

SCIENCE AND ENGINEERING RESEARCH COUNCIL

RUTHERFORD APPLETON LABORATORY
COMPUTING DIVISION

D I S T R I B U T E D C O M P U T I N G N O T E 5 7 9

issued by
Miss G P Jones

PANEL MEETINGS

Notes on a Panel Meeting held on 20 January 1982
at Swindon Office

19 February 1982

DISTRIBUTION:

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DCS Meetings/Notes file

PRESENT:

Prof R Needham (Chairman)
Prof R L Grimsdale
B Brinkman
K Dixon
E B Holloway
E C P Portman
J P Monniot (Secretary)
T Hinde
F Chambers (Industrial Co-ordinator)
Dr D A Duce (Academic Co-ordinator)
Miss G P Jones (Technical Secretary)

1. ATTENDANCE

The Chairman thanked the Panel for arriving under the present circumstances. Apologies were received from Mr Newey, Mr Milner and Dr Wand.

2. MINUTES

Dr Duce noted that in Minute 7.2 of the previous meetings LSI-11's should read Cambridge Ring interfaces.

3. MATTERS ARISING

The Chairman commented on the report made by the Fellowship of Engineering (FoE). In view of its strong criticism of the DCS programme he thought it the Panel's duty to comment. It was agreed to send a copy of the report to all Panel members with comments from the Chairman and the Academic Co-ordinator.

The following grant applications were either deferred or required action from the last meeting..

Darlington - GR/B/97725

This application is for the development of a General Purpose Applicative Language Machine and Applicative Language Programming Environment. At the last meeting the panel were concerned over the proposals for custom chip manufacture and expressed reservations about the scale of the project, whether Dr Darlington could actually achieve his program with the resources requested.

It was decided a small panel should visit Dr Darlington to consider the scale of his proposals and the available resources for the hardware construction work. Due to the rail dispute and bad weather the visit was cancelled. The Panel will visit before the next Computing and Communications Sub-Committee and Professor Needham (who will visit Dr Darlington as part of the Panel) will give the Panel's recommendation to the Sub-Committee at the next meeting.

Page - GR/B/94403

This application is for funds to evaluate on Array Processor for a Bitmap Display system, which would complement previous work on disarray processors. The Industrial Co-ordinator was asked to visit the applicant and Mr Dixon was asked to consult Ferranti re potential applications of the project. Mr Dixon is awaiting a reply so could not comment. Mr Chambers was reasonably happy with the information received when he visited Dr Page.

Garrett - GR/B/92287

At the last meeting this application (for the Implementation of Network and Transport protocols in a Standard Ethernet Environment) was referred back to the applicant with an invitation to provide assurance of portability and possibility of involvement with Ethernet vendors eg Digital, Intel, Systime, Xerox etc possibly via a co-operative grant application.

Since that meeting Dr Garratt has re-submitted the grant with a commercial partner (Thame Systems Ltd). The Panel reassessed the application, Mr Portman pointed out that work was already being done commercially along these lines, the Chairman agreed and added that the application had been taken over by events. The Academic Co-ordinator thought the product useful but funding coming from commercial means. The Panel rejected the application on the grounds that knowledge would be gained more quickly if industry did the work, therefore industry should support it.

The Secretary noted that as a resubmission it goes to the Co-operative Committee with a recommendation for rejection.

Weatherill - GR/B/96856

(Recommendation to the Computing & Communication Sub-Committee)

This grant for the evaluation of Applicative Programs by Processors with multiple memories was passed to the CCSC with a recommendation of support. The application was awarded.

Bell - GR/B/93833

(Recommendation to the CCSC)

This application for funds to evaluate alternative implementations of multi-processors was visited by Drs Duce and Wand to discuss cutting the workload and equipment needs. These results being favourable the grant was awarded.

Weston - GR/B/93581

(Consideration by Co-operative Grants Committee)

The application was for a grant to implement a local area computer communications network in a glass container manufacturing plant. Although the Panel recommended support the Co-operative Grant Committee rejected the application which has now been submitted to DoI.

