so that they issue an error message and cause a user abend (code 333) if they are called with 2, 2 or 3 arguments respectively.

Charles Wood - User Interface Group

## 12. COMPUTER STATISTICS

## IBM SYSTEMS 24/1/83 - 20/2/83

Weekly availability is uptime/168.

## SYSTEM AVAILABILITY - % of 672 hrs available

NVT - 98.0%, CMS - 99.2%, ELECTRIC - 90.0%.

### MAT THROOPHLOT

Average jobs/week 11356 Average CPU hrs/week 150

## TERMINAL SYSTEM USERS

CMS ELECTRIC Registered users 1000 1202 Active users 469 360

### SERVICE LEVELS

See article about new IBM turnround guidelines.

### USAGE

Cumulative totals are for 46 weeks.

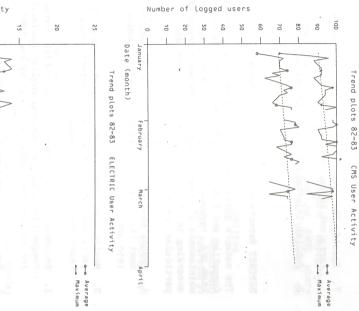
Board	MVT CPUhrs	ELECTRIC AUS	CMS
ASR	340	340	649
Engineering	630	238	611
Nuclear Physics	5846	1895	3268
Science	757	539	1003
Central Funding	184	361	7317 *
NERC	123	87	304
External	99	91	281
Overheads	6	16	1459
TOTAL	7985	3567	14892

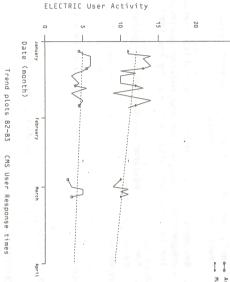
<sup>\*</sup> These entries include some usage due to "service" functions which are strictly an overhead and should be accounted separately.

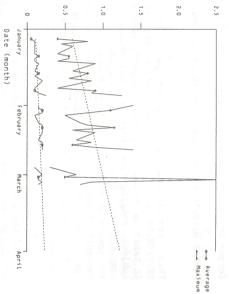
### ICF SYSTEMS

## AU USAGE BY BOARD - periods 8204-8302

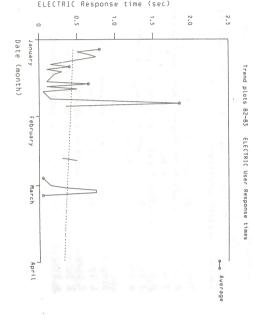
Board	Prime	GEC	DEC-10	TOTAL
ASR	174	223	42	044
Engineering	11460	4124	7396	22981
Nuclear Physics	190	176	0	367
Science	691	746	841	2279
Central Funding	7403	1568	1465	10437
System Overheads	10873	339	2376	13589
External	409	281	298	988
TOTAL	31200	7457	12418	51081







Trivial response time (sec)



 $\infty$ 

## Appleton Laboratory

# COMPUTER NEWSLETTER

# Newsletter of the SERC Central Computing Facility

## No. 33 March 1983

## . ICL PRESS RELEASE ON PERQ

## NX - The UNIX Operating System for Perq

PNX is ICL's implementation of the UNIX multitasking operating system developed by Bell Laboratories. PNX is based on UNIX System III, the latest version of UNIX. The first release implements the majority of the tools of version 7 UNIX, which is a subset of System III.

### PNX involves:

- Microcode PERQ has been re-microcoded as a C-machine and provides 32 bit addressing with paged virtual store
- single and double precision reals
- Rasterop graphics functions.
- The standard UNIX C compiler is included in the software set; FORTRAN 77 will also be available shortly.
- . To cater for PERQ's unique graphics capabilities a Window Manager capable of creating multiple user windows which may be used independently or simultaneously is also included.

ICL PNX is available to all PERQ users from March 1983, and will run on any PERQ system with minimum 512 Kbytes of memory.

This implementation of UNIX on PERQ is one of the first results of the collaboration between ICL and SERC.

