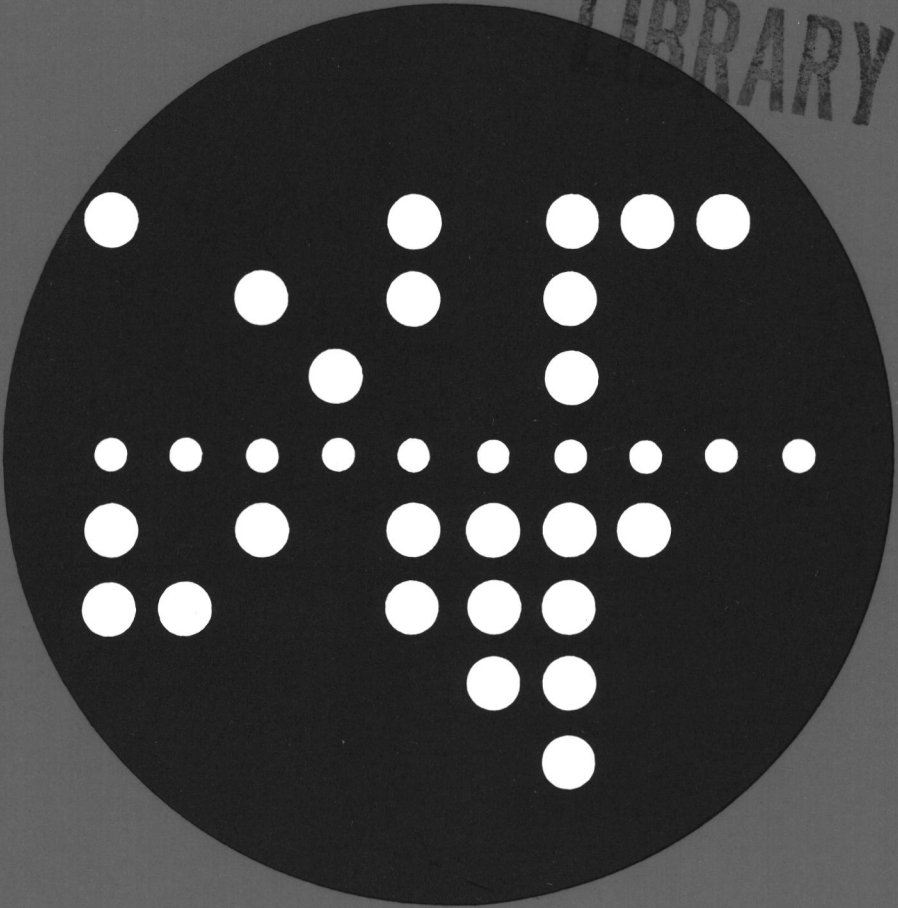


COMPUTING CENTRE NEWSLETTER

January 1981 - N. 47

LIBRARY



Commission of the European Communities



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EDITORIAL NOTE

The Computing Centre Newsletter is published monthly except for August and December.

It describes developments, modifications and specific topics in relation to the use of the computing installations of the Joint Research Centre, Ispra Establishment.

The aim of the Newsletter is to provide information of importance to the users of the computing installations, in a form which is both interesting and readable.

The Newsletter also includes articles which are of intellectual and educational value in order to keep the users informed of new advances in computer science topics.

The Editorial Board is composed as follows:

J. Pire.	Responsible Editor.
M. Dowell.	Technical Editor.

Administration and contact address:

Ms. A. Cambon (tel. 730)
Support to Computing
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21020-ISPRA (Varese)
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Neither the Commission of the European Communities nor any person acting on behalf of the Commission is responsible for the use which might be made of the information in this Newsletter.

INFORMATICS SUPPORT SECTOR

H. I. de Wolde

The Informatics Support Sector, one of the four sectors of the Informatics Division, has been established to provide an interface between the technical complexity of modern Informatics and the large community of computer users from other disciplines.

