CESR, Toulouse **26 April 2007**

Attendants

Arvind Parmar	ESA, ESTEC	AP
Michael Schmidt	ESA, ESOC	MS
Francois Lebrun	CEA	FL
Giovanni La Rosa	IASF Palermo	GLR
Jean-Pierre Roques	CESR Toulouse	JPR
Lorenzo Natalucci	IASF Roma	LN
Søren Brandt	DNSC	SB
Roland Walter	ISDC	RW

1 Welcome & Agenda AP

The Agenda was accepted without changes.

2 Summary of Crab calibration meeting FL, JPR, SB

A meeting on the Integral calibration status was held the previous day. It was reported that tits to the Crab spectrum using a single power law model give photon indices of 2.04 (JEM-X), and 2.22 (IBIS), to be compared to 2.09 found with e.g., XMM-Newton.

2.1 SPI

The SPI Crab spectrum was obtained for a sum of several Crab observations (revolutions 239+300+365+422+438). A single power-law fit is rejected at high confidence. A double power-law fit gave a good fit, and there is an action on the SPI/Toulouse team to investigate further the uncertainties on the break energy. The SPI spectrum agrees well with the Suzaku XIS+PIN 1–70 keV spectrum and is parallel to the XMM-Newton spectrum of Willingale at al. with a difference in normalization of $\sim$5%. It is slightly above an RXTE-HEXTE spectrum and connects nicely to the Comptel data. In conclusion, the SPI spectral shape is very consistent with what we know from other missions. The absolute normalization is at a level of uncertainty very comparable to what we know from other missions.

2.2 IBIS

There has been significant progress in the understanding of the IBIS calibration. Philippe Laurent is now able to correct for an strong saturation effect at the low end of the rise time distribution. The Crab spectral fits (still for single power law) give lower χ^2 values than previously (before the snake was removed) and flatter power-law indices. The new understanding needs to be confirmed by additional lab measurements and investigations. These are expected to be completed by the end of May, which should allow the results to be included in the next OSA release in the 2007 mid-summer.

2.3 JEM-X

The main issue with JEM-X is the understanding of the electronic efficiency of the instrument. This is particularly tricky as JEM-X is being operated at a lower overall gain due to the need to reduce the anode loss rate. However, recent improvements in understanding are looking promising as the Crab gives a narrow range of indices for a range of gain settings.

3 Dithering patterns, rotation etc AP

Possible randomized dithering patters proposed by the ISOC were presented. It was agreed that the results of altering the rotation angles on the sky of the pointings on each complete set of dither patterns (to be implemented in the next release of the ISOC software) will be evaluated before any further changes are made to the standard dither patterns. Hopefully, there will be sufficient data available at the next GS coordination meeting to address this issue.

4 Integral status, anomaly reports, timing, stability MS

See MS's presentation. There are jumps in the time correlation files that are currently under investigation and may be due to the use of the wrong orbit file.

5 Instrument activation and radiation belt monitoring FL, JPR, SB

JPR presented results obtained from the Sigma instrument on GRANAT from intervals when the perigee height was comparable to that expected for Integral in the next years. These showed that only small increases in count rate after perigee passage that died away within a few hours. These results are encouraging, and if representative, indicate that the scientific performance of the Integral instruments should not be significantly degraded by the decreasing perigee height.

6 Future operations MS

6.1 Use of Bears Lake station

Following discussions at the last GS coordination meeting, MS, AP and Wolfgang Hell (an ESOC ground station expert) recently visited the Bears Lake facility just outside Moscow for an exploratory meeting. The idea is to investigate whether a Russian provided GS could replace, or supplement, the coverage received from Redu. The technical experts discussed many aspects of possible operations and no show stoppers were identified. The technical discussions are expected to be completed in the next 1–2 months. Should these be successful, then AP intends to ask ESA management whether these activities should be further considered before a formal approach is made to ROSKOSMOS.

6.2 Effects of cost savings at MOC

MS described the proposed changes in the MOC operations concept should the cost cutting measures be implemented. These include the use of one SPACON for both XMM-Newton and Integral and the merging of the engineering teams with a resulting loss of expertise and longer recovery times. It is highly likely that contingency recovery will take longer resulting in a lower overall efficiency. It is likely that if there is a problem on one spacecraft and the SPACON is fully occupied, that little or no attention will be paid to the instruments on the other spacecraft. For his reason, the instrument teams should define suitable configurations and procedures for their instruments if they are left unattended for long intervals.

Action 12–1 on PIs	**Due: Next GScoord meeting**
Define safe configurations and procedures for instruments left unattended for long intervals	

7 MEOR status, feedback/questions received AP

The Integral MEOR Review Team meeting is scheduled for May 7–8 at ESTEC. There will be presentations on the spacecraft, instruments and ground segment status and future performance. The goal is to review the status for the interval beyond the design lifetime of the mission and to review and recommend on the proposed change in operational concept described above. The Review Team recommendations will be forwarded to the Review Board for deliberation and action.

8 Telemetry usage and extra packets for JEM-X?

The telemetry usage of SPI, IBIS and JEM-X was reviewed using the MOC supplied figures from the weekly reports. JEM-X currently saturates when a 0.4 Crab source is in the FOV. The background in IBIS and SPI continues to increase due to the decreasing solar activity, but less quickly. At the current rate of increase, SPI will become saturated in around 6 months. Therefore it was decided to leave the current instrument telemetry allocations unchanged and review the situation again at the next GS coordination meeting.

9 Open issues in the GS

`http://www.sciops.esa.int/index.php?project=INTEGRAL&page=Integral_GS_Coordination`

Item	Status
Instrument activation in rad. belts	Closed. To be changed in Rev 555
Installation is IASW v433 for SPI	Closed
Optimum raster strategy for IBIS	Ongoing, see above
Question of exact startracker alignment	Ongoing. ISDC implemented correction for next OSA release
Constraint violation in Rev 461	Closed. New FD software released
JEM-X On-Request HK not always handled at ISDC	Open
Improved calibration scheme for OMC FF	Still open

10 AOB: Next SPI annealing

JPR presented plots showing the change in SPI energy resolution against time following the recent annealing (number 9). The lower operating temperature (80 K, previously 82 k) has resulted in a slightly slower rate of degradation. The next annealing should be scheduled in around June.