## INTRODUCTION TO CMS MANUAL

We have recently discovered that some users are still using the first edition of this manual, dated March 80, as their main source of information about CMS. This is now seriously out of date, and could mislead. Please destroy any copies of this edition that you still have available. The current recommended edition of this manual (Second Edition dated February 1981: RL-80-008) will be revised shortly (we hope to release a new edition in June 83). As this edition does not contain references to some of the more recent additions to CMS a cover note is available which briefly lists those topics of which new users should be aware. A copy of this cover note is enclosed with FORUM and will be

distributed to all new users of CMS. Additional copies can of course be obtained from the Documentation Officer (ext 5272).

Users are reminded that the Introduction Manual should only be used to gain familiarity with CMS. They should migrate to the RAL VM Reference Manual after initial use of CMS and not retain the Introductory Manual for long periods, since it is not our intention to issue updates to this document.

Dave Parker - User Interface Group

## 3. CMS BATCH MONITOR SYSTEM

We have obtained the batch monitor system offered as an Installed User Product by IBM. This system provides a facility for scheduling and monitoring batch jobs in a VM/CMS environment. It is controlled by a supervising virtual machine, which dispatches and monitors other virtual machines to run the jobs. Commands are provided to submit or stop jobs and obtain status information.

The batch monitor can hold status information on many jobs at once including history records of previous jobs. A time window may be specified in which the job is to run, and one job can be submitted conditionally on the completion of another. This is done by making the job exec running in the batch machine submit the next one if it completes successfully. Job steps may be recorded by including the appropriate statements in the job exec - the job step reached will be reported in the reply to a status enquiry, and if the system were to restart the exec would continue from the step it had reached. Otherwise, on restart, jobs that were running at the time are restarted from the beginning.

The system allows for several classes of jobs to be defined by the installation depending on limits of cpu seconds, print and punch records and time windows. The batch server machines will be defined such that they can cope with jobs of one or more classes. Users specify the class required for their jobs when submitting them, and may change the limits for resource parameters by giving them on the command line. Other parameters that may be specified are a job name, the time window that a job may run in, the account number to be charged, and the priority the current job has over other jobs submitted by the same person.

batch machines has not been decided, but will certainly be less than the normal charge for CMS. It may also be possible at some point in the future to allow tape access from one of the job classes. The batch system should be available soon after The charge factor batch machines has applicable to jobs run in the decided, but will

Jane Blades - Systems Group

## THE GILT COMMAND PROCESSOR

Engineering Research Community to reduce duplicated effort and improve the user interference. The Special Interest Group on Tools for Interactive Programs aims to provide standard software to the software should straightforward to use. improve una to understand

One of Three levels of facility were felt necessary: the standard areas software that has 15 been command identified input. S

- (1) Inline editing
- (2) Simple keyword and parameter command decoder
- (3) A table driven command parser

the operating systems. A simple decoder is being provided by DCODLIB; a library of subroutines that are used in a number of programs at RAL. The GILT Command Processor has been chosen to fulfil the Unfortunately inline editing is offer over the multi-user mini requires a character by character involvement from role of table driven parser. impracticable to network as it

## What is the GILT Command Processor?

application programs to provide a interface. produced by CADC that enables the writer of FORTRAN The GILT command processor is യ consistent software

There are two distinct parts to the system:

language definition

## The command processing

The designer of the application program defines the structure of his command language in terms of a state transition graph (Figure 1) which is translated into tabular form by the GILT (Graphical Input Language Translator) program.

Figure 1

In the application program (Figure 2), the tables produced by GILT are used by the Command Processor Subroutines to perform the lexical and syntactic analysis on the commands input by the user. The

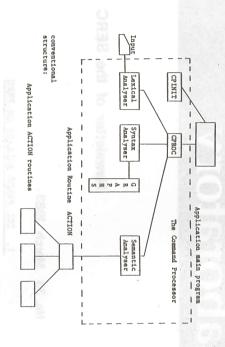


Figure 2

conforming to simple or complex lexical rules and fitting these atoms into the graph defined syntax. If the user command passes this analysis then the appropriate pieces of application code are called to execute it. analysis z. performed by identifying 'atoms'

## What does it offer the end user?

application program: The command independent processor advantages to offers the several user application of the