The basic means for improving the accessibility of Informatics are:

- * Education
- * Documentation
- * Information and guidance
- * Installation of basic systems, which may serve many applications
- * Offering basic, ready to use, software elements to facilitate programming
- * Standardization of procedures and methods

It is the task of the Informatics Support Sector to cover these fields in an attentive, economic and productive way.

This article gives a short outline of the organisational structure of the Sector and a summary of the activities within the framework of the above mentioned items.

Structure of the Sector

The following list gives a specification of the different actions.

However, it does not represent a distinct separations of the personnel actually involved. Most of the members of the Sector participate in more than one of the activities as mentioned in this article.

1. Support to Computing

This group is the most direct interface between the users and the Computing Centre. It offers:

- the Computing Support Library
- Information and documentation through the Newsletter and the Green Book issues
- Software Libraries
- Software systems for general use, in close collaboration with the Systems Sector
- Consulting Service
- Educational activities, in collaboration with E.F.I.S.

A rather separate area of involvement is Computer Graphics. The continuously increasing quantity and complexity of produced data requires sophisticated tools for the representation of the results.

2. Engineering Systems

Some powerful engineering packages are installed at the Computing Centre, (ICES-systems, NASTRAN) which are widely used by several research teams at the JRC. Maintenance and consulting is provided by the Sector.

The EIDA, (European ICES Distribution Agency) takes care of the distribution of the ICES systems in Europe.

3. Program Library

The Program Library takes care of the collecting and dissemination of programs and documentation. A sub-set of the most frequently used codes is maintained on-line for the direct use. The liaison towards outside institutes in relation to software exchange is a task of the EPDA, (European Program Distribution Agency).

EPDA maintains for example close contacts with the NEA library.

Presently the Program Library is in a phase of reconstruction to improve the offered services.

4. Database of program abstracts

A database of program abstracts is being set-up under the ADABAS system. The database will serve the scope of the research teams in search of specific programs for their particular needs.

The database will be connected to the EURONET under the name EUROCOPI Database, for use through the whole of Europe.

It is expected that this service will be operational by July 1981.

Present and Future

The group "Support to Computing" concentrates its efforts on the sustaining and promoting of software libraries, (NAG, IMSL, Graphics), and the standardization of procedures and methods, which may contribute to better software products and a higher productivity of the software authors.

Proposals for 1981, have been made to EFIS for important efforts in the field of Informatics education. Part of the planned lectures will be given by the members of the Sector.

Next to the monthly Newsletter, special issues, (Green Books), are in preparation on:

- Use of mathematical subroutine libraries
- Computer Graphics
- Librarian (2nd edition)
- The services of the Computing Centre

Of course, the daily support, (every morning from 11.30 to 12.30), will be continued by the members of the Sector.

Concerning the field of Computer Graphics, if the manpower situation allows for it, the coming year may show the introduction of full-colour graphics and an extension of the Intermediate Graphic File facilities. The graphic library will be extended by a series of very interesting high-level routines.

As far as the engineering support activity is concerned, recently the NASTRAN system has been installed. A separate article on this package will be published in a forthcoming Newsletter.

Presently, one of the most urgent tasks of the Program Library is the refreshing and improving of the program collection. Especially the CTE system, which is a sub-set of most frequently used programs in load module form, requires a serious overhaul. A consistent system of documentation, in parallel with the software products, is planned.

Concerning the Eurocopi Database, much of the available time is dedicated to make the database operational as soon as possible. It is expected that for the second half of 1981, the users may interrogate the system to find suitable programs for their particular problems.

Contacts

The clients who wish to make use of the services of the Informatics Support Sector, may phone number 787, for short and concise information.

More detailed discourses with the specialists of the Sector are restricted to the visiting hours: 11.30 - 12.30 daily.

Interested persons from outside the Centre are kindly asked to put forward their questions only in written form: by telex or letter.

The Computer Support Library (room 1871, building 36), is always accessible during working hours.

