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SCIENCE AND ENGINEERING RESEARCH COUNCIL
RUTHERFORD APPLETON LABORATORY

COMPUTING DIVISION

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issued by
R W Witty

ALVEY ACADEMIC SOFTWARE ENGINEERING ADVISORY PANEL

Meeting 3 November 1983, York.

16 November 1983

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 STI Panel Meeting Papers - 3 Nov File

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1. ATTENDEES

Mr D Talbot (Chairman)
Mr R Boot
Prof I C Pyle
Prof J Welsh
Dr R W Witty
Dr D Worsnip

2. COORDINATOR'S REPORT

The Coordinator reported that three workshops had taken place since the last meeting. The first was the Hope Tutorial at Imperial College on 5 and 6 September. The second was the Ada Workshop at Bath on 13 - 15 July. The third was the Concurrency Workshop held jointly with STL (Standard Telecommunications Labs) on 9 and 13 September at Cambridge University.

The Coordinator informed the Committee that the grants to Dr Herbert at Cambridge, Professor Jones at Manchester and Professor Burstall at Edinburgh had now been announced. A copy of the latest version of the Grants Portfolio paper was tabled.

Dr Witty explained to the Panel about his new role as Head of Software Engineering at RAL and a member of the Alvey Directorate reporting to David Talbot. Dr Witty thanked the Panel for their support during the recent period.

3. MODUS OPERANDI

The Coordinator explained to the Panel the present situation which was an interim arrangement between the old Software Technology Initiative and the new, as yet not in place, Alvey Software Engineering mechanisms. The applications on the table had been filled in as though they were normal Software Technology Initiative applications but they were to be judged against Alvey criteria. The possible recommendations of the Panel were increased to include:

- (1) Reject on normal technical grounds.
- (2) Award as normal.
- (3) Award that conditional on an industrial uncle.
- (4) Reject with strong encouragement to re-submit when formal industrial collaboration obtained.

4. RECOMMENDATIONS

4.1 GR/C/7638.0 Backhouse and Turner, Essex University

Recommendation - Award at Alpha plus on the condition that an industrial uncle is organised. Total funds £36,732.

This grant was firmly in the area of a priority research topic, namely formal specification and verification. Dr Backhouse is a well respected academic. Project was moderately priced and well thought through. British Telecom were expressing a keen interest in the work and should become the industrial uncle. The grant should be awarded given that Professor Burstall agrees that the technical programme is sensible.

4.2 GR/C/83685 Beddie and Raeburn, Napier College

Recommendation - Reject with encouragement to form industrial collaboration.

The Panel generally supported the research outlined in the proposal and felt that it fell clearly within the priority areas of the strategy. However, they felt that the work proposed was probably too ambitious for a new and untried group with no existing track record. This was a re-submission of a previously unsuccessful application. The Coordinator had talked to the applicants and the applicants were taking steps to formulate an industrial collaborative project. The Panel therefore wish to encourage the formation of this industrial collaboration and so the rejection is made against the Alvey criteria that we should encourage industrial collaboration.

4.3 GR/C/82114 Brailsford, Nottingham University

Recommendation - Rejection.

The proposal was for a collaborative project between Nottingham and Bleasdale Limited to port UNIX to an M68000 workstation. There was no research content in the application. It was a straightforward porting of UNIX. The applicant made the claim that no source version of a 68,000 UNIX system was available in the UK. The Coordinator undertook to enquire of the Common Base Programme whether this was correct. (Note: CBP report that UNIX M68000 sources are available to UK universities.)

4.4 GR/C/75574 Hull and Ewart, Ulster Polytechnic

Recommendation - Reject with encouragement to re-submit as collaborative project.

Professor Welsh felt that the applicants were well qualified to undertake research. However, the Panel felt that the project was ill-defined and the re-submission should contain a clearer statement of the objectives of the research. The Panel also felt that the project was too broad a scope and should be constrained. The Panel felt that the applications proposed were somewhat conventional and to some extent 'batch' orientated. The Panel were surprised to see no mention of recent developments such as data dictionaries. Given the background of one of the applicants the Panel were surprised that no formal basis for the method proposed had been formulated. The Panel felt that the project would benefit from

collaboration with an industrial partner who either had an interest in the method itself or was interested in one of the applications proposed. If a formal industrial collaboration could not be formulated the Panel would be willing to consider a project having an industrial uncle.

4.5 GR/C/78575 Lehman, Imperial College

Recommendation - Reject with encouragement to produce industrial collaborative project.

Overall the Panel liked the proposed research project. It was fairly ambitious but was in a key research area. The Panel would like to see the question of performance measurement and prediction tackled in this project and a clearer statement of which application areas were being addressed would be helpful. The Panel felt that as now several database design aids are now on the market, it was surprising to see none of them mentioned in the application. The Panel would like to see some indication as to how the language and modelling techniques will be made understandable to non-computer literate clients. If the applicant in the re-submission needs to buy database software funds should be included in the project cost.

4.6 GR/C/75239 Lindsey, Manchester University

Recommendation - Reject.

The Panel did not support this line of research at all. The design and creation of new programming languages was against general trend of Software Engineering policy. The Panel felt that the applicant had been pursuing this line of research for rather too long and actioned the Coordinator to talk informally to the applicant to see whether he could not be persuaded to follow a different research direction.

4.7 GR/C/82893 Paul and Balmer, LSE

Recommendation - Reject.