- (1)The user can request to be prompted for what should type next he
- (2) Minimal typing abbreviations can keywords. bе used for
- (3) The user can define his own synonyms normally have to type frequently. single characters that he for r any would
- (4) The user can define and use macros which can of any length, make referrence to other macr and have arguments with inbuilt defaults. n can be macros
- (5) A permanent record of all user input can stored on a disk file. be

access any information, the application designer, The command processor also that to help enables has been him the provided user to by

What does it offer the application designer?

command language. GILT allows loops, recursion in the language definition. flexible way The state transition in which which to define the syntax of a GILT allows loops, subgraphs and anguage definition graph representation is

approach using sensibly named subgraphs which may then be further subdivided and defined from the bottom up or recursively. The definition of the command language in this way is beneficial to the organisation of the application code, which should reflect the subgraph modular structure in its design. The designer is encouraged to use the

The use of the benefits. It per forms command processor has t two two major syntactic

N

checking, therefore freeing the application from this task. Secondly, the separat command processing and application code by defined interface allows different user int to be tried without effecting the application code. separation interfaces ation of a well prog am

Trace facilities are provided which can be switched on and off through the command processor to simplify debugging of the application program. through processor

How do you use the GILT Command Processor?

designers and manual will | GILT Command A single manual contains where the software is mounted and additional copies be available for grant holders. d the end users standpoints. This be available at each of the MUM sites Processor from both the application the description

The transition graph itself is a useful aid to the inexperienced user of an application system. It provides him with a pictorial representation of the commands that are available and what information is necessary to execute them.

For example, an applicati of a pair of coordinates. by the following subgraph following subgraph: an application might require This could be described

coordinate pair
following: This can be read by the us user as every time a every time

the last two cases the default values that used 'will be dependent on the application code. Will

feel you have a requirement for soft be covered by the Special Interest contact Dave Porritt on EYIN11 (RLPB If you would like further details about GILT or Interest Group, pl [N11 (RLPB or RLGB). please you

D M Porritt - Technology Division

### JNT MAIL

implemented on SERC GEC machines, a implementations are being worked on for a number other types, eg PRIMEs, IBM, VAX, DEC-10. The MA protocol will be replacing the older POST and LPC systems which have been available in the past. Transfer Program. implemented on will only be available to machines connected x.25 network (eg SERCNET) and running a Using this protocol text may be sent transparently between users of different machines. Normally it produced has been new the electronic The MAIL protocol has been fully SERC GEC machines, and standardised protocols to MAIL protocol. The MAIL to an

The MAIL protocol offers the user many advantages Post one destination. systems. MAIL may inherently Copies may be sent to

> combination of characters which comprise the machine Userid. If a message is not delivered it is returned to the sender with the reason for failure. Finally, a very large community are implementing the MAIL protocols in the UK and further abroad. The protocols are very similar to the DARPA protocols in the USA and mail can be sent to the USA via the ARPAnet gateway at UCL, or to the British Wide Area Network via PSS where authorisation to use these facilities is approved. It is not yet clear how many IPSS hosts support third party or parties. Users are usu identified by their real name rather than combination of characters which comprise usually

and store messages. The implementation is based on the EMAS mail command and is a very flexible piece of software. The OS4000 Mail manual fully documents this command to the command that the command that the command the command that the command OS4000 the MAIL command is used to send, The MAIL implementation for the GECs is written as a replacement for the POST and LPOST programs which will eventually be withdrawn from use. Under the whole document need not be read. this command, but for simple use of MAIL from use. viii

Elementary use of MAIL under OS4000

The MAIL program is invoked by typing

MAIL

The program will load any new messages into its files and then display a one line summary of each message on the terminal. The user can then list any message, reply to it, forward it, delete it or keep it. A new message is sent by first Composing a draft message and then Sending the draft. A copy of the message is normally filed when a message is the text between margins and is also able to run an editor on the draft message should corrections be  $\frac{1}{2} \left( \frac{1}{2} \right) \left$ sent. When facilities to necessary. Composing a message, MAIL nas include files in the text, justify MAIL bе

Simple use of MAIL is made in the following example session. It consists of listing a message, replying to it and sending some mail. Text typed-in to the MAIL program is underlined.

Mail Vn 2

1 new message messages, 1 unseen in folder DEFAULT

34= (7) 11 Jun Ken May W.P.M.