TEST PROCEDURE FOR TELEPROCESSING CONNECTIONS

F. Sorel

Note. This article is the text of a note from Mr. F. Sorel to the users of teleprocessing connections. The text of the note is given here in an english and an italian version. In this way we hope that at least one version will be useful to each terminal user.

This paper describes the sequence to follow in case of faulty teleprocessing connection.

- First check the switch position of your terminal and modem. The correct positions are:
 - . terminal : in "on-line"
 - . modem Racal: switch CH in position 1, switches ALB, X'T and DLB in position OFF
 - . modem Gamma: not in test
- Then phone n. 751 to check if the recorded message gives information about a temporary break-down of teleprocessing connections.

The following procedure depends upon the type of connected terminal.

- A) Terminals IBM 2741
 - 1) Set terminal in "local" and check if the terminal works correctly as typewriter.
 - 2) Phone n. 767 indicating result of test.
- B) Interactive terminals like Hazeltine, Tektronix, etc
 - 1) If the connected modem is Racal, set the switch DLB on. If the modem is Gamma, phone n. 370 or 767 asking to set your modem in the centre computer room in position "test" and wait to be contacted before going on.
 - 2) Type on your keyboard a letter; this letter should be displayed 2 times on your screen, e.g. type U and appears UU. Repeat this operation, possibly with the key "repeat" to fill at least one line.
 - 3) In case of erroneous answer, phone n. 370 indicating the number of connection line and result of test. In case of a correct answer, phone n. 767 indicating the number of connection line and type of malfunction encountered.
- C) Mini-computers and control units type Olivetti

For this category of teleprocessing connections no easy test is possible for the user; phone n. 767 or 370 indicating the number of connection line and result of test.

Please follow this procedure in order not to overload the few persons responsible for the maintenance of the teleprocessing network (100 terminals, 120 modems and 100 inputs Memorex).

PROCEDURA DI TEST PER COLLEGAMENTI AL CALCOLATORE CENTRALE

F. Sorel

Questa nota descrive la procedura da seguire in caso di malfunzionamento di un collegamento teleprocessing.

- Prima verificare che gli interruttori del vostro terminale e modem siano in posizione corretta:
 - . terminale : in "on-line"
 - . modem Racal: tasto CH su 1, tasti ALB, XMR e DLB su OFF
 - . modem Gamma: non in test
- Poi telefonare al 751 per accertarsi che nessun messaggio comunichi il non funzionamento temporaneo dei collegamenti teleprocessing.

La procedura seguente si differenzia secondo il tipo di terminale collegato.

A) Terminali IBM 2741

- 1) Mettere il terminale in "local" e verificare se funziona come macchina da scrivere.
- 2) Telefonare al 767 indicando l'esito del test in "local".

B) Terminali conversazionali tipo Hazeltine, Tektronix, ecc.

- 1) Se il modem collegato e' un Racal, telefonare al 370 e 767 chiedendo che il vostro modem in sala macchine sia messo in posizione "test" e aspettare di essere contattati prima di procedere.
- 2) Battere sulla tastiera del terminale una lettera; questa lettera dovra' apparire 2 volte sullo schermo, per esempio, battere U, appare UU. Ripetere questa operazione, eventualmente con l'aiuto del tasto "repeat", per riempire almeno una linea.
- 3) In caso di risposta non corretta telefonare al 370 indicando il numero linea e l'esito del test eseguito. Per una risposta corretta telefonare al 767 indicando il numero linea e l'esito del test eseguito.

C) Mini-computers e unita' di controllo tipo Olivetti

Per questa categoria non esiste un test facile per l'utente; telefonare al 767 o 370 indicando il numero linea e il tipo di malfunzionamento riscontrato.

Si chiede agli utenti di seguire questa procedura per non sovraccaricare le poche persone addette alla manutenzione della rete teleprocessing (100 terminali, 120 modems, 100 ingressi Memorex).

