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M E E T I N G

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meeting place	IASF Rome		chairman	D. Texier	
minute's date	5th November, 2003		participants	A. Parmar, M. Schmidt, L. Hansson, R. Walter, S. Brand, G. la Rosa, E. de Miguel, P. Ubertini, F. Lebrun, D. Texier	
subject/*objet*	Co-ordination meeting # 8		copy/*copie*	All participants + PIs + M. Kessler + PS + S. Scaglioni	

Description

1. Approval of agenda

The agenda sent before the meeting was approved, with the addition of 6 AOB points.

2. Review of actions

Status of the open actions :

CO/06_12 : *G. la Rosa to confirm that what is done at ISDC for IA-014 is OK*. Still open.

CO/06_14 : *N. Lund to send a technical note describing the details of what JEM-X would like (diagnostic mode data during slews)*. This is not required anymore, action closed.

CO/07_01 : *MOC to provide detailed statistics on what is recovered during the consolidation of a normal revolution, i.e. without big gaps.* Statistics provided, action closed.

CO/07_02 : *JEM-X to indicate when the new JEM-X calibration files will be provided to ISDC.* Calibration files provided, action closed.

CO/07_03 : *JEM-X to provide the details for the observations of the JEM-X2 switch backs.* Details provided in time for the observations, action closed.

CO/07_04 : *D. Texier to contact the IBIS Operations Manager to get a confirmation of the anomaly IA-022*. Anomaly confirmed, action closed.

CO/07_05 : *D. Texier to contact OMC to find a suitable scheme by which all the IGR sources are put in the OMC catalogue.* OMC contacted and discussions between ISDC & OMC on-going, action closed.

3. Status of operations

3.1. MOC/ISDC/ISOC status

MOC

- The data return at MOC has been in the last 2 months of 99.7 %
- The new IMCS system "Evolution" should be available in March 2005. The archive part needs to be re-designed to be compatible with it.
- In mid January 2005 the Redu antenna will be out for maintenance during 3 days. MOC is looking at the possibility to use Goldstone and Villafranca.

ISDC

- After the loss of the SPI detector, the data distribution was delayed by up to 3 months, which have now been recovered. It affected mainly the GCDE observations.
- The problems with the IBIS timing also generated a delay for sending data out of ~ 2 months.
- Another problem is the missing HK data, that happens sometimes (e.g. 1 h missing in rev 102)

ISOC

- The current system is v10.6
- All the procedures are up-to-date.
- The main change ahead is the implementation of the new COP (Centre of Pattern), see details in agenda point 4 & 8.

3.2. Radiation monitoring

Looking at the altitudes for the entry and exit of Integral in the radiation belts, there is no need to change the current setup, i.e. JEM-X is stopped at 70000 km while the other instruments are stopped at 60000 km.

The ISDC monitoring of the belts can be found on the following page :
http://isdc.unige.ch/Operations/Shift/Reports/Radiation_Belts/belts_passage.html

3.3. Mission performance statistics

ISDC statistics : In most of the revolutions there are no problems, but in some of them there is quite some data lost (up to 5 %). The consolidation process done by MOC recovers in ~ 10 % of the revolutions between 1 to 5 % of the data.
It is decided to stop the consolidation in the revolutions where there is no problem (i.e. in ~ 90 % of the revolutions).
This will be reviewed at the next meeting.

3.4. Status of AO3

The proposal reception process was very smooth. It closed on Friday 29/10/04.
The CD containing all the proposals was shipped to the TAC yesterday.
There are 108 proposals with an over-subscription factor of 4.1 (note that AO3 is an 18 months period).

3.5. Planned and considered JEM-X calibration and performance verification activities

The last calibration observations on the Crab were aimed at the characterisation of the vignetting function. More observations will be needed during the future crab calibration exercise (in February next year).

A test to rule out the gas degradation could be performed during an OMC flat field observation.

Action CO/08_01 on JEM-X to specify the details of that observation to ISOC (A. Orr) (Due date 19/11/2004)

4. AO3 Core Program surveys

Galactic Centre : Same as for the AO2 (with the last instrument configurations)

Scutum survey

- The scan of 10x5 points will have to be split into two “standard pointings” of 5x5 points
- Standard COP sequence pattern between each scan
- The COP will also change between each cycle

Galactic latitude scan

- Pattern of 5x31 points, 4 or 5 times
- SPI will be contacted to confirm if the standard COP move is to be applied.

Deep extragalactic survey

- Each scan 60 points
- Repeated 2x4 times using the standard COP pattern sequence for each scan
- Standard settings for the instruments

GPS

- Similar to previous AO except inclination, step size and phase
- 69 scans required
- Instrument settings as for AO2

5. Instruments reaction to the IREM crashes

There have been 15 IREM resets so far. The total amount of time lost for the recovery is :

- 26 h for OMC (0.17 % of the total time of observation)
- 36 h for IBIS (0.25 %)
- 44 h JEM-X (0.3 %)

JEM-X requested to disable the usage of the IREM alerts as there are two autonomous mechanisms :

- a S/W mechanism (already triggered ~ 20 times in the mission) based on the count rates
- a H/W mechanism (tested on ground) which works all the time, even in case of an On-Board S/W crash, tested on ground.

