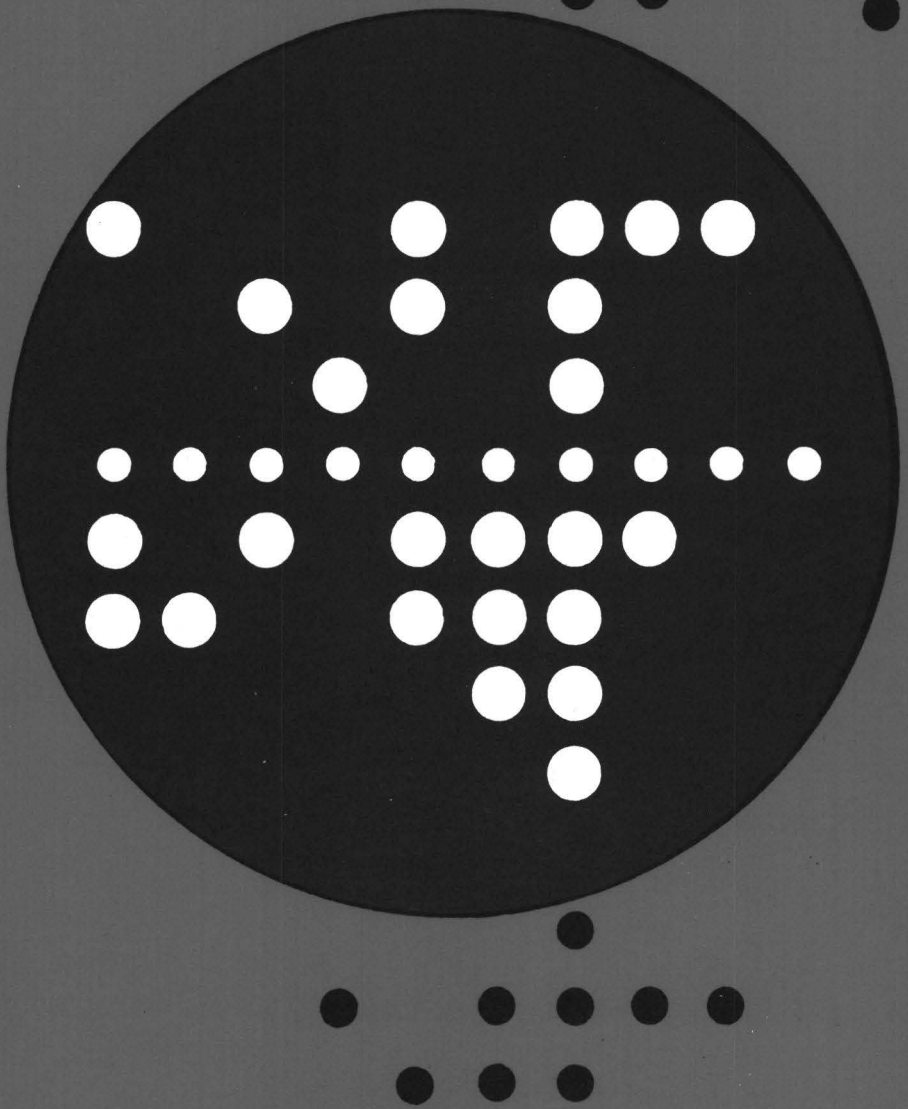
Commission of the European Communities

Joint Research Centre - Ispra

Computing Centre Newsletter



January 1978 No 17

Contents

Note of the Editor

The present Newsletter is published monthly except for August and December.

The Newsletter includes:

- Developments, changes, uses of installations
- Announcements, news and abstracts on initiatives and accomplishments.

The Editor thanks in advance those who want to contribute to the Newsletter by sending articles in English or French to one of the following persons of the Editorial Board.

Note de la Rédaction

Le présent Bulletin est publié mensuellement excepté durant les mois d'août et décembre.

Le Bulletin traite des:

- Développements, changements et emploi des des installations
- Avis, nouvelles et résumés concernant les initiatives et les réalisations.

La Rédaction remercie d'avance ceux qui veulent bien contribuer au Bulletin en envoyant des articles en anglais ou français à l'un des membres du Comité de Rédaction.