QED NOTES(4)

M. Dowell

Introduction

Following the publication of QED Notes(2), Newsletter No. 45, October 1980, many users have posed various editing questions in order to ascertain whether or not it was possible to use the FIELD QED subcommand (as described in QED Notes(2)) to solve their problems. In many of these cases the author has found that the problems may be solved more readily by using another of the QED editing extensions, the "replace field" RF subcommand. This subcommand may be used to replace the contents of a fixed length subfield of a record or of a sequence of records.

Full Specification of the RF Subcommand

RF $\left[\begin{array}{l} * \\ \text{line-1} \quad [\text{line-2}] \\ * \quad \quad \quad [\text{count}] \end{array} \right] \text{ position-1 position-2 replacement string}$

(for full details of the syntax notation see the IBM manual: TSO Command Language Reference (GC28-6732)).

Definition of Operands

line-1

Specifies the line, or the first of a range of lines, to be modified by the RF subcommand.

line-2

Specifies the last line of a range of lines to be modified.

*

Specifies that the first line to be modified is the line indicated by the current line pointer. (This is the default if no other line specification is given).

count

Specifies the number of lines to be modified. (This is used in conjunction with * and therefore the starting line is always that indicated by the current line pointer).

position-1

Specifies the character position number in the record of the first character in the field which is to be replaced. This operand is mandatory.

position-2

Specifies the character position number in the record of the last character of the field which is to be replaced. This operand is mandatory.

replacement string

Specifies the character string which is to replace the contents of the field defined by position-1 to position-2. The character string will be padded with blanks or truncated (on the right) in order to exactly replace the entire contents of the field. This operand is mandatory. The rules for delimiting the string are the same as for the normal EDIT (and QED) FIND subcommand.

Examples of the RF Subcommand

1. RF 12 20 /ABCDEFGH I/

Replaces positions 12 to 20 of the line indicated by the current line pointer by the string ABCDEFGH I.

2. RF 12 20 /ABC/

As for example 1 except that position 12 to 20 are replaced by ABC (ie the string ABC padded with 6 spaces to the right).

3. RF 12 20 /PQRSTUVWXYZ/

As for example 1 except that positions 12 to 20 are replaced by PQRSTUVWXYZ (ie string PQRSTUVWXYZ truncated (from the right) to 9 characters).

4. RF 20 12 20 /ABCDEFGH I/

As for example 1 above, except that the replacements performed on line 20 and not on the line indicated by the current line pointer.

5. RF 20 60 1 10 \$ \$

Replaces positions 1 to 10 of records numbered 20 to 60 by spaces. (Note the use of the \$ as delimiter).

6. RF * 10 25 27 /XYZ/

Replaces positions 25 to 27 of ten records (starting at the present record) with character string XYZ.

Use of the RF Subcommand

The RF command has many useful applications. The following example shows just one of the uses.

Given a data set as follows:

```
l
00010 A23TEST 01 0000001 A 0000003 M 0000004
00020 A45TEST 05 0000001 A 0000001 F 0000001
00030 A73TEST 01 0000002 A 0000001 M 0000004
00040 A33TEST 01 0000003 A 0000002 M 0000001
00050 477TEST 05 0000002 A 0000001 M 0000001
00060 A01TEST 03 0000001 A 0000002 M 0000001
END OF DATA
```

We wish to change all of the entries in the data field cols 22-28 from 0000001 to 0000002. However, we do not wish to change any of the other data fields containing 0000001. The changes are performed as follows:

```
rf 10 60 22 28 /0000002/
l
00010 A23TEST 01 0000001 A 0000002 M 0000004
00020 A45TEST 05 0000001 A 0000002 F 0000001
00030 A73TEST 01 0000002 A 0000002 M 0000004
00040 A33TEST 01 0000003 A 0000002 M 0000001
00050 477TEST 05 0000002 A 0000002 M 0000001
00060 A01TEST 03 0000001 A 0000002 M 0000001
END OF DATA
```

**STATISTICS OF COMPUTING INSTALLATION UTILIZATION
 REPORT OF COMPUTING INSTALLATION EXPLOITATION
 FOR THE MONTH OF NOVEMBER 1980.
 END OF DATA**

