

Access to METRONET is provided by the NETWORK control card and the NETFILE/NETSUB commands. To run a job at Rutherford the user has to specify "RUN=RL" in the appropriate field for NETWORK/NETFILE/NETSUB. Users requiring further information on submitting jobs to Rutherford via METRONET should consult their local Program Advisory Office.

It is important to note that the METRONET link does not provide any terminal access to ELECTRIC.

At the present time only jobs submitted via METRONET can be printed at a METRONET site. Eventually this restriction may be removed and routing of other jobs via Remote Number 68 be possible.

## SECTION 7 USE OF THE BACK TO BACK LINK WITH CERN

The Rutherford Workstation with the Remote Number 66 is connected to the same small computer as the Workstation with Remote Number 2. The workstation software is written so that output from one computer centre becomes input to the other.

This connection may be used:

- i) to route the output from one centre to printers attached to the other;
- ii) to transfer files from one centre to the other;
- and iii) to submit jobs from one centre to run at the other.

Details of how to use these facilities are described in two ELECTRIC files.

JOB=B2B.PRINTING gives details of how to specify ROUTE and other parameters to direct output from either centre to the desired location.

JOB=B2B.FTS describes the File Transfer Facilities and the extension which allows job submissions. In addition to these two files an up to date summary of the status of the facility and any outstanding problems is maintained in JOB=B2B.NOTES.

Problems and comments on the facility should be directed to Cyril Balderson or James Hutton at Rutherford or any of the Rutherford Link persons (Bob Brown, Fred Wickens or Norman Gee) at CERN.

Rutherford Laboratory Computer Advisory Committee

The Committee met on 7 November 1978 and its meeting on 24 January 1979 was cancelled. Papers for that meeting were, however, circulated to the members with a note from Mr Walkinshaw advising them of his decision to retire at the end of August 1979. The Committee met again on 4 May 1979.

The membership of the Committee in 1979 is as follows:

|                       |                                      |
|-----------------------|--------------------------------------|
| Professor W Galbraith | Sheffield (Chairman)                 |
| Professor B Collinge  | Liverpool                            |
| Dr R J Cashmore       | Oxford                               |
| Dr R J Ellison        | Manchester                           |
| Dr I O Skillicorn     | Glasgow                              |
| Dr B R C Martin       | University College, London           |
| Dr E B Dorling        | Mullard Space Science Laboratory     |
| Dr E M Freeman        | Imperial College, London             |
| Dr A D Gosman         | Imperial College, London             |
| Professor M G Haines  | Imperial College, London             |
| Mr O S Mills          | Manchester                           |
| Dr J A McGinney       | Natural Environment Research Council |
| Dr B W Davies         | Daresbury Laboratory                 |
| Dr M B Dunn           | SRC Central Office                   |
| Dr B R Martin         | Appleton Laboratory                  |

The Committee regularly receives a Progress Report which reviews the performance and usage of the 360/195 computer complex. In May 1979, this highlighted the installation programme of magnetic tape, 3350 disk, and block multiplexor channel upgrades which immediately preceded the installation of the IBM 3032 computer during March 1979.

The Committee received a report on the meetings of the Facility Committee for Computing and expressed concern about the apparently low overall increase in the forecast bid for computing hours included in the Five Year Forward Look.

The Committee considered papers which dealt with the allocation of computing time recommended for 1979/80 by the FCC and its initial division between the Daresbury and Rutherford Laboratories. The provisional details of the allocation are:

| Funding Authority | Allocation in 1979/80  |              |      |
|-------------------|------------------------|--------------|------|
|                   | 195 equivalent overall | cpu hours RL | DL   |
| ASR               | 700                    | 700          | -    |
| Engineering       | 800                    | 800          | -    |
| Nuclear Physics   | 7070                   | 6350         | 720  |
| Science           | 2500                   | 1180         | 1320 |
| Central Funding   | 500                    | 260          | 240  |
| External          | 450                    | 330          | 120  |
| TOTAL             | 12020                  | 9620         | 2400 |

A report was presented to the RLCAC on the installation programme for the 3032 Front End Processor system. The phasing and preliminary timetable was accepted. The Committee noted that the 3032 allows the introduction of the Conversational Monitor System (CMS) supported by IBM, which would provide alternative data editing facilities to ELECTRIC. Users' views on the choices of Editors are considered important. A body of experience has built up with WYLBUR at CERN and other data editing systems elsewhere. The Committee wished to be informed of the outcome of the meeting of the Particle Physics User Advisory Committee held to discuss the topic, but noted that other parts of the user community should have an opportunity to express their views.

#### SRC Facility Committee for Computing

Mr D W Mann of Logica has resigned from the committee. Mr A E Seddon of NERC has retired from the public service and Mr B Rule, Director of NERC computing, now represents other Research Councils on the FCC.

A meeting was held in November 1978 to discuss proposals to buy a Cray 1 and an IBM 3032; both of these were supported by FCC. The meeting also heard that the Research Councils' Computer Review Committee had recommended the setting up of the Joint Network Team for the Computer Board and Research Councils.

In February 1979 the committee met to consider the Forward Look for computing, allocate computing time and advise upon the proposal to purchase an ICL 2960 for the Infra-red Astronomy Satellite programme. Council was urged to continue to press the case for the IBM 3032.

