MEETING

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meeting place	ESTEC	chairman	D. Texier		
minute's date	21st June, 2005	participants	M. Schmidt, L. Hansson, R. Walter, N. Lund, E. de Miguel, D. Texier		
subject/*objet*	Co-ordination meeting #9	copy/*copie*	All participants + PIs + M. Kessler + PS + T. Lock + A. Mantineo		

Description

1. Approval of agenda

The agenda sent before the meeting was approved, with the addition of 3 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*. It is confirmed that the algorithm implemented by ISDC is OK. Action closed.

CO/08_01 : *JEM-X to specify the details of the observation to be performed in parallel with an OMC flat field*. Observation specified and executed (OCR # 184). Action closed.

CO/08_02 : *MOC to check if the removal of the +/- 3 deg for the COP will impact the newly calibrated FD modelling for RWB and if this will need to go back to the previous FD S/W*. The current FD S/W can be used and there is no need to roll back. Action closed.

CO/08_03 : *G. la Rosa to provide the information necessary to have the Commanding and Telemetry database up to date for the redundant unit*. Still open.

CO/08_04 : *IBIS to look at what can be done to overcome the problem with the IBIS timing*. Technical note issued by IAAT on 16/02/2004. IBIS proposes to flag the science windows affected. Action closed.

CO/08_05 : *JEM-X to check that the High Voltage value is correct in the telemetry*. Investigations showed that the original HV setting is not reflected in the HK after a switch-off due to high rates. Action closed.

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Description

CO/08_06 : MOC *to contact SPI to get inputs for the required updates of the annealing procedure*. The annealing procedure has been reviewed. Action closed.

3. Status of operations

3.1. MOC status

The average fuel consumption is 550 g/month, with a total of 161 kg left.

There have been several problems with the new Mission Control System "Evolution" : I/F to ISDC, auxiliary files (correlation validity flag), short term and consolidated archive. If this is solved with the version to be installed today (14/06/2005) then it will be the operational system from Friday 17/06/2005 onward.

The NCTRS system has been upgraded, as well as the Redu TCPIP.

3.2. ISOC status

From 17/02/2005 (i.e. revolution 287), the planning files generated at ESAC are used in operations. They were generated in parallel with ESTEC since 3rd January 2005.

The web server has changed and the new address is "integral.esac.esa.int".

The helpdesk is still running at ESTEC (jitterbug tool) and its migration is being discussed with ISDC who uses the same system.

The main recent changes are :
- OMC catalogue v4 installed and used since revolution 322.
- Change in the dither pattern, now oriented by 11.3 deg from the instrument axis (since rev 324).
- Miss-alignment correction depending on the prime instrument.
- OMC Flat Field & Dark Current observations can be scheduled without manual intervention.
- "Split observations" is implemented as a special observation copy function.

3.3. ISDC status

There has been a total of 28 gamma ray burst in the Integral FOV in 2.5 years, 5 where inside the JEM-X FOV and one inside the OMC FOV. The all-sky alerts are ~ one per day.
195 IAUC/ATEL have been issued in these 2.5 years of operations.

Archive : all data are available in revision 2 format. The revision 1 will go off-line later this year.
Science products for ISGRI, JEM-X & OMC are available in the archive, and for PICsIT & SPI will be generated with OSA5.

Description

The amount of data downloaded is ~ 1.5 TB/month.
Two more weeks are needed to get the improved ISGRI response and some JEM-X improvements inside OSA5 (still planned in June). It will include the binary for Mac OSX.

3.4. Instruments status

JEM-X :
- There are no problem in operations
- JEM-X1 is active and JEM-X2 is dormant

OMC :
- The baking will not be done
- The testing of S/W patch will be difficult because of problems with the maintenance of some ground segment equipment.

IREM :
- There have been 5 more resets in 2005, for a total until now of 23.

3.5. 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. (Note that 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)

3.6. Mission performance statistics

In revolutions 250 to 307 the time spent in an average revolution is :
- In the radiation belts : 12.8 %
- Science pointings : 73.9 %
- Dither slews : 3.7 %
- Planning overheads : 3.5 %
- Operational overheads : 6.1 %

5 % of the "good time" is lost because of solar flares & ESAM and another 5 % is lost because of failed TC, slews or IREM crashes.

4. IREM crashes

Now only OMC and IBIS are impacted by the IREM resets. Each of these resets needs ~ 2 to 2.5 h to recover.

Description

OMC still prefer to stay with the current situation since IREM provides a useful protection.