The Panel felt this was rather a weak application. The applicant did not seem to have done enough work before submitting a SERC research grant application. Specifically SERC should not be asked to fund several months work in order to do such things as literature surveys and initial studies. The Panel felt that the case as to why current simulation systems were inadequate had not been made, the reference to expert systems was rather inadequate and overall the description of the problem and the proposed programme of work were inadequate. The Panel suggested that the applicant might like to consider formulating a collaborative proposal with those sectors of industry which had simulation problems and Professor Hockney at the University of Reading who has a considerable reputation in the field. Industrial companies requiring simulation are widespread. Of immediate interest to the Software Engineering programme are the needs of the VLSI Design community to do circuit simulation. British Telecom are a potential collaborator in this area. The importance of simulation is recognised and the applicant should be encouraged to submit a rather stronger, more specific, proposal in collaboration with others.

4.8 GR/C/77219 Perrott, Queen's University Belfast

Recommendation - Reject and re-submit as collaborative project.

The Panel felt that the investigator had a good track record and was doing good work in this area. There seemed to be no one else working in this area. The work was of clear industrial relevance and it was a shame that all of the machines on which the applicant was currently working were American. The Panel would like to see this work go forward as an industrial collaboration between the applicant and, say, ICL using the PERQ mini DAP or Ferranti Limited.

4.9 Perrot, Japan Trip, Queen's University Belfast

Recommendation - Reject.

The applicant had stated in his application that he wished to sell the results of his current research to the Japanese. The Panel felt that this should not happen under any circumstances, especially as all of this work was being funded by SERC. An opportunity should be offered to UK industry before going to Japan.

4.10 GR/C/83159 Rees, Southampton University

Recommendation - Reject with encouragement to formulate a collaborative project.

The applicant had proposed to develop a piece of software for which there is already a large academic demand which is currently unsatisfied and which is likely to lead to a significant industrial product. However, the actual application was somewhat naive and the applicant was recommended to talk to William Newman about some of the more subtle technical requirements of such a development. The applicant was also encouraged to talk to other universities with a similar interest, for example, Dr Brailsford at Nottingham, Mrs Heather Brown at Kent and Dr Corbert at Essex University. Because of the clear industrial potential of this proposed work, the applicant was encouraged to contact UK industry to see whether a joint university industry collaborative project could be formulated to carry out the work.

4.11 GR/C/83036 Scales, Liverpool University

Recommendation - Reject and re-submit as industrial collaboration.

The proposed project seemed to be a development of existing work with not a high research content, but a fairly high utility content to the scientific community if successful. The Panel would have liked to have seen the work orientated towards the DAP as well as the American machines. As NAG are direct beneficiaries of this work the proposal should be re-submitted as an industrial collaboration with NAG putting in some of their own money.

4.12 GR/C/84095 Turner and Thompson, Kent University

Recommendation - Award at alpha plus on the condition that an industrial uncle is found.

The Panel felt that the work proposed was clearly within its priority areas for specification and verification. Professor Turner had a good reputation in the field and so the award should be at the Alpha plus level. The Office indicated that removal expenses for Mr Livesey from New Zealand could not be provided. The Coordinator has since contacted Professor Turner who is willing to accept this reduction. Professor Turner had asked for a reasonably high salary for Mr Livesey and this high salary was supported by the Panel in the light of Mr Livesey's experience and capability. The Office has since determined that the applicant does not require a UNIX source licence. The Panel felt that the project should go ahead given that a suitable industrial uncle can be found. The Coordinator informed the Panel that the applicant was already in touch with Mr Warboys of ICL who was likely to be the uncle.

4.13 GR/C/84149 Wallis, Bath University

Recommendation - Reject and re-submit as collaborative project.

The Panel did not see any need to pursue the Algol 68 line of work in the proposal but did see the clear commercial potential of the COBOL aspect. The Panel has been supporting the work at Bath for some time and felt that the COBOL work and work on programme improvers which had previously been rejected should now go forward and so the recommendation is that the project should go forward at the level requested i.e. £69,000 to do work on the COBOL translator and programme improvers but not on Algol 68. Because of the clear commercial relevance and a desire to stop the work being exploited by the USA's Department of Defence the Panel would like to see this done as a collaborative project. Therefore the formal recommendation was reject with strong encouragement to re-submit.

4.14 GR/C/75758 Wand, York University

Recommendation - Award at Alpha plus.

The application was for the roll of an existing grant and therefore the amount of new money required was less than that specified in the bottom line of the application. Dr Worsnip undertook to find out how much new money was required; it since appears to be of the order of £100K. The Panel strongly support the work at York and strongly supported this application to continue the infrastructure for the Software Technology Initiative's only Software Technology Centre. The Panel supported the requirement for the UNIX programmer and documentation officer. The requirement for an expensive tape deck was questioned and Dr Wand has since been contacted and asked to investigate alternative methods of dumping his discs. If no satisfactory cheaper alternative can be found then the tape deck may be purchased. The Panel was happy that this grant be awarded with no collaboration or uncle because it was a necessary piece of infrastructure.

4.15 GR/C/84798 Welsh, UMIST

Recommendation - Comment only.

This application had been put to the Panel for comment only. The Panel supported the work proposed and were keen to see that the collaboration between Professor Welsh and Professor Rose continued and enabled the Queensland system to be brought into the Common Base. The Panel were also pleased to see the telex of support from ICL and encouraged a formal submission from UMIST to second an RA to the University of Queensland in association with ICL to bring the Queensland system into the Common Base.

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