

Solar B - EIS

MULLARD SPACE SCIENCE LABORATORY
UNIVERSITY COLLEGE LONDON

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ENGINEERING MEETING AT MSSL – H HARA / T WATANABE

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Those Present were:

NAOJ: Hiro Hara; Tetsuya Watanabe

MSSL: AJM, RAC, KFJ, MCRW, CJM, APD

Introduction

Hiro and Tetsuya were warmly welcomed by the MSSL team. The opportunity was being taken of a day long engineering meeting prior to the EIS science meeting that was being held at MSSL on 24/26 May.

Review of ICD

Birmingham have now set up an FTP site for the retrieval of large mechanical drawing files.

Par 4.3.2 Information required on how co-planar the 3 attachment surfaces are.

Par 4.3.4 Confirmation was sought by the J-side that the alignment cube on the template was OK for NRL.

Par 4.5.1 The area for EIS that was quoted was not understood and clarification was requested.

Par 4.5.2 Hiro requested information on the heat distribution across EIS.

Par 4.5.5 This paragraph needs to be expanded to include optics and sub systems.

Par 4.5.6 The positions for the temperature sensors are still being evaluated. Final positions will be published, once they are agreed.

Par 4.5.10 Survival heaters need to be added to the ICD, with reference to peak and nominal values. Confirmation is needed for the values of operational heater power.

Par 5.3 The dissipation per unit base area exceeds the ISAS design standard of $0.06\text{W}/\text{cm}^2$. Hiro will report back to MSSL if this is a problem.

Par 8.1 The electrical block diagram will be up-issued for the next release of the ICD.

After a discussion on break-out boxes, Alec agreed to define some questions for Melco on this topic. The maximum length of the flight cable from ICU to MDP is 6.5m and the ICU to EIS is still 7m.

The confusion over leg coordinates has now been sorted out with Saad.

Other items to be included in the ICD

Details of the magnetic components (e.g. motors).

Identify any use of high voltage.

State the switching frequency of the DC/DC converters.

Check on the radiation hardness of the piezo driver (action from the NASA PDR?).

Interface needed for vacuum and nitrogen purge requirements.

Japan will provide both the operational and survival heater temperature sensors. Information on these sensors was handed to Alec.

The Japanese Electrical Design Standard document will be updated in a week or two.

The EIS Cleanliness Control Document should be published by RAL in time for the PDR. It will not form part of the ICD document.

Hiro requested a document from MSSL to explain the need and operation of the Keep Alive Line.

Details of the Bootstrap operation will be provided once its functionality has been clearly defined.

Khalid presented the proposed EIS operating modes. Various minor modifications were discussed and this information, together with the expected power usage for each mode, will be published as a document within 2 weeks.

A discussion was held on heater power to the CCDs at launch. Presently no power is available until ~150 minutes after launch. Discussions held in December 1999 identified possible battery power being available for the CCDs at launch to ensure that the CCDs do not become cold traps for contaminants. The other instruments have agreed to accept no heat for their CCDs in this period and to go into bake-out mode as soon as power is available.

Clarification is required for the CCD survival heater operation during the CCDs bake-out sequence.

Re-visit survival temperatures in BU/SLB-EIS/TN002.02 page 13.

It is proposed that we build spacecraft interface harnesses without coils and test their performance. No capacitors should be fitted at the receiver ends .

For each power cable, specify the maximum current and acceptable voltage drop.

EIS coordinates need to be related to those of the spacecraft. This would probably best be achieved on the EIS GA.

Melco have requested an updated physical block diagram to be added to the ICD.

Alec agreed to prepare a note on the Low Voltage Differential Signaling (LVDS) parameters.

Differences between PM and FM

MSSL will prepare a document outlining the functionality of the PM (hardware and software) and a proposed test outline. Differences between the PM and FM need to be highlighted.

Command List/ Telemetry

Khalid will provide a command list by the June meeting.

Khalid will update the telemetry document already sent to J-side by October 2000. It will include the latest TM, TC and status lists.

A first draft of camera commands and telemetry was given to Hiro.

Camera

Questions were asked by Hiro about the proposed EIS achieved temperatures with the new radiator position. Predictions from FPP, from what was thought to be a similar radiator position, gave a predicted temperature of -35C

Temperatures for the EIS CCDs were defined as:

Operational	-55C
Bake out	+30C
Survival	to be investigated

MSSL to clarify tests for temperature cycling CCDs.

MSSL to investigate ADC offset - how much will it drift over life?

AOB

None

Action Items

See MSSL/SLB-EIS/AD002.05