5. Special amalgamation

Two proposals on CENX-4 & SN1006 for 1.5 Msec & 2.5 Msec respectively have been amalgamated with a total time of 2.7 Msec (from the 4 Msec before amalgamation).

6. The new approach to the AOCS calibrations

With the possibility to specify in future AOCS calibration observations the star tracker in the center of the Field of View, ISOC will not need anymore to manually edit commands in the future and the proper pointing numbering will allow the processing of the data at ISDC.

7. Slew accuracy

With a recent dog-leg slew found recently to be not necessary, one would question if it could be possible to reduce the number of these dog-leg slews (more than 150 performed to far, for a length of 1 to 1.5 h each of them).
The study performed last year on the slew accuracy recommended not to change the current setup in order to avoid problems (to ensure no constraint hit and the convergence).

8. OCR

There were some problems recently with the OCR system due to the change of web server.
This has now been fixed and the maintenance of the OCR has been handed-over to ISOC.

9. Procedure for the update of the JEM-X HV setting

The procedure for the update of the JEM-X high voltage setting is now clarified : P. Kretchmar is the person to be contacted by JEM-X (cc L. Hansson). He will then raise the necessary change requests (ISOC and/or GS).

JEM-X would like to have the activation done from the timeline (and scheduled by ISOC) performed directly to the nominal level, while the reactivation performed by ESOC still follow the current procedure for a stepping up of the High Voltage.

Action CO/09_01 on JEM-X to provide to ISOC the detailed description of the requested change. (Due date 24/06/2005).

Description

10. CCCF commands for OMC

OMC was set to Standby (on 06/06/2005 at 09:46) because of two concomitant events : the re-enabling of the CCCF at a time when the OTF was low.

Since it is not possible to put in the CCCF the required OMC specific commands (some details are missing at the time of scheduling) it is decided to leave it as is. Note that the consequence was the loss of 30 min of OMC science time and this was the first time it happened since the beginning of the mission.

11. Acceptable reductions in the operational services

Some inputs on the directions where the reductions in the operational services would be less of a problems are difficult to provide at this stage so it is decided that when this exercise will be needed, MOC will provide a list of alternatives with their described consequences.

12. Earth observation

ESOC has collected some information on the Earth observation mentioned in earlier meetings. This will be presented to the ISWT of tomorrow 15/06/2005.

13. Future utilization of Goldstone

The current usage of Goldstone is only one pass at the end of the revolution for 4 to 5 h. This is a stable profile maintained thanks to the Reaction Wheel Bias strategy.

14. Instruments on-board S/W updates

- **JEM-X** : The status of the 3 On-Board S/W updates mentioned during the last coordination meeting is the following :
  - o Class of event messages from "information" to "anomaly" : has been tested, but it will not be submitted. It is solved by changing the operational usage of the messages.
  - o DFEE S/W patch to handle the very bright events : Has been dropped because there are not enough counts.
  - o Internal mechanism triggered depending on the brightness of the sources : The only source affected is SCO X-1. Something can be done by ISOC but needs more details from JEM-X.
  Action CO/09_02 on JEMX-X to provide the parameters to be controlled by ISOC (Due date 24/06/2005)

- OMC : There are no pending On-Board S/W updates

Description

- IBIS : The IBIS PI has asked Tuebingen (responsible for the IBIS IASW) to evaluate possible patches regarding :
    - o The change of the low threshold of ISGRI Rise Time
    - o IREM handling
    - o To replace the Last Pointing/Slew Time in HK1 with HEPI Resync Time
    - o PICsIT tracks filtering (to reduce the negative impact of the tracks on PICsIT histograms)
  But it is unclear at this stage if and when the IBIS IASW will be updated.

15. Documentation

15.1. Status of the Instrument User Manuals

JEM-X : The last update of the JEM-X User Manual (v 6.0 on Feb 2004) is up-to-date, except for some tables of the on-board parameter settings. The images are available so this is considered of a lower priority than the improvements of the JEM-X processing software.

OMC : The issue 3.2 of march 2003 is fully in line with the current operations and there is nothing to be updated.

IBIS : The part on the IBIS contexts will be updated before the end of July 2005.

15.2. Status of the ICDs

The POS-ICP ICD, the DBOB ICD and the Orbit event file ICD have been updated and are in the approval cycle.
The only other pending change is on the ISOC-ISDC ICD due to ISOC SCREW 456 (See the minutes of the GS-CCB # 8 for details).