<RETURN> to list message

Mail:

Date: Friday, 11 June 1982 12:12-BST Subject: W.P.M. (Message number 3) To: From: Peter Walker Ken May (on GEC 4090 at Bristol) < KM@BRGA>

Message-id: <11 JUN 82 14:12:56 KM@BRGA>

promised to computer-mail them to me as soon they are ready. Please inform wow ----The next Working Party Meeting is tomorrow has

Ken

Mail:REPLY
Replying to Ken May <KM@BRGA>

Text:

Yes I'll certainly forward it. Thanks for

Keeping me in touch with developments.

??

Send now? YES

Message sent and filed

Mail:COMPOSE CC:

To: John Doe

Cc: Dave Glotz, Geoff Davey@SNGA

Subject: Working Party Agenda

Text:

Ken just sent me a missive saying that Fred is

late with the agenda but will send it to me

a.s.a.p. and I will forward you a copy.

Pete

Pete

Ressage sent and filed

Mail:END

Ready

MAIL has an extensive set of selection criteria for looking-up old messages stored in a folder (a folder is a file of messages). These include searching by status (eg new, old or deleted messages), position (eg last, first ten, next six) or content (eg from="User Support", before="10/2/82").

OS4000 MAIL has facilities for supporting mail distribution lists and printing of incoming MAIL on a paper medium. Users may set up their own private directories for outgoing mail to provide mailing lists, aliases (nick-names) or to hold entries with their PSS password. If a PSS password is placed in this directory it does not appear on the message that is sent to the recipient. It is possible to specify that a PSS MAIL message is "reply-paid"; this is documented in the PSS gateway guide, written by A.S.Dunn and available from RAL.

Jonathan Mills - Systems Group

## 6. RELOCATION OF CRAY-1S TO ULCC

It is planned to relocate the CRAY-1S currently at SERC Daresbury Laboratory at ULCC about Easter 1983. The exact date depends upon several factors, the most important of which are the completion date of the ULCC buuilding extension (planned to be during March) and the successful linking and testing of the SERC network into the ULCC new telecommunications system.

The Amdahl 470/V8 computer at ULCC will be used to support the Cray. The operating system on the 470/V8 is MVS and the user interface is IBM JCL, TSO and a portable subset of the University of Cambridge PHOENIX. The disc space available for all user data sets (including ULCC supported data sets) will be approximately 10,000 Megabytes on the 470/V8, once the full configuration of discs have been installed (planned for Easter 1983), and approximately 4000 Megabytes on the Cray. It should be noted that the ULCC does not support private disc pack facilities. It is expected that an archiving facility will be available on the 470/V8 by early summer of this year.

The Amdahl 470/V8 was sized to support about 120 concurrent keyboard terminal sessions to be used principally for file editing and job submission, and intended for those user sites without interactive services and remote batch submission facilities of their own. In the initial months of the service based upon the new telecommunications protocols, it is expected that the number of concurrent keyboard terminal sessions will be limited to about 50. Users should as far as is possible use the remote job entry facilities available at their University to submit jobs to ULCC.

Users who have an allocation of disc space on the 470/V8 and/or Cray must not exceed their allocations. Although a disc space control system based upon that in use at the University of Cambridge will be installed on both systems in the near future, the initial control will be one of purging data sets if allocation is exceeded. Users are responsible for keeping backup copies of their disc data sets, (on magnetic tape) so that they can recreate their disc data sets if these are accidentally lost or corrupted. Although ULCC endevours not to lose data sets, the Centre cannot and does not accept responsibility for the loss of data sets and gives no guarantees to reinstate data

The user interface to the systems at ULCC will differ in some respects from that in use in the Daresbury Laboratory.

The user identifier or user registration number in use throughout the University of London computer services consists of seven alphanumeric characters. In general the identifier reflects the institutional and departmental affiliation of the user. The identifier is used on the JOB statement for 470/V8 or Cray batch jobs, in logging into the system from a keyboard terminal, and as an identifier on disc data sets. Details will be made available in ULCC documentation on the services. When the Cray is moved to ULCC there will be about four weeks interruption in access to the Cray. This time is required to physically relocate the hardware, carry out tests to ensure that the system is satisfactory, and integrate the system with the 470/V8. The user data sets on the Cray discs will have been dumped to tape before the transfer and will be reinstated when the system is ready for use. Users should ensure that they can recreate their own data sets on the Cray discs if necessary. Users will be responsible for moving to ULCC those data sets currently kept on the NAS or on magnetic tape which they require to use on the Cray at ULCC. The ULCC tape drives will accept nine track tapes written at 1600 or 6250 bpi, either unlabelled or with standard IBM labels.

