


<p>SOLAR-B E I S</p>  <p>EUV Imaging Spectrometer</p>	<p>Telecon 1012</p>	<p>+ C1012</p>
---	----------------------------	-----------------------

Meeting 1012 - 9 July, 99

Document ID EIS-meet-sdt-tc1012

File D:\Users\mwt\Projects\Solar-B\EIS\Meetings\SDT\tc1012.doc

Authors Matthew Whyndham, MSSSL

Date 9 July, 1999

These are the minutes of the Teleconference number 12 (**TC1012**).

Held between MSSSL and NRL, Friday, July 9, 1999, 4 pm BST.

GAD, JTM, CMB, CK

MWT, CJM, LKHM, AJM

Minutes prepared by MWT (12 July, 1999).

Reminder - documents referred to as EIS-xxx-xxx-xxx are available in the documents archive at the project website see <http://www.msssl.ucl.ac.uk/solar-b/docs/doclist.html> .


SYSTEM

MWT reported the status of the problem of the instrument mounting points. Efforts have been made to clarify the nature of this problem. It was now understood that the spacecraft designers required no structure to protrude beyond the limits of the spacecraft bus in the Z-direction. This means that the mounting points of EIS must be moved to Z-140mm with respect to the positions shown on the drawings presented at the last consortium meeting.

The BU design philosophy will be as follows:

The telescope tube will be placed as near as possible to the limit, with appropriate allowance for MLI and other accessories. This will ensure minimum change to the design concept. It is hope that the single-box central section can be retained.

Following the redesign, an FE analysis of the structure will be performed. If a Launch Lock device is necessary, this will hold the telescope tube by means of a protruding lug incorporated near the primary mirror interface, or at another suitable part of the tube - for example at the nearest section

SOLAR-B E I S 	Telecon 1012
--	--------------

joint. The Launch Lock will be place to one side ($\pm X$) of the telescope tube. It was thought (HH TO CONFIRM) that there was freedom to place a lock mechanism at any place on the +Y face of the bus structure.

MWT also reported that he and HH were now in more frequent contact by phone and this was resulting in better understanding of interface issues. Both should continue this communication effort, and ensure that spacecraft/instrument interface information was passed between them with both sides understanding the timescales for the need of information and the effort involved in providing it.

There was concern in some cases that over-detailed information about instrument properties was being requested, and that the time taken to provide estimates would be better spent on the engineering of the components, after which more accurate interface information could be provided . One such case was the disturbance torque due to the mechanisms.

MWT also reported that Thermal Design and Thermal Math Model documents had been received from Japan and were being distributed.

A document detailing the Electrical Design Standards from Solar-B subsystems was being translated into English.

GAD reported that interviews for Programme Manager for EIS at NRL had been held, and that an offer would be made to one of the candidates very soon, with the expectation of their starting at NRL in 4-6 weeks.


SUBSYSTEM DEVELOPMENT

MWT referred to the MSSL SDT meeting held on 8 July 1999, see EIS-meet-sdt-minutes10

It was noted that the compression group had begun to make useful progress. Some synthetic data sets were now available and it was hoped to run them through some compressions schemes, including HCOMPRESS, and to measure the effects on spectral performance. LH and Dave Pike at RAL are coordinating this effort.

Camera Issues

It was felt by the NRL team that the predicted performance of the 42 series CCDX, particularly the charge transfer inefficiency (CTI) data shown in Birmingham could be problematic. CJM said that the models used in that analysis were simplistic and represented the worst possible case. This was because the CTI calculation considered the trapping rate of electrons uniformly distributed throughout the pixel, whereas in the real device the shape of the fields would tend to confine the charge in specific regions and hence the effective trap density - and thereby the CTI - would be lower. EEV were aware of the need for the device to operate at small signal levels. It was hoped

SOLAR-B E I S 	Telecon 1012
--	--------------

that an EEV engineer would be able to visit MSSL during the July Engineering Meeting (EM9907). Mitigation approaches did exist to the CTI problem, including: the insertion of a narrow channel in the column; or the use of a flat-field lamp (fat-zero). It was felt that more representative modelling (3D) at MSSL would be time-consuming and that the priority should be to perform tests on representative devices (such as the SXI devices).

ACTION: CJM investigate SXI data sets for relevance.

MWL requested that a short description of the alignment parameters that indicate that a 1K high CCD be used be sent to MSSL, preferably by the end of Next Monday! This would help him explain the details of the CCD procurement to PPARC.

ACTION: CK or CMB send short description of alignment problem to MWT.

The FPA design was now being reworked to incorporate Invar supports. This will incorporate the angle and position of the focal plane, which will emerge from Roger Thomas's optimisation of the 4200 l/mm.

ACTION: CMB to advise WTO at MSSL of the detector focal plane geometry when it is known.

The Radiator study had commenced at MSSL.

A representative geometry had been modelled, consist of an Aluminium radiator panel pointing to -Z, in the vicinity of panels representing the Solar-B bus. Structure and the side of the EIS telescope tube - this had been modelled in ESARAD. In a nominal 600km orbit (Note that the Thermal Design Document from MELCO shows 600^{+150}_{-0} km) the radiator temperature had been obtained. The results showed a cold extreme of -80 and hot extreme of -12 degrees C. Evidently, the radiator size, angle and shielding need to be developed to try and bring the average temperature down.

ICU

AJM said that a block diagram of the ICU would soon be released. The baseline processor is now the ADSP61020 with the Virtuoso RTOS.

Optical Mechanisms

Development of the mechanisms was progressing well. ASTRO (manufacturer) have been contacted to discuss the requirements. Interestingly, ASTRO had reported the existence of an IC from Analog Devices having a "resolver-to-digital" function. It was also claimed that there was a rad-hard version.

SOLAR-B E I S ☀	Telecon 1012
---------------------------	--------------

ACTION: CK to forward part number details to AJM, and AJM to investigate.

There was a discussion about allocation of responsibilities for the shutter, clamshell and certain mechanism drivers among NRL, MSSSL and BU.

MWT will discuss this with JLC next week.

Engineering Meeting (EM9907)

Organisation being handled by Rosalind at MSSSL. Possible need to move meeting back one day to suit booking situation at Hurtwood. CMB, CK, Bob Moye, possibly Roger Thomas, possibly "EE" from NRL. At least SM from BU, HH from NAO, others unknown.

Documents

MWT stressed the need for the team to obtain from the webiste and read the documents that were announced. He welcomed constructive remarks from any quarter regarding their content. It was observed that the document contents page contained many outdated or irrelevant items. There would be an opportunity for major rationalisation after EM9907. Removal from the list of obvious weeds could occur sooner.

ACTION: MWT Weeding.

AOB

CK had received a pack of handouts/overheads from a recent SOT meeting. He is sending 1 copy to BU and 1 to MSSSL. MSSSL to distribute to consortium.

Next Meeting

NRL to call MSSSL +44 1483 274111.

At 4 pm BST.