4. CHAIRMAN'S REPORT

The Chairman reported that there was nothing of direct interest to the Panel discussed at the Computing and Communications Sub-Committee meeting held on the 2/3 November.

Professor Needham then went on to report about the recent seminar held at Cosener's House entitled 'Sapiens'. The seminar was the outcome of a recent visit to Japan by a group lead by Reay Atkinson to investigate the Japanese 5th Generation computer project. The aims of the seminar were to see what the UK would do, compete with the Japanese program or co-operate.

The result of the seminar was a document with ideas of a very large UK programme spanning over 5 years researching knowledge based systems. The programme will share research amongst UK industry with results shared by all. SERC and university establishments, it is thought, should be involved. Demonstration projects will be focusing the whole efforts of the programme.

5. ACADEMIC CO-ORDINATOR'S REPORT

Dr Duce presented this report in addition to the written report. He noted that the prototype Manchester Dataflow Machine successfully executed its first program on 6 October 1981. On visiting Drs Gurd and Watson in November he witnessed programs being run with 1, 2 and 3 processors. Evaluation work is being carried out and should be completed in July 1982.

Logica Cambridge Ring equipment at the end of November and installation is now in hand. Contracts for installation and maintenance have been agreed.

Dr Duce invited the Panel to consider a request from Professor Randell of Newcastle University for the loan of two DMA Unibus access logics (equipment available in pool), the request was agreed.

It was reported that Professor Coulouris has now received PERQ computers from the DCS equipment pool and Mrs Brown of the University of Kent, one machine. There have been many requests for the remaining three machines in the DCS equipment pool from investigators these, Dr Duce pointed out, would be the subject of a separate agenda item.

The Academic Co-ordinator informed the Panel of a forthcoming Workshop on Logic Programming and Logic Machines being organised by Dr Kowalski of Imperial College for 11 and 12 February.

Dr Duce finally reported that the software developed under an EMR agreement with the University of York to link Unix systems to PSS/SRCnet was successfully installed at RAL during November. Installations at other sites are in hand.

6. INDUSTRIAL CO-ORDINATOR'S REPORT

Mr Chambers reported that since taking up his post in October he has visited a number of groups within the DCS Programme. He said that this has helped him to understand the character of the research and he has been impressed with the quality of work.

The Industrial Co-ordinator said his aims were to broaden and strengthen industrial links with groups and hoped to achieve this in the next few months when his three main activities will be:-

- i. To continue the round of research group visits
- ii. Follow up industrial contacts already initiated by researchers, and by earlier phases of the programme.
- iii. Prepare a promotion kit descriptive of the programme for industrial presentations.

7. PERQ ALLOCATION

Dr Duce introduced this item. It was agreed that the Panel could consider recommending use of grant funds to purchase additional units for specific investigations, these to be returned to the pool when the grant expires.

Requests have been received from:

Prof Brown	Kent
Prof Dagless	Bristol
Prof Hoare	Oxford
Mrs Hughes & Dr Powell	UMIST
Mr Wadge	Warwick
Mr Shepherd	Strathclyde
Dr Dixon	Hatfield
Drs Gurd & Watson	Manchester
Dr Roberts	Reading
Dr Sharp	Swansea
Dr Sleep	East Anglia

plus a grant application that includes a PERQ from Dr Lauer, Newcastle. The Panel decided to allocate PERQs to Dr Sleep, East Anglia, Drs Gurd & Watson, Manchester and Dr Lauer (subtracting cost of PERQ from grant application) if his grant application is successful.

8. INDUSTRIAL CONFERENCE

The Secretary introduced this item, he told the Panel that the theme of this conference would be more general than the one to be held in Strathclyde. The aim would be to hold it around October or November 1982, it would last for two days and advertisements would go out in the Spring.

