SCIENCE AND ENGINEERING RESEARCH COUNCIL
RUTHERFORD & APPLETON LABORATORIES

COMPUTING DIVISION

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Notes on a visit to Professor Aspinall and Dr Dagless
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Aspinall file

The purpose of the visit was to discuss Professor Aspinall's forthcoming application for a roll of his DCS grant in the light of Dr Dagless' appointment to a chair at Bristol and move to Bristol in January 1982.

Existing/projected work.
Prof Aspinall hopes to keep Cyba-M at UMIST for a further two years. They would like provision for up to two men to move to Bristol and for Data Communications facilities to be provided between UMIST and Bristol.

The printer cutter work should be finished before Eric Dagless leaves UMIST. There is some possible joint work with Jane Hughes and Malcolm Powell on the printer cutter, the idea being that Jane and Malcolm will try out their design methodology on the specification for the printer cutter system drawn up by David and Eric.

Prof Pilcher and the contstruction department at UMIST is putting together an application to SERC for site modelling work. The idea is to model a building site! The models seem to map nicely onto the Cyba-M multiprocessor architecture.

John Porteus, working for Eric Dagless is involved in work with British Telecom. Peter Skan a PhD student will be employed as an RA from 1 October and will also be engaged in the British Telecom work on the modelling side. Mike Barton has been looking at the effects of the inter-connection structure on Chill and Ada communications primitives. Peter Skan has taken Mike Barton's Chill implementation and is improving the algorythms used. John Porteus has been taking a different approach to the British Telecoms problems, saying this is the application, how does the structure of the machine which it might be implemented influence the application directly? With USAF funding UMIST have built a kit of parts to model ring structures (insertion buffer techniques) on Cyba-M. They hope to implement some of the British Telecom work on different architectures using this kit of parts.

Cyba-M will soon be moving physically to the computation department. The hardware has a responsibility of an EO and an RA both of whom are competent. Martin Edwards a lecturer in the department and one of the designers of Cyba-M has agreed to manage these two staff. They will be responsible for

the day to day running of the machine and may initiate and supervise necessary modifications although these are expected to be few.

On the software side Paul Burkensher is responsible for the maintenance of the EMU developmemt environment. Keith Rautenbach is responsible for the Pascal system (based on eml) and David Hayes for the utility library. Tim Richards a new lecturer in the department has agreed to take over the day to day management of these three RA's. Tim's background is in image processing and for the last six months he has been looking at possible usage of Cyba-M in this environment.

Steve Young (lecturer) has been developing his work on speech processing and wants to start using Cyba-M. Steve managed some of the initial work on EMU and will be a back stop on the software side if any problems arise.

In addition to these members of staff David Aspinall has a part-time PhD student from ICL who has been looking at applicative languages, he will be a full-time student from January 1982. He and Paul Burkensher hope to implement an emulator for Berkling's reduction machine on Cyba-M.

Concurrent Pascal implementation on Cyba-M ceased when Derek Coleman went to the States. Jim Welsh has some plans for Pascal Plus and may put some students onto Cyba-M. Jane Hughes and Malcolm Powell have a co-operative award with British Leyland but this doesn't necessarily involve Cyba-M. David Aspinall has had some contact with Logica with a view to putting Rapport on Cyba-M but this is very tentative at this stage. He has also had some contact with Ferranti but hasn't persued this yet.

SERC application

By 1983 Cyba-M will be ten years old. They want to continue Cyba-M until October 1985 to insure that all PhD students and applications, studies etc can be tidied up. There are several lines they want to persue:

1. Multiprocessor environment. The idea is to implement the Cyba-M development environment on commercial kit e.g. 16 or 32 bit micros connected by guess what. Sussex may have an interest in this work.

2. Build some new machines probably of modular construction that can be re-configured to suit a particular requirement.

3. Replace 8086's by bit slice technology.

4. Applications work in speech and/or image processing.

For the roles of the DCS grant Professor Aspinall would like:

1. EO plus software RA for essential maintenance of Cyba-M to allow PHd students etc to finish off.

2. A second RA to do development environment work with commercial hardware. Stopage has envisaged that this will be a two year study at the end of the period of a roll.

It is uncertain how many staff wish to transfer to Bristol with Dr Dagless. One seems fairly certain that a second is hesitant.

After discussion with the Office and Dr Needham the following plan was recommended:

1. Application for roll as DCS grant should be limited to one EO plus one RA for maintenance of Cyba-M. Asking for a second RA and more kit for programme development environment work could well lead to rejection by the panel.

2. Since the position concernig RA's moving to Bristol is uncertain it was felt that the application should state that up to two of the staff should be seconded to Bristol for some period of the grant. This seems to be acceptable to the Office.

3. Ask for some small sum to keep the Cyba-M hardware going (replacement components etc).

4. Submit RG2 for 15 September.