

**Report on second meeting of  
member state computing  
representatives  
14-16 October 1981**

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November 1981

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European Centre for Medium-Range Weather Forecasts  
Europäisches Zentrum für mittelfristige Wettervorhersage  
Centre européen pour les prévisions météorologiques à moyen

## INTRODUCTION

The second meeting of Member State Computing Representatives was held at the Centre on 14-16 October. Twelve Member States were represented. Annex 1 lists the attendees, annex 2 the programme for the meeting.

The meeting was primarily designed to bring everyone up to date with computer activities at the Centre over the past 12 months, and immediate plans and changes for the coming 12 months. In addition each Representative explained briefly their recent and planned activities regarding the Centre, especially the status of their link to the Centre, and projects which are (or will be) using the Centre's computer facilities.

Last year's meeting also included educational sessions to ensure everyone was at the same level of knowledge regarding the Centre's activities, and also some general interest sessions where the Centre reported on specific investigations it had carried out recently which might be of interest to Member States, e.g. future mass storage systems, commercially available graphics hardware etc. This year it was felt unnecessary to run further educational sessions, however two general interest sessions were included, namely initial comparisons of the Cray-1 and Cyber 205 computers. Finally the Centre also talked about high speed local networks in general terms, as the Centre is about to begin a detailed study of such networks with a view to acquiring one within the next 2-3 years.

The overall reaction of Representatives to this meeting was very favourable, not only the meeting itself being useful and informative, but it also allowed personal contact between Representatives themselves, and between the Representatives and Centre staff. Such personal contacts are considered vital to the smooth running of ECMWF's service to remote users. Opinion was split, however, as to whether future meetings should be annual, or every 2 years. As a compromise it was suggested why not have 2 meetings every 3 years!

Geerd Hoffmann reported on the past year's performance, commenting in particular on the reliability and stability shown by the main machines. For example, the daily operational forecast during the past 12 months has finished within 1 hour of its designated time on 9 days out of every 10. He also detailed the main hardware and software changes e.g. the Cray disc upgrade, doubling of the NFEP hardware etc.

Some changes are taking place in the Division's management and personnel structure due to the fact that the telecommunications project is nearing completion, while looking to the future we will need effort to investigate high speed local networks and mass storage systems. Peter Gray will head a "Communications and Graphics" Section which covers the above mentioned areas, plus graphics. He will have a staff of 6, 3 coming from existing staff and 3 currently being recruited. Finally an outline was given of the changes to come in the next 12 months in the facilities provided. The main item will be the installation, acceptance and introducing into service of the second Cyber (Cyber 730E). The hardware arrives in November, and it is hoped to offer an initial service sometime in the first quarter of 1982.

In this session each Representative took 5 minutes to bring everyone up to date on their current status, connection (plans) to ECMWF and projects being run at the Centre.

Denmark, P. Henning

- 2400 baud line, with RC3600, providing full facilities;
- off-line magnetic tape transport to main frame RC8000;
- takes 1½ hours to receive products, then plotted on a CALCOMP;
- projects underway or planned include:
  - . ultra long waves (Copenhagen University)
  - . limited area modelling
  - . transport of air pollutants (National Agency for Protection of the Environment)
  - . data extraction from archives for synoptic climatology.

Spain, M. Hortal

- low speed line to be replaced by medium speed one by March 1982
- current telecommunications handled by IBM System 7. To be replaced within 6 months by Cyber 18/20.
- off line connection from System 7 to an IBM 360/40 main frame via paper tape;
- projects include:
  - . data retrieval from ECMWF archives
  - . model development for limited area, based on ECMWF limited area model but with different dynamics;
  - . adapting ECMWF's quality control program for their IBM 360/40.