Editorial Board / Comité de Rédaction

Computing Centre References

		Room	Tel.
Manager	J. Pire	1816	732
Adjoined	G. Gaggero	1874	787
Computer Room	P. Tomba	1857	797
Adjoined	A. Binda	1857	797
Peripherals	G. Nocera	1825	767
System Group	D. Koenig	1839	742
Adjoined	P.A. Moinil	1841	704
Informatics Support	G. Gaggero	1874	787
o General Information	G. Hudry	1873	787
o Program Information Service	G. Gaggero	1874	787
Adjoined	S. Leo Menardi	1884	721
o Graphics and Support to Users	H.I. de Wolde	1890	753
Adjoined	A. Pollicini	1882	743
Application Packages	A. Inzaghi	1887	755
Programming Languages	C. van den Muyzenberg	1848	781

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Support to Computing

Herman I. de Wolde

Frequently there are complaints on the daily assistance to the users of the computing installations. We have to admit that in many cases these complaints are justified but the resources to improve the situation are scarcely available.

The existing crisis towards the support to users is mainly caused by the 3 to 5 fold increase of computing power in recent years, with an accompanying increase of complexity according to some quadratic function, while the available man-power remained has been reduced.

This article is planned as a short description of the services which can still be offered by the limited resources as presently are available.

First of all, it must be well understood that the System Group, headed by Mr. Koenig, has the task to install, debug and maintain the basic systems for the computer installations. Also here the number of people is in fact too small for the present configuration and the nature of the problems is such that no users interference can be allowed.

The Group "Support to Computing", as part of the sector "Informatics Support", headed by Mr. Gaggero, was planned to be the interface between the Computing Centre and the users, with the emphasis on the preventive support to technical and scientific programming. A series of topics were chosen as the principal means to render a more economic use of programming power and to obtain improved software products.

The following list is composed without any reference to importancy:

- Software tools to facilitate programming (Support systems)
- Software packages for common applications
- Educational and informative actions
- The writing, editing and publication of practical guides
- Direct support
- The supplying of sound documentation.

The members of the group should have to share their experiences to guarantee a continuous support; in case of a temporary absence of a member, a replacement must be present for urgent cases.

The practical execution of this plan has been hampered seriously by the lack of man-power.

The group "Support to Computing" exists of the following persons, some of which have also other tasks as is specified in the table.

	Support to Computing	Other Activities
Mrs. Cambon	100%	–
Mr. van den Muyzenberg	100%	–
Mr. Inzaghi	70%	30%
Mr. Pollicini	20%	80%
Mr. de Wolde	20%	80%

Additionally, Mr. Pigni will dedicate 20% of his time to the monthly publication of the Newsletter, Green Books and the setting-up of the Computing Support Library. He is not available for daily support.

The total available man-power for the daily support to users is thus 3.1 man/year per year. This means that only a very limited programme may be planned for 1978.

The following paragraphs define the tasks of each member of the unit. The users are kindly asked to contact these people only when the occuring problem is related to these tasks.

Mrs. Cambon is charged with the daily maintenance of the Computing Support Library.
Secondly, she is taking care of the technical aspects of the Newsletter, the series of Green Books and other publications. The users may contact Mrs. Cambon for manuals and other documentation.

Mr. van den Muyzenberg is available for direct support; problems concerning programming languages, Job Control Language and error detection, with the restriction that program debugging remains the task of the programmer. Presently he is studying the TSO facilities to offer a support in this field also.

Mr. Inzaghi is in charge of the maintenance of the integrated engineering packages.

Secondly he will dedicate time to the reorganization of the mathematical subroutine libraries.

Mr. Pollicini will participate for 20% in the activities of the group. His attention will be directed to the COREA system and the use of the graphic facilities.

Mr. de Wolde may be consulted on general problems concerning the group and its activities, but not for direct support.

As we are forced to be pragmatic, it must be understood that problems, not belonging to the mentioned tasks of the members of the group, cannot be taken into consideration. Also, through the lack of man-power, almost no back-up facility is available; if one member of the unit is absent, his obligations normally cannot be taken over by another participant.

So far I have painted the picture rather black, purposely, because we have to limit the interference of the single user with a particular problem, in favour of general tasks which may serve a large audience.
For example, the arrangement of the Computing Support Library will solve a series of problems. Here the documentation concerning the computer installations will be centralized. All current manuals and general product descriptions will be disponible for consultation in-place. A photocopier is available to the users for a small number of copies. The most important manuals will be present in sufficient copies for general distribution.