YEAR 1979 YEAR 1980

General

Number of working days	20 d	19 d
Work hours from 8.00 to 24.00 for	16.00h	16.00h
Duration of scheduled maintenance	21.17h	17.34h
Duration of unexpected maintenance	49.33h	12.84h(1)
Total maintenance time	70.50h	30.18h
Total exploitation time	249.50h	273.82h
CPU time in problem mode	152.10h	267.73h*

Batch Processing

Number of jobs	7046	7194
Number of cards input	1332500	797490
Number of lines printed	23484000	23313000
Number of cards punched	131600	90370
CPU time	131.82h	222.63h*
Number of I/O (Disk)	19679000	21049000
Number of I/O (Magnetic tape)	4524000	2933300

T.S.O

Number of LOGON's	3220	3955
Number of messages sent by terminals	182266	291000
Number of messages received by terminals	960975	1928670
CPU time	18.39h	42.65h*
Number of I/O (Disk)	2553000	3985600
Connect time	2020.61h	2953.67h

IMS

Total time service is available	157.10h	113.69h
CPU time	1.89h	2.45h*
Number of I/O (Disk)	493500	463000

* Real CPU has been multiplied by a factor of 2 to indicate the increased throughput of the Amdahl.

(1) Covering all the configuration.

**UTILIZATION OF COMPUTING CENTRE BY OBJECTIVES & APPROPRIATION
ACCOUNTS FOR THE MONTH OF NOVEMBER 1980.**

	AMDAHL 470/V7A equivalent time in hours
33001 Reactor Safety	239.64
33002 Plutonium Fuel and Actinide Research	0.01
33003 Safety of Nuclear Materials	9.54
33004 Fissile Materials Control and Management	14.75
33005 Super-SARA Test Programme SSTP	38.24
33011 Solar Energy	0.08
33012 Hydrogen Production, Energy Storage and Transport	0.31
33013 Thermonuclear Fusion Technology	43.34
33014 HIGH TEMPERATURE MATERIALS	1.53
33021 Protection of the Environment	19.41
33022 Remote Sensing from Space	4.94
33041 Informatics	42.76
33043 Support to the Community Bureau of References	2.35
33044 Training and Education	-
33046 Provision of Scientific and Technical Services	5.57
1.20.1 General Administration - JRC	66.71
1.20.2 General Services - Administration - Ispra	
1.20.3 General Services - Technical - Ispra	0.34
1.30.3 Central Workshop Ispra	0.88
1.40.2 ESSOR	2.23
TOTAL	492.63
1.94.0 Services to External Users	7.31
TOTAL	499.94

BATCH PROCESSING DISTRIBUTED BY REQUESTED CORE MEMORY SIZE

	100 k	200 k	300 k	400 k	600 k	800 k	1000 k	1200 k	1400 k	>1400 k
No. of jobs	2151	1712	1317	912	381	143	165	14	9	8
Elapsed time	66	201	195	240	83	64	102	3	14	2
CPU time	3.4	32.9	43.4	56.9	17.7	19.5	36.1	1.0	2.3	0.4
"Equiv" time	18	73	66	89	30	23	44	1	5	1
"Turn" time	0.5	1.3	4.3	2.4	2.2	2.3	2.4	3.2	4.2	5.0
I/O (disk)	1468	5468	3225	4338	1738	528	1068	77	341	35
I/O (tape)	1404	455	168	623	146	26	54	4	-	-

NOTE.

All times are in hours.

"Equiv" means equivalent.

"Turn" means turn around.

All I/O transfers are measured in 1000's.

PERCENTAGE OF JOBS FINISHED IN LESS THAN:

TIME	15mn	30mn	1hr	2hrs	4hrs	8hrs	1day	2day	3day	6day
%year 1979	21	33	46	60	74	88	98	100	100	100
%year 1980	33	48	63	77	88	97	100	100	100	100

For histogram of equivalent time

please see page 16.