France, L. Jouaillec

- medium speed line operational since January, connects via CDC 2550 into their Cyber 175 mainframe;
- enhancing their mainframe capacity shortly with a Cyber 730E;
- RJE to ECMWF currently handling some 5 to 10 jobs per day, on such projects as:
  - . convection studies
  - . statistical studies of ECMWF forecasts
  - . model dynamical development

Greece, G. Sakellarides

- 100 baud low speed line terminates in a Cyber 18/20, another Cyber 18/20 is used for processing and backup to the first machine;
- Centre products are post processed and then plotted on a CALCOMP 960;
- medium speed line due Summer 1982.

Ireland, D. Murphy

- 2400 baud line in operation since March, terminated by 2 x PDP 11/40's;
- Centre products transferred to mainframe DEC 2050 by tape, there they are plotted (2 x CALCOMP 960's) and used as boundary values for a limited area model plus first guess for analysis;
- RJE and interactive query facilities not yet available, plan to have these by November;
- planned projects include:
  - . baroclinic instability of planetary waves
  - . historic runs of forecast model to generate statistics

Italy, G. de Florio

- 100 baud line terminates in their IBM System 7 telecommunications computer. This computer also handles the GTS link;
- Centre products are transferred to their IBM 370 mainframe where a databank is being built up, and statistical post processing is done to make 4-5 day forecasts;
- as no RJE link is available Italian users visit ECMWF to use the Centre's computer facilities;
- plan is to acquire a general purpose telecommunications system to handle various speed lines, including a medium speed line to ECMWF.

Netherlands, D. Folkers

- medium speed line under test now, terminates in a Burroughs B800 machine;
- B800 will be used for job preparation for ECMWF, via an interactive editor, RJE facility to ECMWF expected by January 1982;
- mainframe is a Burroughs B6800;
- network/telecommunications project has involved 2 people since April, and will provide message routing and formatting, access control, recovery, network control.

Austria, G. Kaindl

- medium speed line operational since September, terminating in a CDC 2550;
- mainframe is a Cyber 171 (131 Kwords, 10pps) running under NOS 1.4 (level 531);
- software for their CDC link to ECMWF came from France, to whom the Austrians give their appreciation and thanks.

- ECMWF products are used to plot maps, to compare with satellite pictures, and also to compare with forecasts from their own forecasters.

Switzerland, G. Siegwart

- ECMWF products received on a 2400 baud line from Offenbach;
- comparisons are being done between forecasts from ECMWF and those from DWD;
- all 1982 computer allocation for Switzerland will be given to the International Alpex Data Centre.

Finland, T. Hopeakoski

- medium speed line operational since May, terminates in 2 x Cyber 18/20 machines;
- mainframe is a Cyber 720 (131 Kwords) running under NOS;
- software for link to ECMWF is again that provided by France, this software has proved very reliable;
- graphics via 2 x CALCOMP 960's interfaced to a General Automation GA-16 mini;
- main project is the WMO Numerical Weather Prediction inter-comparison.

Sweden, A. Törnqvall

- an RC 3600 handles both a medium speed line to ECMWF, and a link to their Univac 1100/21 mainframe;
- job preparation is done using Univac terminals, including one at Stockholm University;
- Source code is usually kept on their Univac, with binaries only being stored at ECMWF. In their experience CDC's UPDATE is a clumsy product compared to Univac's products.

- trials are being run of ECMWF's ROUTEDF utility to transmit binary files from ECMWF for processing on their Univac. A locally written utility converts data and file format.
- current projects at ECMWF include:
  - . cloud prediction studies
  - . initialisation methods for humidity and clouds
  - . 2D boundary layer model (this model is 40 x faster on the Cray than their Univac)
  - . 3D circulation model for lakes and coastal areas
- planned projects are:
  - . 3D boundary layer model
  - . limited area model statistical interpretation

UK, A. Dickinson

- ECMWF's medium speed line is terminated in their telecommunication machines. No RJE facility is available, UK users visit the Centre via the UK Met. Office College.
- main frames are an IBM 360/195 and a Cyber 205.
- projects at ECMWF include:
  - . development of their new operational model (will provide 5 day forecasts)
  - . general circulation model
  - . atmospheric diagnostics from ECMWF's archives.
- these projects will move to their own Cyber 205, it is not yet known what will replace them at ECMWF.