The Industrial Co-ordinator thought a small fee would be appropriate and suggested a sum of £35 per day. The Panel agreed that a fee would be in order, but the sum was not fixed.

9. RESEARCH PROPOSALS

Mr Monniot advised the Panel that recommendations should be classified as follows:

- alpha 1 - funding essential
- alpha 2 - funding highly desirable
- alpha 3 - funding desirable

and then ranked in priority order.

9.1 Grant Applications

Dr J Darlington, Application for Development of a General Purpose Applicative Language Environment, deferred (Panel to visit before next C&C Sub-Committee Meeting and comment on behalf of DCS).

Prof C A R Hoare and Mr M K Harper

This application was for equipment to enable the research carried out under existing research grant. 'Distributed Computing Software' to be of more relevance to other grant holders by implementation on PERQs. Equipment requested was a PERQ system with Cambridge Ring access station. The spokesmen (Dr Wand and Dr Brinkman) thought the case for support was weak. The Panel as a whole were not enthusiastic about this application. Reject.

Prof B Randell

The purpose of this project is to survey research in seven German universities and in the Gesellschaft fur Mathematik und Datenverarbeitung, Bonn, in relevance to the DCS project. The survey would be carried out by Ms I Gouveia Lima a Multilingual research assistant at Newcastle. Professor Grimsdale thought it an expensive way of getting information, and thought more should come from the grant and recommended it being an evaluation review also. The view was that she should take copies of the DCS Annual Report and do some promotion work!

Rated alpha 2

Prof B Randell (VF)

This application was for funds to allow Professor R H Campbell to visit the University of Newcastle for a period of 12 months, assisting in the investigation on Synchronisation and Error Recovery Problems in Parallel and Real Time systems.

The views of Mr Milner and Mr Brinkman was the the visit would be of great value to Professor Randell, and the grant should be awarded. The panel agreed and rated the application alpha 1.

Mr D Hutchison and Mr W D Shepherd

The aim of Mr Hutchison and Mr Shepherd is to produce low-cost X25 interfaces for Ring and Ethernet-like local networks, using high level language software and microcomputer hardware. In the X25 implementations the number of virtual circuits and the options provided will be controllable using compiler-time parameters.

Dr Wand in a letter to the Panel thought the proposal timely and sensible but he had reservations as to whether it should be on an EMR agreement or JNT project. Mr Holloway thought it lacked links with industry.

The Academic Co-ordinator pointed out that both Edinburgh and Kent Universities had projects along this line but they had proved expensive. The Chairman asked for Dr Duce and Mr Holloway to find out more facts before the next C&C meeting.

Mr Monniot thought there may be a chance of a Co-operative grant with British Telecom. The application was not rated.

Dr Lauer

This grant application was for funds and equipment to allow Dr Lauer to convert the formal results obtained during his on-going DCS project into a practical computer supported tool for the designer of concurrent and distributed systems, achieving high portability.

Dr Wand and Mr Milner supported the application as did the Panel with little discussion. Dr Duce added that the original project (which expires in June) was theoretical, notation and form could benefit from practical application. The Panel rated it alpha 2.

N.B. Should this application be funded the Perq requested in the application would be supplied from the DCS pool therefore lowering the total amount requested by the applicant by 25K.

Prof Y Paker

This application was for funds to investigate Computer Graphics Aided Design of Office Information handling. Mr Portman thought Professor Paker has underestimated the complexity of the application, other comments were that the work could not be accomplished in the time scale of the project and a lot of the proposed investigation was irrelevant. Dr Duce said that his previous grant had been completed but results not compared with other work in the field. Professor Paker's background was not in this type of work. The Academic Co-ordinator did suggest he talk to various companies but there was no evidence to suggest that this was done.

The Chairman suggested the Panel was against the application and recommended rejection. This was agreed.

Prof Y Paker (VF)

This application was for a visit by Dr M Bozyigit to aid with the Office Information handling project (see above), as the project was rejected there was no point in approving this application.