Presently we are also trying to arrange a series of repetitive short lectures on TSO, with increasing specialization levels. Also for the graphic applications, informative seminars will be organized during the first half of 1978.

As a last remark I have to state that an improvement of the services at the coming years is not very probable.

Postscript

From the first of February Mr. van den Muyzenberg has been charged with a new task outside the division.
The remaining manpower for the "Support to Computing" is thus reduced to 2.1 man/year.
The Direct Support action is thus closed (except for the Computing Support Library), as no replacement for Mr. van den Muyzenberg is available.

Note to the TSO and PSO/FILEDI Users

D. Koenig

TSO Implementation

According to the planning for the TSO introduction presented to the users in the TSO-information meeting on Sptember 26th, the starting date for phase III of the system cycle (production system) should have been January 2nd. Due to organizational difficulties — the manpower available for the TSO implementation has been reduced — and partly due to technical difficulties, this date will be shifted at least two months. The start of the TSO production phase will be announced in a third "TSO Information Meeting" which will be combined with a seminar on the installation dependent features of the TSO system.

At present 16 terminals are connected to TSO and two external telephone numbers are available to establish connections with the system from outside the centre. There are furthermore 13 requests for new connections. In this context it should be emphasized again that, in order to avoid misunderstandings, only written requests for the connection of terminals can be considered.

TSO Usage

Prologue

Even if the TSO-system is declared to be technically in the production status, it should be clear to every user that no support is available for the system because of lack of manpower. This means that if a user has a question concerning the use of the system, he has unfortunately only the possibility to ask more experienced collegues for assistance or study the corresponding manuals. This situation was not planned for, but is the result of missing manpower in the Informatics Division and some unexpected changes. All TSO users (and prospective users) are kindly asked to accept that the system group cannot (and will not) answer user questions concerning TSO because only one person is working on TSO and this is the bare minimum to keep the system (provisionally) running.

End Prologue

At present some 32 user-identifications are given to different TSO users which produce approximately 60 TSO sessions per day. Two TSO terminals, one situated in the terminal room next to the machine room, the other in the corridor in front of the machine room, are available for public use. The other terminals are dedicated to a number of users.

In the meantime 30 copies of the TSO Terminal User's Guide and the TSO Command Laguage Reference manuals arrived and are distributed by the "Computing Support Library".

It is furthermore planned to have for some time repetitive courses for TSO on different levels of sophistication. This should give every TSO user the opportunity to obtain an intensive training adapted to his experience with the system. These courses however cannot be expected to take place before May 1978. In addition to this it is planned to prepare a detailed documentation of all installation dependent system features. Finally the feasibility of having on our system a "TSO teaching system" with the name "LEARNTSO" will be studied. However results cannot be expected before the end of the year.

Until March 31st the usage of TSO will be accounted for according the old charging scheme which is also valid for terminals connected under TP. Thereafter a charging scheme based on CPU-usage and the time a user occupies a terminal will be introduced.

Transfer of PSQ-Files

In the third "TSO information meeting" the users will receive detailed explanations on how to transfer data sets from the PSQ system to TSO. It is planned that four weeks after this meeting the PSQ/FILEDI service will be discountinued. Users presently working with the FILEDI system are encouraged to explore the TSO editing facilities before the date of the information meeting in order to avoid a forced switch over from one system to the other. The switching of terminals from the TP-system to the TSO system can be done without a long delay.

Statistics of computing installation utlization

Report of computing installation exploitation for the month of November 1977

	YEAR 1977	YEAR 1976
Number of working days	20 d	20 d
Work hours from 8.00 to 24.00 for	16.00 h	16.00 h
Duration of scheduled maintenance	22.14 h	26.58 h
Duration of unexpected maintenance	11.23 h	14.59 h
Total maintenance time	33.37 h	41.17 h
Total exploitation time	286.83 h	278.83 h
CPU time in problem mode	157.01 h	103.52 h
Conversational Systems:		
CPU time	2.90 h	2.09 h
I/O number	945,000	328,000
Equivalent time	9.50 h	4.30 h
Elapsed time	278.00 h	117.00 h
Batch processing:		
Number of jobs	9,865	8,555
Number of cards read	2,901,000	2,672,000
Number of cards punched	216,000	152,000
Number of lines printed	29,195,000	23,445,000
Number of pages printed	662,000	528,000

