SOLAR-B EIS EUV Imaging Spectrometer	SDT Minutes 9	Minutes 9

Meeting 9

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LKHM, MSSL
RAG, MSSL

Minutes prepared by MWT.

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 .

Agenda

Followed the SDT General Agenda – EIS-meet-sdt-genda .

Situation report

MWT reviewed the week's activities. Apart from the development of the subsystems, which will be covered later in this report, the most significant development was a request from the systems side to re-configure the structure with respect to its mounting points.

Systems engineering

We discussed the Interface management both within and it outside of the EIS, as embodied in the ECIM series of documents (some examples having been prepared by George Simnett) and the Master Interface list (EIS-sys-des-mintlist). It was felt that it was better to have subsystem acronyms in use for the elements of the master interface list rather than a numerical scheme as at present. (**Action MWT will propose a new scheme together with a draft configuration plan for the project**)

It was felt to be important that MWT and HH establish good communications – primarily to discuss interface issues in some depth before raising them with the team. (**Action MWT/HH coordinate more**).

Subsystem reports

achieavable CCD temperature. It should be completed by the time of the next consortium engineering meeting (end July 99). Requirements on the thermal design of the EIS-ROE and EIS-MHC will also flow from this study.

Optical and mechanism progress will be reported in today's NRL teleconference.

There is an urgent need to get more details of the TRACE shutter design for implementation at MSSL. (**Action: MWT**)

Camera. The nomenclature of the camera has been revised. It is now

Camera = Focal Plane Assembly + Readout Electronics

CAM = FPA + ROE

Both FPA and ROE fit inside the central box in the structure (STR).

CJM reported progress in the CCD development. Discussions with EEV had now included the option of a 1k (42-20) CCD. The affordability of this will depend on the cosmetic grade. There was a discussion of this. Column defects were felt to be the least acceptable. Chris will bring images taken in the presence of such defects to the next meeting. (**Action: CJM**). Chris will talk to XMM-RGS personnel about the cosmetic requirements of their CCDs. Need to present the arguments for having a 1K CCD based on the post-launch alignment budget. Matt will ask NRL to put something quantitative down. (**Action MWT**). There may be other solutions to this problem.

DGS warned of the risk of destroying devices if the right precautions weren't follwed. XXM-OM programme had used up "quite a few". The dangers could come from static discharge or incorrect driver circuit design.

The ROE Breadboard programme was discussed. An option was to reproduce the Integral ROE (with non-flight parts). Another option was to wait for the Integral PFM to become available. It was felt that it was better to build one (first option) even though the designer (PDT) might not be available for testing. Chris/Duncan/Alec should learn quite a bit from the experience. (**Action: MWT to discover more about the Integral schedule at MSSL**).

The MHC will be part of the instrument thermal control system. A small microcontroller or other dedicated temperature control circuit could be incorporated, or the control function could be within ICU – this has not yet been decided.

If the MHC will be made outside MSSL then it will need to be specified quickly. (**Action MWT/JLC to find out if this is the case**).

Instrument Control Unit ICU.

Alec showed a few amendements to the Electrical Block Diagram.

Duncan and Alec had been working on the architecture of a system based around the ADSP processors. They had found that at least two commercial systems were available of a very similar nature. This is both encouraging (some others had been along this route) and a possible source of a ready-made ICU or ICU processor subsystem.

A Virtuoso RTOS (real-time operating system) and target board – with SHARC ADSP21062 processor had been installed in a PC. This is an evaluation copy and will have to be returned in 2-3 weeks. It has been supplied with a basic compiler/linker. It may be possible to run tests of HCOMPRESS code. There may be a problem in that no-one knows quite how to use it (Virtuoso) and the learning curve might be steep and bumpy. It's possible that the sales reps/engineers might be helpful. (**Action RAG to find someone to have a go if possible**.)

The concept of a Compression Working Group was discussed. LKHM will soon be initiating this group. **Action: Louise**. It will

1. Develop better statements of EIS data output type and rate, based on reasonable assumptions about the EIS operating modes. A note by Ken Dere is available for discussion: Data Throughput Notes EIS-ops-desnote-datathru.

2. Determine the tradeoffs between compression rate (CR) and data quality. The latter will be measured by performing spectral fits on decompressed data.

3. List candidate compression schemes. In each case, what is the CR/quality trade? Proccessor speed requirement? Memory requirement? ADSP 21020 or 21060 systems may be assumed. It shouldn't

Review of existing actions

Actions generated at consortium-level meetings are numbered. Check EIS-man-actions for details.

NB "-actions3" shows actions up to and including the March kick-off meeting. "-actions4" shows more recent actions. The earlier ones are necessarily appropriate any more. MWT intends, when time permits, to make a short statement about each action, even the old ones. The recent ones (A.67+) are being actively tracked.

Actions arising at this meeting

These will be reported in the next minutes in this series.

MWT	propose interface document scheme with memorable nomenclature
MWT	draft configuration plan. Could take some time.
MWT, HH	Greater coordination
MWT	update system hierarchy etc with latest component names.
SMM	consider mounting points (start 8 July)
DPT	radiator study (A-87)
MWT	get details of TRACE shutter design (A-80)
CJM	demonstrate images w/ defects
MWT	ask NRL for quantitative statement of post-launch misalignment risk.
MWT	Integral schedule implications.
MWT/JLC	will the MHC be contracted out?
RAG	try Hcompress with DSP+virtuoso

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Thursday, 8th July, 99. 10 am MSSL library.