Telecommunication access to ULCC facilities is being based upon the X25 network protocol using the Job Transfer and Manipulation Protocol (JTMP) for remote job entry and 'triple-X' standards to handle interactive terminals. Protocol convertors are being implemented to allow existing RJE and keyboard terminals to connect to the new facilities and so ensure a continuity of access to both old and new services.

Roy Baker - User Support, ULCC

### 7. DIARY

### GEC MEETINGS

MANAGERS' From March 28-29th at Bradford University.

SITE USERS' Monday April 11th at the Atlas Centre, RAL. Please contact Kevin Duffey, User Interface Group (ext. 6252) for details.

## 8. SERCNET MANAGEMENT

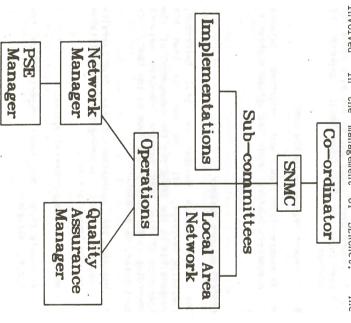
SERCnet is up and running. It has been for several years, and is still growing at a considerable rate. It is also evolving into a National Academic Network under the aegis of the Computer Board and the Research Councils.

SERC users have an interest in the management of SERCnet and its descendents. The right sort of basic services (interactive, file transfer, job submission, etc) and value added services (mail servers, name servers, print servers) must be provided. Quality of service must be maintained. Service levels must be acceptable.

This article shows how the SERCnet is managed and how it relates to the wider network which is evolving. We hope to publish further articles on other aspects of SERCnet.

## Management Structure

The following figure shows the principle bodies involved in the management of SERCnet. The



Computing Coordinator is Dr Manning, Director RAL. The main committee is the SERC Network Management Committee. Its current list of members is shown below:

В	(F)	3	٦	D	Ъ	Ъ
٦	40	R	[1]	Q	3	S
arles		ne	Bryant	House	Girard	er
INL				RAL	RAL	DL

## [ts terms of reference are as follows:

It will advise the Computing Coordinator on the management, operation and development of the SERC service computer network within the overall financial and policy guidelines established by Council and its Central Computing Committee. Specifically the SNMC will:-

- Formulate and keep under review future policy and technical options for the SERC service computer network, evalulate possible alternatives and make appropriate recommendations to the Computer Coordinator for incorporation into a rolling programme.
- Coordinate any necessary development required by the programme.
- Supervise the operation of the SERC service network.
- Consider and decide on:
  (a) All requests for connection to the network.
  (b) All proposals for enhancements and the provision of additional facilities.
- Plan for the transfer of the wide-area connection to the national academic network, taking into account the requirement for minimal service disruption to SERC users. Provide a focus for SERC input to the Network Management Committee of the national academic network.
- . Report to the SERC Computer Coordinator and refer issues to the Coordinator where agreement cannot be reached or where guidance is required.

The SERC service computer network is defined to consist of:

- (a) All SERC Wide Area Network (WAN) arrangements
- (b) All Local Area Network (LAN) arrangements on SERC sites
- (c) All SERC funded LAN on non-SERC sites

where these arrangements are intended to provide a service to users. Most users are likely to be familiar with some aspect of (a) but in the next few years (b) and (c) will be major growth areas.

The service network does not include any arrangements specifically intended for network research.

The subcommittees of SNMC are listed below together with their terms of reference.