Note that the S/W mechanism works only when JEM-X is in data taking mode (but the HV should be switched-off when this is not the case).
The JEM-X request is accepted.

To disable the usage of the IREM alerts, OMC would need an On-Board S/W patch. OMC is not pushing for it and this is accepted by ESA.

IBIS want to continue to use the IREM counts although they are also investigating the implementation of an internal automatism.

6. Keeping the GSHO window when re-importing a new PSF at ISOC

When a new PSF is imported (after the schedule was already made) the old schedule is removed. So, if MOC wants to keep the same timing for the GSHO, it should fix it in the re-delivered PSF.

7. Entry of GS CR in the ESOC system

The procedure for the submission of GS-CR (Ground Segment Change Request, see TN INT/SAG/00-0042/TN) says that the CR is sent to all the members of the GS-CCB.
The CR is then entered in the MOC database, but the GS-CCB members should not wait to receive the notification that it is entered in the database to start investigating it.
MOC will look at the possibility to have a backup to S. Scaglioni in order to cover absences.

8. Dither pattern strategies

The new COP (Centre of Pattern) is now implemented.
The orientation is set w.r.t. the instrument axes with an inclination of 11.3 deg and the +/-3 deg between each pattern will be removed.

Action CO/08_02 on MOC to check if this will impact the newly calibrated FD modelling for RWB and if this will need to go back to the previous FD S/W.

This will be tested in revolution 257 (20/11/04) and then it will be used if everything is OK.

For the same reason it would be good to have it implemented also for the hexagonal dithers.

9. Activation of the dormant JEM-X unit

Looking at the observations where JEM-X2 was re-activated after being dormant is has been found that :

- 12 h are needed to reach a stable gain
- There is no gain increase during the periods when the High Voltage is off

JEM-X will not ask for more observations with the dormant unit between the Crab calibration observations.

10. ISOC move to ESAC

The H/W and S/W are now installed at ESAC and are being tested.
The next activities will be the interface tests at the end of November between ESAC and all the other centres.
Then in January both systems (i.e. at ESTEC and at ESAC) will be used in parallel, but only the schedules generated at ESTEC will be sent to MOC.
It is expected that in February ESAC will be the operational centre for ISOC.

11. Instruments on-board S/W updates

11.1. Patch of the VETO counters

A patch was uploaded early this year to avoid the wrap around of the VETO counters. However, the counters still wrap around. The problem seems to be in the ground database. IBIS will provide the required update to MOC.

11.2. IBIS 2 S/W image

Tuebingen is finalising the testing of the image for the redundant DPE.
Action CO/08_03 on G. la Rosa to provide the information necessary to have the Commanding and Telemetry database up to date for the redundant unit (Due date 30/11/04).

11.3. Planned and considered JEM-X on-board software updates

There are three updates of the JEM-X On-Board S/W on the way :

a) The class of an event message has been raised from "information" into "anomaly".
This is being tested and will be submitted soon.

b) A bigger DFEE S/W patch has been written to handle the very bright events of the soft gamma ray repeaters and is now ready to be tested.

It should be transparent to ISDC. The impact on the dead time will have to be looked at (after the test).

c) In some cases the internal mechanism is triggered by real sources (e.g. Sco X-1). Depending on the brightness of the source it would be useful to adjust its threshold . This could be possible at ISOC, on an observatio n basis.
JEM-X will make a proposal to be looked at by ISOC and then a GS-CR will be raised if this is feasible.

12. Documentation

12.1. Status of the Instrument User Manuals

JEM-X : The current version of the JEM-X User Manual is v 6.0 issued in March 04. There is no update foreseen in the near future.
OMC : The OMC User Manual is fully in line with the current instrument configuration.
IBIS : The part on the IBIS contexts will to be updated before the end of the year.

12.2. Status of the ICDs

See the minutes of the GS-CCB (Ground Segment Configuration Control Board) # 7 to see the details of the status of the ICDs.

13. Anomaly reports

13.1. MOC anomaly reports

Platform anomalies :

INT-2657 (*OMC Flat Field Calibration incorrectly performed)* : Closed

INT-2653 *(Error sending data to ISDC – DOY 273, 274, 275)* : Still open

INT-2643 (*OMC: TIGGER command rejected)* : Time increased. Closed

INT-2567 *(Missing input lines in the POS supplied)* : ISOC provided inputs. To be closed.

INT-2566 *(Blank spaces after RWB parameters)* : Same as INT-2567, to be closed

INT-2565 *(RWB parameters in POS incorrect)* : Same as INT-2567, to be closed

Description

Payload anomalies :

INT_SC-96 (*IREM Anomaly : Reset of IREM_CSCI S/W # 15)* : Last occurrence of the IREM reset, IA open.

INT_SC-95 (*IBIS-VETO lateral and bottom counters wrap around during high radiation*): The definition of the parameters need to be updated, IA open.