**STATISTICS OF COMPUTING INSTALLATION UTILIZATION
 REPORT OF COMPUTING INSTALLATION EXPLOITATION
 FOR THE MONTH OF DECEMBER 1980.**

<u>General</u>	YEAR 1979	YEAR 1980
Number of working days	15 d	17 d
Work hours from 8.00 to 24.00 for	16.00h	16.00h
Duration of scheduled maintenance	13.68h	15.00h
Duration of unexpected maintenance	27.68h	8.84h(1)
Total maintenance time	41.36h	23.84h
Total exploitation time	198.64h	248.16h
CPU time in problem mode	118.08h	239.31h*

Batch Processing

Number of jobs	5199	6643
Number of cards input	868900	546900
Number of lines printed	18912000	20845000
Number of cards punched	109300	78430
CPU time	101.19h	199.30h*
Number of I/O (Disk)	16692000	17673000
Number of I/O (Magnetic tape)	4279000	4115000

T.S.O

Number of LOGON's	2303	3637
Number of messages sent by terminals	143734	249880
Number of messages received by terminals	794552	1714178
CPU time	14.99h	37.72h*
Number of I/O (Disk)	1650000	3607000
Connect time	1627.07h	2466.43h

IMS

Total time service is available	154.85h	86.78h
CPU time	1.90h	2.29h*
Number of I/O (Disk)	492000	412500

* Real CPU has been multiplied by a factor of 2 to indicate the increased throughput of the Amdahl.

(1) Covering all the configuration.

**UTILIZATION OF COMPUTING CENTRE BY OBJECTIVES & APPROPRIATION
ACCOUNTS FOR THE MONTH OF DECEMBER 1980.**

FMDAHL 470/V7A
equivalent time in hours

33001	Reactor Safety	201.92
33002	Plutonium Fuel and Actinide Research	-
33003	Safety of Nuclear Materials	7.19
33004	Fissile Materials Control and Management	11.92
33005	Super-SARA Test Programme SSTP	44.10
33011	Solar Energy	0.54
33012	Hydrogen Production, Energy Storage and Transport	0.12
33013	Thermonuclear Fusion Technology	30.25
33014	High Temperature Materials	1.00
33021	Protection of the Environment	16.43
33022	Remote Sensing from Space	3.76
33041	Informatics	40.88
33043	Support to the Community Bureau of References	1.62
33044	Training and Education	-
33046	Provision of Scientific and Technical Services	5.41
1.20.1	General Administration - JRC	67.72
1.20.2	General Services - Administration - Ispra	
1.20.3	General Services - Technical - Ispra	2.02
1.30.3	Central Workshop Ispra	1.31
1.40.2	ESSOR	3.16
	TOTAL	439.35
1.94.0	Services to External Users	4.88
	TOTAL	444.23

BATCH PROCESSING DISTRIBUTED BY REQUESTED CORE MEMORY SIZE

	100 k	200 k	300 k	400 k	600 k	800 k	1000 k	1200 k	1400 k	>1400 k
No. of jobs	2048	1627	1127	793	425	204	37	23	5	26
Elapsed time	69	151	189	155	180	91	15	12	9	4
CPU time	2.3	23.1	42.5	28.2	56.9	28.3	4.2	3.8	2.7	1.0
"Equiv" time	21	47	67	57	71	34	6	4	3	2
"Turn" time	0.5	1.4	3.0	3.2	3.1	3.5	2.3	1.6	4.3	8.2
I/O (disk)	1792	3130	3345	3773	1879	750	222	57	107	192
I/O (tape)	1943	594	380	664	421	52	24	1	-	-

NOTE.

All times are in hours.

"Equiv" means equivalent.