## Implementation Subcommittee

A	۵.	V	-	×	A	В	ъ	×	Ъ
	D	P	S		S	٦	(F)		K
Voss	Service	Pucknell	Kummer	Farvis	Dunn	Charles	Bryant	Braden	Girard
NERC	York	DL	DL	Edinburgh	RAL	INT	RAL	UCL	RAL

## Terms of Reference

- To recommend which protocols should be used in or across SERCnet and to monitor the implementation or development of these in the various types of equipment.
- 2 particular to consider r Operations Subcommittee To recommend what additional facilities should provided for for running the network, and in consider requests from the SNMC
- w To decide how technical problems arising out of existing implementations should be resolved.
- 4. to SERC Network Man ag ement

## Local Area Network Subcommittee

Owen	Pulford	W Johnstone	Parker	Tasker	P Sharpe	V McNally	S Cooper	J S Gladstone	E Bryant
DL	SNS	SNS	RGO	DL	RAL-DCS	ROE	RAL	RAL	RAL
									(Chairman)

O L S K K K K K K K K K

## Terms of Reference

- and monitor their progress. To locate all Local funded by the SERC. Area Network activities To note their objectives
- è To prevent duplication of effort when directed toward the provision of a service network and toward the provision of a service net to make representations to ensure this.
- w adopt or define the local area standards used in the SERC service network. to
- .4 To assess the requirements for new local area networks or extensions to existing ones, and to recommend how these requirements should be met.
- 5 To identify common requirements approaches to manufacturers requirements. and meet coordinate these
- 6. To obtain information from area network equipment, software and SERC's approach to the various ies involved with the development of and to standards. of local coordinate
- 7. To recommend the developments where required

00 agreement cannot be reached required. To report to the : SERC Network efer issues to be reached or ( guidance

## SERC Network Operations Sub-Committee

G	4	H	P	Н	R	3	R	Ъ	C	D	
Petmezes	Hopkins	Sherman	S Kummer	L Smith	Cooper	R Jane	E Thomas	M Girard	Balderson	G House	
		DL	DL	DL	RAL	RAL	RAL	RAL	RAL	RAL	
				(Joint					(Joint		
				(Joint Secretary)					Secretary)	(Chairman)	

## Terms

- To carry out the instructions of the SNMC.
- 2 To operations of the SERC network. control maintain the
- w To recommend the rationalisation and of the SERC network. expansion
- To interface at operational organisations and P.S.E. si sites. level with other
- user input To ensure user liason and to act as a focus on the operational aspects for
- 00 To report regularly to the SNMC.
- 9. components conform To ensure that new with and the agreed standards modified network

## SERCNET Network Manager

Computing Division, RAL. He and his team responsible to the SNOSC for the management of operation of the SERC service computer net according to the policy laid down by the SNMC. particular, he should:-The current network manager is Cyril Balderson network

- Maintain the operation of the SERC service computer network, ensuring that the publilshed service levels are met.
- 2 Manage the Change Control system.
- w Provide a focus managers. for fault reports from the
- 4. Plan and coordinate the installation of new
- 5 Assign network addresses and register
- 6. Provide the training and documentation required by the P.S.E. managers and their teams. managers

6

Management SNMC where guidance is

Sherman	S Kummer	L Smith	Cooper	R Jane	E Thomas		Balderson	G House
DL	DL	PL	RAL	RAL	RAL	RAL	RAL	RAL
		(Joint					(Joint	
		(Joint Secretary)					Secretary)	(Chairman)

### of Reference

- day-to-day
- 4. organisations
- 5 To evaluate standardisation purposes. and recommend equipment
- 6. To determine actual service levels.

- titles.

- carry out these tasks. Specify the equipment required in order to
- Publish information on performance

## SERCNET Network Quality Assurance Manager

The network quality assurance manager is Computing and Electronics Division, DL. team are responsible to the SNOSC particular, he should:maintenance of the quality of network components according to the policy laid down by the SNMC. In Ian Smith, He and his He and for

- Ensure that new and changed network meet the required standard before into service. before components being put
- Monitor new developments in order to provide an early indication that a component will not the required standard.
- Recommend the performance levels which network components should attain and publish guidelines for implementors after approval by the SNMC.
- carry out these duties. required 'n order

Jed Brown - User Interface Group

SERC/CREST-ITG Corpus Christi Advanced Course College, Cambridge 11-22 July 1983

Course Director: F Fallside (Univ of Cambridge)

It takes a broad, cross-disciplinary view of the subject, ranging from phonetics, psycholinguistics, computational linguistics and language processing for speech understanding to speech analysis, speech recognition and speech synthesis. A major item of the course is to form links between the first more abstract group and the second more applied group of SERC/CREST intitiative in information engineering. residential course

both in the academic and industrial sectors. This rapidly growing area has been picked out as a major component of advanced information technology by the Computer System programme Alvey and Europe and by It is aimed at research workers in speech science SERC initiatives in by the Japanese the UK, by ESPRIT Fifth Generati

