Goldstone pass.

14/02/03 (Day of Year 045, Revolution 41)

Nothing to report.

15/02/03 (Day of Year 046, Revolution 41)

Nothing to report.

16/02/03 (Day of Year 047, Revolution 42)

STR 1750 Fault Occurrence: The STR processor fault occurred again in the same FoV as in the previous week, at 21:27:31. Once again the mapping was interrupted, caused the IMU to be powered on, and the ACC to start a new mapping. Once again the new mapping selected a different guide star, and was completed successfully. For the aborted mapping, the relevant data are:

Guide star mag. 5.35 pos. (-23432, -7748). This is close to the border between ESW number's 34 and 35 in the mapping spiral sequence.
Saturn, mag -0.14 pos. (-28921, -10001). This is in ESW 35.

The fault seems to have happened when processing ESW 35. The fault was not reported in TM.

The impact was that the OTF went to low and stayed like this for the remaining of this pointing (00420010).

17/02/03 (Day of Year 048, Revolution 42)

Nothing to report.

18/02/03 (Day of Year 049, Revolution 42)

Goldstone pass cancelled: The Goldstone pass in the afternoon was cancelled. Due to this, the pointing 00420020 had to be interrupted about 7 hours before its end, and the slew to the perigee passage attitude was performed manually.

19/02/03 (Day of Year 050, Revolution 43)

Slew missed due to ground station problem (Redu): At 05:10 the TC link with Redu was lost. Due to this problem the slew 00430010 was missed, and was executed manually. The nominal timeline operations were rejoined for 00430011.

20/02/03 (Day of Year 051, Revolution 43)

Nothing to report.

8.3.2 SPI Operations

During the week, the instrument has been operated manually to perform the following major activities:

NOTE: The cryo-cooler was started the previous week with strokes at 4x45raw (6.72mm), to reach 119K temperature on Sunday 19th February

- at 119K the instrument has been reconfigured for the Germanium detector activation and initial health/performance checks. High voltages have been switched on in steps of 500V up to 4kV, with intermediate photon acquisitions at 2kV, 2.5kV and 3.0kV to check the camera health. The tests showed that the detector#15 energy resolution has recovered within nominal range (it was degraded and operated at 2.5kV since commissioning), so we decided to go to 4kV also for this detector.

- Once the camera was on, the IASW 4.2.0 was further tested, exploiting a few S/C re-pointings driven by EPOS to check spectra management logic. The PST was 100pkts/c during these tests.

- at 90K the compressor strokes were reduced from 4x45raw to 4x40raw to minimize the overshooting of the target temperature

- at 89.3K stroke setting to 2x38,2x37 (i.e. same amplitude as before the annealing operations, used to maintain 90K) followed by 1 day stabilization to check the contamination process post annealing. As the temperature was still decreasing, the conclusion was that the contamination issue has been solved by the annealing cycle. The cryo-cooler assembly overall efficiency has improved significantly.

- Stroke setting to 4x38raw to quickly reach the 85K in time for the Crab observation. With this setting we actually cooled down to 84K and then we changed back to 2x38,2x37 to invert the trend.

-At 84K the GeD HVs were set to 4.5kV to check the performance of the detector at this level. About 3hrs photon acquisition was performed, before pointing to the Crab. These data are being analysed by SPI team.

8.3.3 IBIS Operations

On DOY 2003.046.17.16Z the following VETO real time counters were OOLs HIGH:

TM para G6062-63

due to an earlier entry in Radiation belt, before the Critical Altitude Ascending.

Reported on DOY 2003. 47.07.52Z and 2003. 47.14.45Z, 2003. 48.08.54Z
the OEM ID 180 Class 2 <<IBIS1 VETO COUNTER LATERAL EXCEEDS ALERT VALUE>>.
The relevant TM_para G6063 reported a value inside limits and therefore the problem has been disregarded, as suggested by the nominal reaction to this OEM.