This session dealt with the day to day operational matters and included:

- i) changes in the Computer Operations Section staff structure. The Section now includes a telecommunications engineer (P-P. Regnault), a mechanical and electrical engineer (S. Andell), and electrical technician (N. Wiggins), a Support Supervisor (M. Marsh, whose responsibilities include the Reception area and tape library), a Receptionist (J. Herring) and a clerical assistant (J. Brown);
- ii) machine schedules, including the changes due to the forthcoming move from British Summer Time to GMT;
- iii) long jobs conflicting with scheduled breaks in machine service. To help the operators handle long jobs in these circumstances all remote users are asked to send a console message to the operators when submitting any job over 1 hour long (elapsed time) to warn them not to run it close to a scheduled break.
- iv) Visiting users all should sign the visitors book in the User Area Reception on arrival, so their output can be handled correctly during their stay;
- v) methods of contacting the operators:
  - Cyber console messages are best for short messages;
  - if a telex is sent, warn the operators via a console message, as the telex machine is now remote from the operators;
  - for medium speed lines tests are underway using the secondary channel (Member States who intend to use this facility need to provide a break key though);
  - the Centre is proposing a more sophisticated message switching system via the NFEP;

vi) the TAC at its 3rd session recommended that the use of punched cards be phased out over the next 18 months. Thus all on-site users will have to learn to use the VDU terminal system;

vii) to contact the Tape Librarian either use COMFILE (see ECMWF Newsletter No.11 page 14) which is the preferred method, if not possible then use telex;

viii) the stranger tape system is filling up again, hence all were asked to review their holdings at ECMWF and remove unwanted tapes;

ix) guidelines for posting tapes to/from ECMWF are available to help ensure trouble free transportation of tapes - copies available from the Tape Librarian;

x) postage of tapes to Member States is increasing considerably. For example a box of 5 or 6 tapes via airmail costs £30, the value of the tapes themselves is about £40. Last year (on average) 40 tapes per month were posted from the Centre, involving a total cost in the region of £6000. Remote users were asked to be conscious of this when transporting bulk data. Ways of helping this situation are to use mini-reels, and to compact data where possible.

Discussion at the end included the following questions (name of person asking the question in brackets).

- can 6250 bpi tapes be sent to the Centre?(de Florio)  
Because no standard on tape oxide quality is available for this density moving such tapes between sites can be dangerous.

- can we send a message to the NFEP if the Cyber is down? (de Florio)  
NFEP messages roll off the top of the console quickly and thus there is the danger they will be missed. The new proposed NFEP message system will solve this.

- how should we refer to a product to ask for its retransmission?  
(de Florio).

Use any of the methods outlined below:

REPEAT TRANSMISSION OF PRODUCTS

1. ALL PRODUCTS - ask for by country name.

2. SEPARATE PRODUCTS - use any of:

CATALOGUE NO. 6 DIGITS

WMO HEADING 6 DIGITS

TRANSMISSION SEQUENCE NUMBER 3 DIGITS

3. FOR GROUPS OF PRODUCTS OF PRODUCTS

CATALOGUE NO. 1st 2 digits (e.g. GROUP CAT.20)

NOTE: Unless 'CAT.' is specified, the number can  
be confused with 2 digit TRANS SEQ NO. (leading  
zero suppressed).

Low speed line users are referred to Appendix B of ECMWF  
Computer Bulletin B3.10/1 (Low speed line procedures) for  
the form of the message to be sent to ECMWF.

- can the end time of dissemination be transmitted to Member  
States, or failing that the end time of the forecast?  
(de Florio).

The end time of the forecast could be included in the  
worded message now under consideration.