The main lecture courses will be given by:
P Ladefoged (UCLA) W Marsden-Wilson (Cambridge)
Y Wilks (Essex) W Woods (BBN)
B Atal (Bell Labs) F Fallside (Cambridge)
J Vaissiere (CNET) B Lowerre (Hewlett Packard)
M Stella (CNET) J Allen (MIT)

L Tyler (Nijmegen) C Galand (IBM)
C Longuet-Higgins (Sussex) J Bridle (JSRU)
K Sparck-Jones (Cambridge) J Holmes (JSRU)
N Kingsbury (Marconi) S Isard (Sussex) Single Lecture speakers will include:

> speakers from government, industry and the academic will also be a series of after-dinner

Grants will be available for SERC and CREST supported research students to cover the whole cost of the course and for university research workers and younger academics to cover the course fee.

The course fee is £370 and the standard accommodation fee is £232 (excluding 16-17 July) or £275 (including 16-17 July). There is no VAT

Mrs M Barber, Cambridge University Engineering Department, Trumpington Street, Cambridge CB2 1PZ, Tel (0223) 66466.

## CENTRAL IBM SYSTEM JOB MEMORY SIZE AND TURNROUND

10.

limit has been increased from 90 seconds to 5 minutes. We have therefore decided to review the guidelines and relate them to the changed store boundaries. Remember that the aim is to turn round The job turnround guidelines were last revised in 1977. Since then the 195s have been replaced by the 3081, we are running VM, and the short job time limit has been increased from 90 seconds to 5guidelines jobs within the guidelines. s are: The

## SHORT JOBS - NON-SETUP

562K-1.5M 1.5M-3.5M	0-210K 212K-560K	MEMORY SIZE	SHORT JOBS	562K-1.5M 1.5M-3.5M	0-210K 212K-560K	MEMORY SIZE
2 hr overnight	1 hr 2 hr	P10	- SETUP		15 min 15 min	P12
ο ω	2 hr 3 hr	P8		1 hr 3 hr overnight	1 hr 2 hr 1 hr 3 hr	P10 P8
overnight ht overnight	overnight overnight	P6		overnight overnight	overnight overnight	P6
weekend weekend	weekend weekend	P4		weekend weekend	weekend weekend	P4

LONG JOBS (>5 MINUTES CPU)

Priority >=6 overnight =4 weekend

There is no guideline for turnround of priority 1

Turnround will be closely monitored and guidelines reviewed if they are not being met. guidelines will probably be reconsidered when Atlas 10 is introduced.

Paul Thompson - Operations Manager

### CHANGE TO THE CERN LIBRARY

SYS1.CERNLIB and KERNLIB TXTLIB have been modified The third stage in the rationalisation of routines common to RHELIB and CERNLIB has been implemented. The routines UZERO, UBLANK and UFILL in

## INTRODUCTION TO CMS - COVER NOTE TO RL-80-008

The Introduction to CMS Manual (Second Edition) is currently being revised. This note briefly guides new users to facilities that are at present not described in the manual but of which they should be aware.

### XPLANT

You are recommended to skip Chapter 5 of the manual as a new facility called XPLANT is now available to provide very powerful generation and parameterisation facilities. This can be used to create files of JCL, Fortran, etc, with contents controllable by the user and is equivalent to the ELECTRIC edit system. Details of this facility can be found via HELP XPLANT MENU and by invoking the XPLANIDC EXEC which will provide a lineprinter copy of the current XPLANI documentation.

## VPRINT and VPUNCH

The EXECs VPRINT and VPUNCH should be used for printing/punching CMS files at either VNET or HASP controlled workstations (the direct use of NPRINT/NPUNCH is not required for this task).

### Standard PROFILE

The default PROFILE EXEC now invokes a file called STANPROF EXEC R which new users should examine to see what commands are invoked automatically for

### Batch job output

Job output from MVT jobs submitted from CMS is routed by default to the virtual reader of your machine (see HELP ROUTING and HELP VROUTE to change the default).