BATCH PROCESSING DISTRIBUTION BY REQUESTED CORE MEMORY SIZE

	100	200	300	400	600	800	1000	1400	total
Number of jobs	2488	3152	1583	1157	252	39	76	11	8758
Elapsed time (hrs)	65	208	188	219	80	24	14	1.5	799
CPU time (hrs)	5	36	32	37	23	8	3	0.5	144
Equivalent time (hrs)	19	62	67	84	33	11	8	0.5	284
Turn around time (hrs)	0.8	1.9	3.5	4.8	3.9	7.2	3.9	5.5	2.4

PERCENTAGE OF JOBS FINISHED IN LESS THAN

TIME	15'	30'	1^h	2^h	4^h	8^h	1^D	2^D	3^D	6^D
% year 1976	38	55	72	86	96	99	99	99	99	100
% year 1977	26	39	54	70	87	96	99	99	99	100

Utilisation of computer center by the objectives and appropriation accounts for the month of November 1977

		IBM 370/165 equivalent time in hours
1.20.2	General Services - Administration - Ispra	38.95
1.20.3	General Services - Technical - Ispra	0.69
1.30.4	L.M.A.	–
1.90.0	ESSOR	14.06
1.92.0	Support to the Commission	3.37
2.10.1	Reactor Safety	142.81
2.10.2	Plutonium Fuel and Actinide Research	1.32
2.10.3	Nuclear Materials	2.10
2.20.1	Solar Energy	0.65
2.20.2	Hydrogen	–
2.20.4	Design Studies on Thermonuclear Fusion	4.53
2.30.0	Environment and Resources	26.23
2.40.0	METRE	3.37
2.50.1	Data Processing	45.14
2.50.3	Safeguards	1.42
	TOTAL	284.64
1.94.0	Services to External Users	20.78
	TOTAL	**305.42**

Statistics of computing installation utlization

Report of computing installation exploitation for the month of December 1977

	YEAR 1977	YEAR 1976
Number of working days	17 d	16 d
Work hours from 8.00 to 24.00 for	16.00 h	16.00 h
Duration of scheduled maintenance	18.50 h	15.33 h
Duration of unexpected maintenance	8.16 h	2.84 h
Total maintenance time	26.66 h	18.17 h
Total exploitation time	245.34 h	237.83 h
CPU time in problem mode	98.41 h	82.71 h
Conversational Systems:		
CPU time	2.8	1.8
I/O number	823,000	226,000
Equivalent time	8.6	3.4
Elapsed time	280	107
Batch processing:		
Number of jobs	7,045	6,577
Number of cards read	2,012,000	2,233,000
Number of cards punched	129,000	111,000
Number of lines printed	22,892,000	18,842,000
Number of pages printed	494,000	404,000

BATCH PROCESSING DISTRIBUTION BY REQUESTED CORE MEMORY SIZE

	100	200	300	400	600	800	1000	1400	total
Number of jobs	1819	2300	1311	1066	209	48	39	–	6792
Elapsed time (hrs)	42	145	136	163	42	11	14	–	553
CPU time (hrs)	2.6	25	23	29	9	3	4.2	–	96
Equivalent time (hrs)	14	51	55	66	22	6	8	–	222
Turn around time (hrs)	0.6	1.0	1.6	1.9	2.1	2.3	2.2	–	1.2

PERCENTAGE OF JOBS FINISHED IN LESS THAN

TIME	15'	30'	1h	2h	4h	8h	1D	2D	3D	6D
% year 1976	46	67	82	93	98	99	99	100		
% year 1977	38	58	74	86	94	98	99	99	100	

Utilisation of computer center by the objectives and appropriation accounts for the month of December 1977

		IBM 370/165 equivalent time in hours
1.20.2	General Services - Administration - Ispra	33.50
1.20.3	General Services - Technical - Ispra	1.22
1.30.4	L.M.A.	–
1.90.0	ESSOR	10.44
1.92.0	Support to the Commission	0.67
2.10.1	Reactor Safety	82.14
2.10.2	Plutonium Fuel and Actinide Research	1.96
2.10.3	Nuclear Materials	1.46
2.20.1	Solar Energy	0.48
2.20.2	Hydrogen	–
2.20.4	Design Studies on Thermonuclear Fusion	2.76
2.30.0	Environment and Resources	16.17
2.40.0	METRE	3.24
2.50.1	Data Processing	23.98
2.50.3	Safeguards	0.95
	TOTAL	178.97
1.94.0	Services to External Users	20.25
	TOTAL	199.22

