CH/Doc/92/08

Minutes

MEGHA Project Meeting

Meeting held on: 5 August 1992

Meeting held at: Daresbury

Minutes

This is a text copy of the minutes distributed by Stuart Metcalf. The original minutes have one figure also: the layout for the MEGHA gas control system.

SCIENCE AND ENGINEERING RESEARCH COUNCIL

DARESBURY LABORATORY

M.E.G.H.A. PROJECT MEETING

Notes on the meeting to discuss the Multi Element Gas Hybrid Array project, held at Daresbury Laboratory on 5th August 1992.

Present:-

Dr. J. Lilley (Chair)	cc.	Dr. W. Catford (Surrey)
Mr. J. Kay		Dr. D. Watson (York)
Mr. S. Metcalfe (Secretary)		Dr. N. Clarke (Birmingham)
Mr. R. Cunningham		Mr. E.C.G. Owen
Mr. S.V. Davies		Dr. V. Pucknell
Dr. W. Rae (Oxford)		Mr. R. Hunt (Oxford)
Mr. S. Lawson (York)		Dr. B. Fulton (Birmingham)
Mr. R. Hyde (York)		

1.0 Minutes of previous meeting.
These where agreed.

2.0 Detectors and telescope modules.
SM described the progress that had been made on the design of the modules since the last meeting. Unfortunately, two D.L. staff have been on sick leave so progress has been slow.

2.1 Module Wiring - still to be agreed. ACTION: RC/BF/SJM/NC

An electrical focal point is to be nominated and a whole system schematic produced. ACTION: BF/VP

2.2 Preamps.

A sample preamp has been supplied; the production version will be shielded. Currently an edge connector is used, so it is anticipated that we will attach the 45 preamps in groups of 5 (one for each silicone detector) on the motherboard using edge connectors. Each preamp has the following electrical connections:-

1) common test.
2) common power
3) individual voltage in
4) individual voltage out

The motherboard is to be shielded with a can attached to the module base plate. All cables leaving the motherboard are to be screened coaxial with SMC connectors. The module vessel will shield the cables inside but some members expressed concern that crosstalk might be a problem, especially between detectors.

2.3 Detector mounting.

Detail drawings of the prototype will be completed week ending 14/8/92. These will be sent to York for manufacture but a 3 week workshop shutdown may cause production problems. York to advise D.L. if significant delays are anticipated. ACTION: SJM/JK/YORK WORKSHOPS

2.3.1 Scintillator.

The proposed scintillator clamp was discussed and agreed. If possible it will combine it's function with the detector mounting PCB, i.e. the PCB will be used to clamp the scintillators, although reservations where expressed about applying bending loads to a PCB. Perhaps use a thicker layer of copper.

ACTION: SJM

2.3.2 Silicone.

Hamamatsu Ltd have confirmed that they can manufacture a silicone detector to the tolerances specified on drg. no. 32/8031

Other manufacturers are to be approached. ACTION: BF

The electrical connections from the detector to the PCB where discussed. SVD suggested the possible use of spring loaded test pins.

ACTION: SJM

2.3.3 Rear electrode.
The proposed method of mounting the rear electrode (and anode) was discussed. A solution will be shown on the next revision of the assembly drawing (drg. no. NSE/SC/138) ACTION: SJM

2.3.4 Gas Chamber.
No information yet on changes to depth of chamber. Hopefully it will not need to change. ACTION: NC/RC/SJM

The pressure in the chamber is expected to be 50 to 60 torr.

3.0 Chamber Structure.
WR will be visiting Canberra in September and will bring back details and photographs of their chamber.

WR explained that it was now Dr. Fulton's intention that a fifth module is added to the array, to be positioned in the centre of the cross, with a Faraday cup installed to prevent the beam from hitting the module.

The total number of modules required for phase 1 is now 6, (5 plus 1 spare).

4.0 Gas Handling System.
RC sent out notes and diagrams of proposed system for comments. The cost will be in excess of #20K. Dr. Fulton wishes to spend this money ASAP.

RC will provide a list of components when the system has been agreed.

An engineering schematic diagram, based on RC's drawings, will be sufficient for manufacture.

York will build, commission and test the system.

4.1 Gas Handling Controls
A meeting of the control design sub group is required ASAP.
ACTION: RC/SVD/SL/RH

SVD submitted a schematic diagram of the proposed gas control system for inclusion with the minutes.

5.0 Data Acquisition.
Nothing to report at this meeting.

6.0 Date of next meeting.
Not yet agreed.

S.J. Metcalfe