Prof J P Fitch (VF)

This application was for Dr J Marti to visit Prof Fitch for the duration of three months. The Panel agreed to the application on the grounds that Dr Marti and Prof Fitch already had a good working relationship. Mr Milner (in writing) suggested a longer stay (6 months) by Dr Marti, the chairman approved and suggested an increase of £6K onto the grant to fund this if Dr Marti agreed to the proposal. Application rated Alpha 1.

9.2 Applications for Comment

Prof M Healey

Consideration by Computing and Communications Sub-Committee. Prof Healey's project concerns the development of Software for implementing a word processor to Teletex standards and the investigation of Teletex protocols is Local Area Networks. The duration of the project would be two years.

Prof Grimsdale outlined the project to the panel, Mr Holloway supported the basic principles of the application but had three major criticisms

- a. No plans to hand results over to industry
- b. No means of comment to CCITT
- c. No means of evaluation.

The chairman commented that previous work has been done in this area by British Telecom. Mr Holloway commented that the system aspects of Teletex were of paramount importance (i.e. which parts of the protocol are implemented where) but Healey showed no evidence of addressing these.

Dr D Gillies et al

Consideration by Control and Instrumentation Sub-Committee. The principal objective of this application is to improve the fault tolerance of distributed computer control systems by use of dynamically reconfiguring architectures. Mr Dixon showed interest in the concept of the project but said it lacked switching abilities which would be costly. He added if it was to be made commercially available special provisions should be built into the hardware, but thought it a useful contribution to its field.

Prof C Hoare and Dr A Dexter

Consideration by Co-operative Grants Committee.

The proposed research in this grant is the use of Pascal-plus in the design simulation and implementation of distributed systems for process control. The views of the panel were that: the concepts of the application interesting and novel, the industrial collaboration (50% funding) admirable, advised support for the project.

Prof R L Grimsdale and Dr F Halsall

Consideration by Co-operative Grants Committee.

The application is to investigate the design and properties of a versatile high performance broad band local area network which will allow the interconnection of a wide variety of different peripheral devices and computer systems using f.d.m. transmission supporting a number of different communication protocols and techniques.

Mr Holloway thought the proposals in this application to be unique to this country. The industrial collaborator (Rediffusion) had the technology and Sussex the expertise. Prof Needham thought it should be recommended. Mr Portman then stated that he thought Ferranti had already done work in this field, Mr Dixon verified this and added that it was introduced to Germany two years ago. But he was unsure as to how advanced the concepts were. It was stated that British Leyland systems already had something along these lines in operation. Mr Dixon was asked to find more information and sent it to Prof Gimsdale and the panel would advise Prof Grimsdale to contact BL to explore the facts. If the application was an advance then the panel would recommend it. The Industrial Co-ordinator asked for the grant (if successful) to be added to the DCS portfolio.

Prof Healey

Consideration by Co-operative Grants Committee.

The objective of this application is to design and construct a prototype for a new local area network using optical fibres which will handle mixed traffic, e.g. voice and data.

Mr Holloway reported to the panel that there was little technical information to be gained from the paper submitted in-confidence by the applicants. Little emphasis was placed on the value of the project.

Prof Needham thought it lacked systems thought. The panel as a whole was worried at the assessed value of information and recommended rejection with the comments:

- a. No evidence of serious innovation of local area networks.
- b. Doubts about industrial co-operation.

Priority order of applications as follows:

Alpha 1

1. Fitch (VF)
2. Randell (VF)

Alpha 2

1. Lauer
2. Randell

10. PROGRESS REPORTS

The following progress reports are those which were not received in time for consideration by the panel on 14th July 1981. The reports were to have been considered by the Panel at its meeting held on 13th October 1981, but in view of Mr Portman's absence discussion was deferred.

Hunter et al

A lot of good work was being done but the report was indigestible, happy with results so far.

Wadge

Could not really give an opinion as he could not glean much from the report. Dr Duce stated that things seemed to be going well.

The date of the next panel meeting will be 29th April 1982.