16. Anomaly reports

16.1. MOC anomaly reports

OMC
- INT-2702 (Command Sequence for Flat Field Calibration) : Was due to a mistake made during a manual edit. Since there will be no more manual editing because of the ISOC S/W update (ISOC Screw 400) the Anomaly Report should be closed.
- INT-2739 (Conditional Configuration Change Handling) : Closed (See agenda point # 10 for details).

SPI
- SC-115 (SPI ACS HV switch off at belts entry not executed): Will be fixed with the next IASW release. AR open until the S/W is uploaded.

Description

- SC-107 (SPI TM packet leakage) : Will be fixed with the next IASW release. AR open until the S/W is uploaded.
- SC-90 (SPI PSD channel rates malfunction) : The failed channels are now disabled, the AR is closed
- SC-87 (SPI anomaly on GeD # 17) : closed (use as is).
- SC-71 (SPI task overrun problems with IASW 4.3.0) : open (low priority problem)
- SC-70 (SPI wrong on request report by IASW) : open (low priority problem)
- SC-55 (SPI spikes in GeD count rates after HV switch on) : close (use as is).

IBIS

- SC-102 (VETO S/W patch) : Procedure updated, no further problems : AR closed.
- SC-92 (VETO calibration counter alarm low) : Investigations ongoing by PI, AR open.
- SC-95 (VETO counters wrap around) : Investigations ongoing by PI, AR open.
- SC-101 (VETO toggling of PMT 28 V) : TM G8015 does not toggle any further but stays OOL. Investigations ongoing by PI, AR open.
- SC-110 (DPE 1 crash) : only one occurrence, AR closed.

JEM-X

- SC-119 (JEM-X 1 DFEE CRC anomaly during activation) : Result from investigations is that there is nothing to do (and the problem cures itself). Since there has been only 2 occurrences since the beginning of the mission (the other was SC-104), the AR is closed.
- SC-116 (JEM-X 2 DFEE CRC anomaly following DFEE switch-on) : The problem is understood and there is nothing to do, AR closed.

16.2. ISDC anomaly reports

IA-006 (IBIS UM context description for PICsIT) : User Manual not yet updated, still open (should be updated before end July 2005).

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-14 (IBIS corrupted packet when IBIS reSync) : See action CO/06_12, closed.

IA-017 (Time of first event (s1) not increasing) : Problem with the IBIS timing confirmed by Tuebingen. Data sent for analysis. The analysis from Tuebingen shows that it is not possible to detect the 2 seconds time shift in a deterministic way. The IBIS team suggests ISDC only to flag the science windows that suffers this problem.

IA-019 (Drop of the PICsIT count rate during one pointing) : Still open. No correction to be done. ISDC will see if they can flag it when it happens.

Description

IA-021 (time stase in PICsIT SPTI data) : The anomaly is due to high count rates and there is no way to fix it. Use as is and close the anomaly report

IA-022 (gap in telemetry not signalled by a restart processing) : Problem confirmed, under investigation at Tuebingen, still open. This is the most serious problem because when the re-sync message is not received the time used at ISDC is wrong.

17. Presentation of the SEIS

The Space Environment Information System has been developed by MOC to monitor the space environment using Integral IREM data as well as data from other Spacecrafts.

It is used at the moment as a warning for high radiation activity.

18. A.O.B.

18.1. Change of the Mission Control System

The usage for operations of the C-chain of MOC's Mission Control System had quite an impact (The change of IP address was overlooked). This was done because of the H/W upgrade required following the Sun Solaris upgrade.

18.2. OMC re-configuration failure

One gamma ray burst occurred in the OMC FOV but the reconfiguration of OMC did not take place. The reconfiguration commands were generated by ISDC and sent to MOC but the confirmation of their reception at MOC was not received (they seem not to have reached the MOC).

Action CO/09_03 on MOC to investigate what happened (Due date 24/06/2005).

It is proposed to issue the MOC re-configuration commands each time there is a gamma ray burst on the Integral FOV (even if it is not on the OMC FOV) so to test it ~ every month.

18.3. Incorrect IBIS LUT2

After the dump of the complete IBIS context performed in revolution 274, it was found that the content of the LUT2 was not as expected.

Description

The problem seems to be due to the fact that the image used for the uplink was not generated from a full dump. The effect should be that less data was filtered out on-board and more data sent to ground.

The correct table will be uploaded today (14/06/2005) and MOC will investigate the origin of the problem (cutting the start of the dumped imaged).

Action CO/09_04 on MOC to investigate the origin of the wrong IBIS LUT2 (due date 30/06/2005)

18.4. Next meeting

The next meeting is scheduled for the 1st half of December.