EQUIVALENT TIME TABLE FOR ALL JOBS OF THE GENERAL SERVICES - Monthly and Cumulative Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
Year 1976	84	82	101	77	57	64	73	54	61	59	36	46
accumulation	84	166	267	344	401	465	538	592	653	712	748	794
Year 1977	44	74	78	32	26	36	27	25	27	31	40	35
accumulation	44	118	196	228	254	290	317	342	369	400	440	475

EQUIVALENT TIME TABLE FOR THE JOBS OF ALL THE OBJECTIVES AND GENERAL SERVICES - Monthly and Cumulative Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
Year 1976	206	237	270	241	229	248	249	223	233	244	159	150
accumulation	206	443	713	954	1183	1431	1680	1903	2136	2380	2539	1689
Year 1977	135	218	312	193	180	269	244	196	277	276	285	179
accumulation	135	353	665	858	1038	1307	1551	1747	2024	2300	2585	2764

EQUIVALENT TIME TABLE FOR THE JOBS OF THE EXTERNAL USERS - Monthly and Cumulative Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
Year 1976	18	19	28	16	25	32	14	11	27	31	29	12
accumulation	18	37	65	81	106	138	152	163	190	221	250	262
Year 1977	13	14	18	16	13	22	19	18	26	26	21	21
accumulation	13	27	45	61	74	96	115	133	159	185	206	226

EQUIVALENT TIME TABLE FOR ALL JOBS OF ALL USERS - Monthly and Cumulative Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
Year 1976	233	271	313	280	277	281	260	245	273	287	206	172
accumulation	233	504	817	1097	1374	1655	1915	2160	2433	2720	1926	3098
Year 1977	158	241	314	242	202	294	266	217	299	299	318	235
accumulation	158	399	713	955	1157	1451	1717	1934	2233	2532	2850	3085

USERS' GROUP

Minutes of the 1st Meeting Computer Centre – Users' Group
November 23, 1977

Participants:

Computer centre:	*Messrs. Daolio, de Wolde, König, Pire*
Users' group present:	*Mrs. Airola (for Mr. Biggio)* *Messrs. Da Rin (for Mrs. Actis-Dato), Faini, Fangmeyer, Haenen, Halleux, Knöppel, Kolar, Powel (for Mr. Town)*

Main Frame (IBM 370/165)

No further development (hardware) of the actual system is foreseen. In the future the discussion will be directed more and more towards the problem of the replacement of the actual mainframe. The consequences for the users can be heavy, even if the C.C. tries to limit them. In any case **the users will be responsible for the conversion work of their programs.**

A possible future (hypothetical) development could be:

- installation of a second compatible computer with half the power of the present one. All programs difficult to convert could then be implemented on this new machine (mainly administration)
- then after a short time of parallel functioning the old machine could be replaced by a new one of a similar "power" of the present one.

Both computers would be of course connected to the internal network. (The first one mainly for interactive work, the second one mainly for RJE and editing work).

Internal Network

The development of the network starts July 1st, 1978. In January two nodal computers for the network will be delivered (computer: SOLAR, 192 K words, 16 bits a word). One computer is reserved for EIN, the second will be used for the internal network development. Late 1978 a third computer will be installed (network development). Delays due to the constructor are possible (orders are higher than production capabilities).

If funds are available a fourth computer will be ordered end 1978. This computer should be installed at some place within the centre far away from CETIS. It will be a RJE station of the network.

RJE-Station (self service)

The second nodal computer will be equipped with a card reader, line printers (600 lpm and 400 cpm) and videos and will be available to the users for **self-service.** (Submission of jobs, printout may be directed to the line printers, etc.).

Terminal-Room

A terminal room will be installed at building 36. There the users will have a variety of terminals (videos) at their disposal. (Videos for APL, BASIC, graphic terminal, curve-follower for digitalizing curves).

Terminals

A video terminal for TSO is recommended:

HAZELTINE 1500 or HAZELTINE 1520

This video needs 2 modems, which are presently constructed by the Electronics Division but which are also available on the market (GAMMA series: for further information please contact the Electronics Division).