### Utility jobs

A facility is available to (like TPCOPY, XTAPE etc) (see HELP OSUTIL MENU). generate utility jobs and submit them to MVT

Compilers

The VS Fortran, VS Pascal and VS Cobol Compilers are available in CMS (HELP FORTVS, NEWS FORTRAN, HELP PASCALVS, HELP COBOL).

The Fortran H Extended Plus compiler has been replaced by the Fortran H Extended compiler.

Freedisk

A CMS equivalent of the MVT Freedisk facility is available (HELP FREEDA MENU).

### Archiving

CMS files can be archived (HELP ARCHIVE).

### UDISK

User supplied files (non-RAL CD supported) are available via the UDISK (HELP UDISK).

The WHOIS facility allows you to locate user identifiers/surnames.

### XEDIT macros

Several XEDIT macros are available to help users, particularly those using ASCII terminals (HELP XEDIT TP, HELP XEDIT TC, HELP XEDIT TL).

Other XEDIT Macros available include CAPPEND, CURSLAST, DELWORD, AFTER, BEFORE, GROUP, PAR, SCL, DELETE, PARSE, SELECT, SPJ, UNDER, XX, YY (see relevant HELP XEDIT topic or HELP XEDIT HELP).

### ++H substitutes

A set of EXECs is available to simulate the function of the ++H commands which keep track of batch jobs (HELP HCANC, HELP HLIST, HELP HRATI, HELP HRESE, HELP HROUT and HELP HSTAT).

### Graphics

Jobs producing graphical output may be run interactively in CMS. Graphics output can be sent to the FR80 without using an MVT batch job (HELP GRAPHICS and HELP GRAPHICS MENU). Fiche, microfilm and graphical hardcopy can be produced on the FR80 from CMS files (HELP NFLIST).

A new MAIL facility is available (see HELP NOTE, HELP NAMES, HELP NOTEBOOK, HELP NAMEFIND, HELP TELL and HELP SENDFILE).

## Mugwump Graphics files

CMSELEC can read Mugwump Graphics files (HELP

## Virtual Reader files

your virtual reader. The command RDRLIST will display what files are on

RECEIVE minidisks. will transfer these files onto

PEEK will display the contents files (as will BROWSE). of these reader

file on your virtual reader. RDR will display the characteristics of the next

Listing information about files

FILELIST will display information files. on a list of

### CP commands

EXECIO will execute CP commands and stack the results. It will also allow transfers between stack and file and file and stack.

### Debugging

The CA/SYMBUG interactive debug available (HELP SYMBUG). package 15

### Libraries

The CERN Libraries and Nag Library are available in CMS (HELP CERNLIB, HELP NAGLIB).

# A file transfer scheme is available to send files from and to CMS (see HELP FTP and HELP FTPQ).

SENDFILE

The RAL command SENDFILE has been renamed as GIVEFILE so that it does not clash with the IBM command SENDFILE.

A virtual machine called VNET now controls several of the IBM workstations and gradually the remaining HASP controlled workstations are being moved to VNET control (HELP VNET MENU for details of commands available to control VNET workstations).

The QBATCH command displays the jobs in CMSBATCH's

Details of tapes in the TDMS database can be via the command  $\ensuremath{\mathsf{QVOL}}$  . found

The command ABEND will provide information

on

TVM

abend codes.

Remember that when you issue the HELP command you go into the XEDIT environment so you can make use of any XEDIT command to move around the helpfile as well as taking a copy of that file for subsequent printing.

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HELP

### Accessing CMS

Access to VM/CMS from the Network is now via the call !!RLIB.

From PACX the access is via CLASS CMS (which is the same as  $\ensuremath{\mathsf{RLIB}}\xspace$  ).

## File Serialisation

Files created by XEDIT and of filetype FORTRAN are serialised by default. The XEDIT command SET SERIAL OFF can be used to suppress the serialisation of Fortran files. This command can be included in a file called USERPROF XEDIT. XEDIT has its own profile file called PROFILE XEDIT and this will invoke a file called USERPROF XEDIT if

## Virtual machine size

The current default virtual machine size is 512K and the maximum is 1Mb.

## Machine environment

VM/SP with CMS in individual virtual machines is run on the 3081D computer; both FEM and CEM are currently on the 3081 running MVT, the BEM system runs native MVT on the 3032. The 360/195 computers have been removed from service.