At its meeting in May 1979 the committee heard that approval had been given to purchase the IBM 3032 which had been delivered at the end of March 1979. It was also reported that the SRC had entered into an agreement with the Cray company to buy time on a Cray 1 bureau service to be sited at Daresbury Laboratory. The committee discussed the reorganisation of computing committee

Committees

structure within SRC and agreed that a preliminary paper should be presented at the next meeting in September by the Daresbury and Rutherford Laboratories on the subject of future central computing requirements in SRC.

Dr R A Rosner, the Head of the Joint Network Team, attended the meeting and said that a proposed programme would be presented at the next meeting. A joint meeting of the CB, FCC and JNT was arranged for September 1979.

Finally, the committee heard a review of the first phase of the Interactive Computing Facility programme, presented by the Head of the ICF, Mr P G Davey, and also of the ASR Board's plans to provide a set of six linked computers for astronomical image and data processing: the "Starlink" project.

## SECTION 9

### THREE CHARACTER IDENTIFIERS

The set of user identifiers consisting of a pair of alphanumeric characters is no longer sufficient to serve the user population of the Rutherford MVT System. It has been found technically feasible to permit three characters in a limited way. Using four or more characters or the full set of three character identifiers would involve more work than would be justified.

Identifiers are used for several purposes the chief of which are: HASP/COPPER rations for controlling job submission; SMF accounting of machine usage; ELECTRIC access and file structure; and in the conventional naming of jobs, data sets and load modules. There are several places in system software and resource management facilities where changes are necessary to allow the use of identifiers with more than two characters.

It would be quite attractive to the people responsible for this software if all identifiers were of the same length. Certain proposals have been discussed of ways in which existing two character identifiers could be converted into three character identifiers such that there would be little or no disruption to users. However, one very severe problem decided against this. A very large number of load modules, data sets etc. have been named according to convention. For example USA USB USC USG would all be ascribed to the identifier US at present. If these triads were issued as separate identifiers there would be a great deal of confusion and erroneous deletions could occur. Therefore it was seen as desirable to find a way in which the two character identifiers used by the existing community could coexist with three character identifiers issued to new users and to groups of people who currently have to share a single identifier.

Identifiers

This has proved possible because there is a subset of identifiers which were never issued. This is the set with the initial letter O. The software mentioned above is being modified to treat such identifiers as three character identifiers. This doubles the number of identifiers and will relieve much pressure on the demand for identifiers. As well as meeting the demands mentioned above it will avoid the immediate reissue of identifiers which sometimes causes administrative difficulties, and in due course those users who find it inconvenient to work with numeric identifiers would be able to exchange them for three character identifiers. It must be stressed however that priority will be given to new users and secondly to relieve shared identifiers.

Generally, three character identifiers will be used in the same way as two character identifiers are. The accounting use on a JOB card and at an ELECTRIC login are straightforward. The operation of the naming convention is easily extended. The chief problem is likely to occur with certain parameterised fields because JCL requires that jobnames, components of data set names and so on must not exceed eight characters.

The following specific points should be noted:

- i) ELECTRIC File Structure. The main directory of a user with a three character identifier uses the suffix AINDR so that OABAINDR will belong to OAB. Two character identifiers will continue to use the suffix MAINDR.
- ii) MUGWUMP File Names. These will be constructed from jobnames as now but the number of characters supplanted at the beginning of the jobname will be two or three according to the length of the identifier used by the job.
- iii) ELECTRIC PH Parameter etc. The operation of the PH parameter will be taken care of by a more general change to ELECTRIC to truncate jobnames which exceed eight characters. For example an ELECTRIC print job might become OABOUTPU instead of OABOUTPUT. (It may be decided later to replace the systematic suffix OUTPUT by something like PRINT, PUNCH or TAPE according to the command).
- iv) Subroutine JOBID (SY/34) This is incapable of being modified in a way which not cause corruption in programs using an old version. JOBID will eventually be withdrawn but meanwhile continue to return the first two characters. A new routine will be published to replace it.

There are several facilities for reading disks and tapes. A proper choice is important when unformatted or variable length records are involved. This article discusses three methods which can be used in a variety of applications.

### Fortran READ

The Fortran Programmer's Guide states that unformatted input is much more efficient than using FORMAT statements. However, problems occur with variable length records when the record length is unknown. The system subroutine ERRSET (see Fortran Programmer's Guide) enables a standard recovery to take place but this can be very inefficient. Jobs have been found spending 75% of the CPU time fixing up wrong length record errors.

### OPENM/READM

OPENM/READM can be used for records written with or without FORMAT statements. It may handle several streams at once and any method of blocking (eg RECFM=U, F, FB, V, VB, VS and so on). It returns record length and so has no wrong length record problem. It is convenient for disks and multifile tapes. It supports the very fast "locate mode" of reading which is particularly useful for non-spanned records. Should I/O errors occur, the routine can be set toabend, skip the block in error, or continue.

OPENM/READM is a multi-stream version of OPEN/READ which some users have encountered both at Rutherford and CERN.

### MHOPEN/MHREAD

This routine offers similar facilities to OPENM/READM, except that it only handles one stream at a time and only with RECFM=VBS. (Errors occur if not VBS). However, error recovery is more sophisticated than with OPENM/READM.

Care should be taken using MHOPEN with the H extended compiler and optimization. The data array receiving the record does not appear in the call to MHREAD. The compiler may move the call outside a loop and produce incorrect code. This can be avoided by placing the array in COMMON.

### Documentation

MHOPEN/MHREAD (RW/22) is in 195 Computer Program Library Manual. The writeup for OPENM/READM will appear the same manual. A draft is in ELECTRIC, currently in LRMAINDR.WRITEUP.READM.

Tape Reading