INT_SC-94 (*IREM anomaly : Reset of IREM_CSCI S/W # 14)* : With IA # 96 open, this IA can be closed

INT_SC-93 (*IREM anomaly : Reset of IREM_CSCI S/W # 13)* : Closed (as # 94).

INT_SC-92 (*IBIS-VETO calibration, bottom and lateral counters reported reduced count-rates)* : Under investigation by IBIS, IA open.

INT_SC-91 *(PSD in stand-by at belts exit halts SPI automatic reconfiguration*) : Under investigation by SPI, IA open.

INT_SC-90 (*SPI PSD channel rates malfunction*) : Under investigation by SPI, IA open.

INT_SC-89 *(EPS autonomously changing items ON/OFF status*) : SEU on the platform. IA Closed

INT_SC-87 *(SPI anomaly on GeD # 17*). Investigations on-going, IA open.

INT_SC-86 *(IBIS/VETO S/W anomaly : lateral counter not possible to be defined*) : IA open.

INT_SC-83 *(IREM anomaly : Reset of IREM_CSCI S/W # 12)* : Closed (as # 94)

INT_SC-80 *(IREM anomaly : jump in the MSW of the block counter)* : One-off event, IA closed.

INT_SC-79 *(IBIS IDPE1 failure*) : Not enough information available for Tuebingen to investigate. The dump is now included in the procedure for the future. IA Closed.

INT_SC-78 *(IBIS : VETO VDM 15 high voltage breakdown (#2))* : Cannot be fixed, IA closed.

INT_SC-72 *(SPI : GsD # 2, anomaly on the offset of the pre-amplifier)* : Report issued, no further investigations, IA closed.

INT_SC-71 *(SPI task overrun problems with IASW 4.3.0)* : Under investigation by SPI, IA open.

INT_SC-70 *(SPI wrong on request report generation by IASW 4.20 & 4.30)* : Under investigation by SPI, IA open.

INT_SC-55 (*SPI : spikes in GeD count rates after HV switch on)* : Under investigation by SPI, IA open.

13.2. ISDC anomaly reports

IA-006 *(IBIS UM context description for PICsIT)* : User Manual not yet updated, still open.

IA-008 *(Occasional time shift of 250ms in SPI ACS_RATE data) & IA-009 (ACS_RATE out of order)* : Problem with SPI timing, still open.

IA-016 *(Count rate burst in SPI camera – instrumental effect or real ?)* : Still open, waiting for the results of SPI investigations.

IA-017 *(Time of first event (s1) not increasing)* : Problem with the IBIS timing, still open. The last problem with the IBIS timing was in revolution 207.
Action CO/08_04 on IBIS to look at what can be done to overcome the problem.

IA-019 *(Drop of the PICsIT count rate during one pointing)* : Still open.

IA-021 *(time stase in PICsIT SPTI data)* : Event transmitted twice, probably due to the high count rate. ISDC will try to remove the 2nd event to see if it cures the problem.

IA-022 *(gap in telemetry not signalled by a restart processing)* : Problem confirmed, under investigation at Tuebingen, still open.

14. A.O.B.

14.1. Earth-Moon observation

This observation seems feasible by having the S/C on the IMUs while the Earth would be crossing the FOV.
The next step is to have a more detailed proposal submitted to the PS for assessment.

14.2. Background estimates

JEM-X has had a linear increase of the background of 40 % since January 2004, which is well correlated with the neutron flux. And we know (looking at the data from the last 40 years) that we are approaching the peak of the neutron flux for this solar cycle.

14.3. JEM-X HV setting procedure

With the new procedure (HV setting by ISOC), the default parameter in the MOC database is not the same as the ISOC used value, until the MOC database is updated. This can be a problem if MOC has to re-activate JEM-X (e.g. after a radiation alert).

It was decided to :

a) Have in the MOC database a safe value (the next database update is planned for end of November)
b) Update the FCP for the activation of JEM-X in order to use the High Voltage value from a formal parameter of the telemetry.

Action CO/08_05 on JEM-X to check that the High Voltage value is correct in the telemetry.

14.4. SPI annealing

A test is performed in Toulouse to try to replicate the two detector failures by making many thermal cycles in the view to decide for the next annealing currently foreseen in January (proposed from 21/01/05 to 11/02/05)

In parallel the procedure for the annealing will be updated in order to have it faster.

Action CO/08_06 on MOC (F. Cordero) to contact SPI to get inputs for the required updates of the annealing procedure.

14.5. Revolution summary

All the information contained in the revolution report is useful, so the current format is OK.

14.6. Low threshold for ISGRI

These low thresholds seem to be a bit too high, but some pixels are already at the level of the background, so the tuning will have to be done in an iterative way.

A check is being performed this week in Saclay on the spare unit (results expected next week). The tuning will then be made during an engineering window.

14.7. Next meeting

It is decided to continue the Integral co-ordination meetings with a frequency of 2 per year.

The next meeting is scheduled for Tuesday 03/05/2005 in DSRI (Copenhagen).