Reported on DOY 2003. 47.08.44Z and 2003. 47.17.11Z
the OEM ID 179 Class 2 <<IBIS1 VETO COUNTER BOTTOM EXCEEDS ALERT VALUE>>.
The relevant TM_para G6062 reported values inside limits and therefore the problem has been disregarded, as suggested by the nominal reaction to this OEM.

On DOY 2003.47.05.36Z has been executed the CR PI-OPS-227 in order to fix the IBIS configuration for the CRAB OFF Axis observation for the beginning of Rev 42 with TM allocation of 120-130.

On DOY 2003.47.10.20Z has been executed the CR PI-OPS-228 in order to fix the IBIS configuration for the CRAB OFF Axis observation in the middle of Rev 42 with TM allocation of 70-90.

On DOY 2003.49.06.59Z has been executed the CR PI-OPS-227 in order to fix the IBIS configuration for the CRAB OFF Axis observation for the end of Rev 42 with TM allocation of 120-130.

On DOY 2003.50.05.00Z has been executed the CR PI-OPS-227 in order to fix the IBIS configuration for the CRAB OFF Axis observation in the beginning of Rev 43 with TM allocation of 120-130..

On DOY 2003.50.16.00Z has been executed the CR PI-OPS-228 in order to fix the IBIS configuration for the CRAB OFF Axis observation in the end of Rev 43 with TM allocation of 70-90.

On DOY 2003.50.03.00Z has been performed the new ISGRI Calibration (GEISCL03) as requested by CR PI-OPS-229, implementing new value for the PCM and LTM for the 8 MDUs.

Reported on DOY 2003. 51.04.53
the OEM ID 184 Class 2 <<IBIS1 VETO +28V VDM/CDM VOLTAGE OUT OF RANGE>>.
The relevant TM_para G6062 reported values inside limits and therefore the problem has been disregarded, as suggested by the nominal reaction to this OEM.

On DOY 2003.49.16.30 and 23.00 has been registered a solar flare by the detectors on board Integral. The event classified as M-class by GOES data had two peaks in correspondence of 16.40Z and around midnight. No impact on the safety of the instruments and no reaction from the radiation monitor has been reported.

8.3.4 JEM-X Operations

18-Feb-2003, DOY 049, Revolution 42

- 13:34:00, Both JEM-X units commanded to SAFE mode and were kept in this mode for the remaining of the revolution. The Goldstone pass starting at 13:50:00 was cancelled due to problems at the station and MOC was requested to put the JEM-X units in SAFE mode for the non-coverage period. Both units restarted nominal operations with the beginning of revolution 43.

8.3.5 OMC Operations

18-Feb-2003, DOY 049, Revolution 42

The Goldstone pass starting at 13:50:00 was cancelled due to problems at the station and MOC was requested to put the OMC in SAFE mode for the non-coverage period. OMC was first commanded to STANDBY mode before the slew to perigee passage attitude and after the slew it was commanded to SAFE mode:

- 12:34:18, OMC commanded to STANDBY mode
- 13:36:00, OMC commanded to SAFE mode and remained in SAFE for the remaining of revolution 42.

19-Feb-2003, DOY 050, Revolution 43

- 04:02:00, OMC was commanded out of SAFE mode after the instrument-critical ascending altitude and before the execution time of OMC EDs in revolution 43.

8.3.6 IREM Operations

The status of the unit is nominal.

On DOY 2003.49.13.20 loaded on board the TT TC for the Ground Link OFF due to a temporary ground station outage that could affect the normal execution of the timeline.

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 - 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 - 002062	2002/11/13	Static PTV wrongly handled by IMCS when commands are copied	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 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 - 002128	2002/12/01	Wheel Speed monitor crashed	Ground	FDS	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 - 002139	2002/12/09	Attitude determination Failed	Ground	FDS	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 - 002196	2003/01/17	Automatic Stack Needed to be restarted.	Ground	IMCS	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 - 002204	2003/01/27	Incorrect eclipse times in BCPKT.	Ground	FDS	Pending
INT - 002207	2003/01/27	TM and TC lost due to COMMS problems	Ground	COMMS	Pending
INT - 002208	2003/01/27	Auto-stack: 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 sub-mode table loaded only if forcing the sub-mode	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