TSO

Availability

From 1.1.1978 TSO will be available daily (except monday morning) from

8.30 – 12.30

14.00 – 19.30*

Wednesday and Friday TSO will be closed from

16.00 – 17.30 (EIN working session)

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* ***After the working hours = after 18.00, TSO will be available up to 19.30 as long as one user is working with it. When there are no TSO-users any more TSO will be closed also before 19.30.***

Development (planning)

In this moment 10 terminals are working under TSO with approximately 30 users. There havè been some difficulties (blocking of terminals, waiting time) which have been overcome. The general development will be:

- problem of blocking terminals
- interactive LIBRARIAN (has already been ordered, documents are available at the office of Mrs. Cambon).
- interactive graphic package TEKTRONIX
- interactive graphic package GINO-F
- terminals if a free telephone line is available can be connected immediately in the limits of the available ports
- new procedures have been written to permit compatibility of TSO with HASP
- two telephone lines will probably be made available to external users (starting January)
- Cobol prompter will soon be introduced
- if in the future more effcient editing capabilities are required a special software will be purchased and implemented under TSO.

Proposed Time Schedule PSQ and TP

- PSQ out of work 1.3.1978
  (no PSQ-files anymore)
- TP out of work middle 1978.

Graphics

Beginning next year

1 Gould printer/plotter
1 Benson plotter

will be delivered.
They will be available for graphic-work in April 1978.
In this field there are two main objectives:

- unifying of plot software: "Interfaces" will be programmed which will allow an easy handling of the various devices
- implement and interactive GINO-F plot package for engineering problems (hidden line removal is not available yet).

At long term, creation of one new (and better) package for all applications.
After installation of the Benson and Gould plotter the Calcomp will be completely revised.

For applications of the COM system, it is proposed to rediscuss the problem between the interested people due to the failure of the previous solution (processing in Milano).

Disk Reservation

- The users are asked to reserve only the space on disk which they really need. Space not needed anymore should be given free. (If there is no better discipline, we can be forced to introduce a very rigid procedure).
- The computer center will remind the users of the expiring date of their data sets on disk but the necessary program must still be written.

Daily Problems

- The chairs in the corridor of building 36 which "diffused" away, will be replaced.
- Manuals
  The TSO manuals will be available in the near future. All manuals of IBM and the manuals of the software systems implemented at building 36 can be consulted in the office of Mrs. Cambon (left side, connection bridge of building 36). There is also the possibility to make some photocopies. Manuals of current use will be distributed among the users on request.
- No light above the card punch will be installed, because with the increasing use of videos and TSO, the card punch will become obsolete.

Compress Your PDS

According to a, rather superficial, check on the private partitioned datasets, it seems that many programmers are not very careful with the disk space utilization.
If you are executing regular updates of your private libraries or other partitioned dataset, please do remember to compress the datasets.

The procedure is very simple:

```
//    EXEC COMPRESS,DSN='dsname',VOL=voln,UNI=DISK
```

in which:

dsname is the dataset name (don't forget the apostrophes)
voln is the volume name (without apostrophes)

The space on scratch disk is automatically set to (CYL,(2,1)) which allows you a maximum of 17 cyclinders.

In case of a very large dataset you may augment the space through the parameters in the EXEC statement SP1 (primary space) and SP2(secondary space).

For more utility descriptions order the related Installation Note by the job:

```
//    EXEC LIHNO,MEMB=UTIL
```

The Newsletter is available at:	*Des exemplaires du Bulletin sont disponibles chez:*
Mrs. A. Cambon **Support to Computing** **Bldg. 36 - Tel. 730**	**Mme A. Cambon** **Support to Computing** **Bât. 36 - Tel. 730**

Les personnes intéressées et désireuses de recevoir régulièrement "Computing Centre Newsletter" sont priées de remplir le bulletin suivant et de l'envoyer à

Mme A. Cambon
Support to Computing
Bât. 36, Tel. 730

Nom .....

Adresse .....

.....

Tel. .....

The persons interested in receiving regularly the "Computing Centre Newsletter" are requested to fill out the following form and to send it to:

Mrs. A. Cambon
Support to Computing
Building 36, Tel. 730

Nom .....

Address .....

.....

Tel. .....