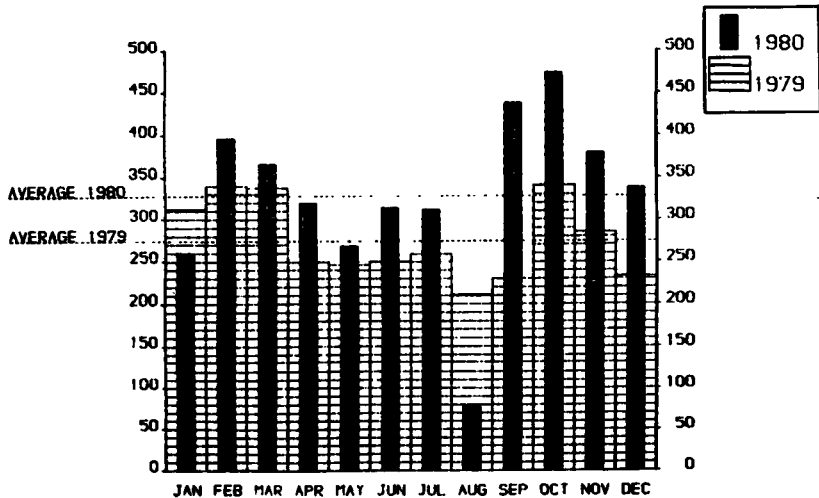
"Turn" means turn around.

All I/O transfers are measured in 1000's.

PERCENTAGE OF JOBS FINISHED IN LESS THAN:

TIME	15mn	30mn	1hr	2hrs	4hrs	8hrs	1day	2day	3day	6day
%year 1979	21	33	45	58	73	86	97	100	100	100
%year 1980	31	47	60	73	86	95	99	100	100	100

HISTOGRAM OF TOTAL EQUIVALENT TIME(HRS)



Total for 1980 was = 3936 hours

Total for 1979 was = 3292 hours

REFERENCES TO THE PERSONNEL/FUNCTIONS OF THE COMPUTING CENTRE

<u>Manager of The Computing Centre</u>	J.Pire		
Responsible for User Registration	Ms. G.Rams		
<u>Operations Sector</u>			
Responsible for the Computer Room	A.Binda-Rossetti		
Substituted in case of absence by:			
Responsible for Peripherals	G.Nocera		
<u>Systems Software Sector</u>			
Responsible for the sector	D.König		
Substituted in case of absence by:	P.A.Moinil		
Responsible for TSO Registration	C.Daolio		
		Room	Tele.
<u>Informatics Support Sector</u>			
Responsible for the Sector	(f.f.) H.de Wolde	1883	787
Secretary	Mrs. G.Hudry	1873	787
Responsible for User Support	M.Dowell	1886	701
General Inf./Support Library	Mrs. A.Cambon	1871	730
<u>Advisory Service/List of Consultants(See Note 1)</u>		1870	730
A.Inzaghi	H.I. de Wolde		
	A.A.Pollicini		
R.Meelhuysen	M.Dowell		

NOTE 1. The advisory service is available in the same room as the Computing Support Library (room 1870). Exact details of the advisory service times for a specific week can be found at the head of any output listing (for that week).

Any informatics problem may be raised. However, the service is not designed to help users with problems which are their sole responsibility. For example, debugging of the logic of programs and requests for information which can easily be retrieved from available documentation.

If necessary, other competent personnel from the informatics division may be contacted by the consultant but not directly by the users.

The users should only contact the person who is the consultant for that specific day and only during the specified hours.

Outside the specified hours general information may be requested from Mrs. A. Cambon in the Computing Support Library.

HOW TO OBTAIN COMPUTING CENTRE DOCUMENTATION

Persons interested in receiving copies of the Computing Centre "green books" or in receiving regularly the "Computing Centre Newsletter" are requested to complete the appropriate part of the following form and send it to :-

Ms. A. Cambon
Support To Computing
Building 36
Tel. 730.

Indicate with a (✓) which options are required.

Please add my name to Newsletter mailing list ()

Please send me copies of the following "green books":

JRC-TSO Primer ()

GRAPHIT ()

Towards a New Programming Style ()

LIBRARIAN ()

NAME

ADDRESS

.....

.....

TELEPHONE