#### SESSION 4: ECMWF GRAPHICS - AYDIN DEMONSTRATION

A demonstration of the AYDIN colour graphics display was given. This began with a brief description of the hardware and its capabilities. Sample pictures of various meteorological charts in regular use at ECMWF were then shown, with colour used to enhance the information content. For example, the use of different colours to highlight cloud cover, and then contour differences was demonstrated. A simple animated sequence showing the movement of weather systems over the European area for a 5 day period demonstrated well the use of movement to highlight effects. This sequence was based on the ECMWF forecast of 30 April 1981 showing surface level pressure and 850 mb temperature.

Philippe Quoilin presented statistics on the use made of the 9 operational medium speed links over the past 25 weeks, based on characters transmitted per second at the FTP level. He showed how the speed and termination equipment can affect throughput. Comparison was also made, over one day, of the data dissemination statistics for all lines.

After reviewing the advantages and drawbacks of existing message transmission methods between the Centre and Member States, a review of the proposed new message service was presented. This new service will operate via either the secondary channel, or the existing interactive facility. Note that if a Member State implements neither of these, it will not be able to use this new service. The proposed service will provide the following facilities:

- information messages, where no check will be made on successful delivery;
- attention messages, where an acknowledgement of successful reception is required, and where the message is periodically repeated until acknowledgement is received;
- open conversation, where a real time two-way conversation can be held; This facility will probably not be implemented in the initial version.
- mail box, where messages are stored until a user requests them.

Pierre Regnault outlined the procedures that an international centre such as ECMWF has to go through when fault finding on a tele-communications line. He also reviewed line problems over the past year. In particular it was pointed out that it was usually impossible for the Centre to check the line from a remote international exchange to a national weather service, This usually has to be organised by the national weather service itself. Also low speed line users were asked to inform the Centre as soon as any fault was suspected e.g. products not received. In the past, some

Member States had waited several days before reporting suspected faults.

In the ensuing discussion it arose that Italy has experienced some problems in March with the Centre's inability to test and trace a low speed line fault. However, Greece, when experiencing such faults in January, and again in April, found the Centre's procedures helpful. The following questions were asked:

- using loopback tests can ECMWF fully analyse a line? (de Florio)

Unfortunately, it cannot be done where there are earth faults and thus is not perfect. For example, low speed lines often have earth returns between the remote exchange and the national weather service.

- can repeated blanks in an output transmission be compressed in order to reduce transmission time? For example, many lines of Fortran have long strings of blanks between the end of the Fortran itself and any UPDATE sequence number in columns 72 to 80 (Jouaillec).

Only trailing blanks to the end of the line are currently suppressed. The above will be looked into.

- Can a command be provided to delete batch output files from a remote terminals queue? (Jouaillec).

No such direct command exists. This effect can be achieved by either:

i) setting the files priority to zero, it will not print and will automatically be purged after 7 days;

or

ii) start transmission then state that the file is not required at the FTP protocol level.

The Centre can look into providing such a command.

- Using the ROUTEDF facility, users can now send their own binary files back to a remote site in the form of a DD (data dissemination) file. Can such user DD files be given lower priority than DD files holding forecast product dissemination? (Jouaillec).

Currently the responsibility to change the priority of output files is left to the remote user. The Centre will look into this further.

- When in the middle of printing along output remotely, can the user enquire how much is left to be printed? This is so that a decision can be taken whether to let it finish printing, or suspend it to allow a more urgent transmission e.g, data dissemination. (Jouaillec).

No such enquiry is possible. However, using the now available multistreaming facility batch output can be stopped and later restarted. It will go back a maximum of 10 "letters" (maximum of 6400 characters).

- Can the list of products disseminated to a Member State be changed daily? (Henning).

No, the catalogue of products to be sent is changed at most, once a week to avoid heavy overheads. GETDATA may be used to request different products, but they will not be in standard data dissemination format.

- Can the last 4 digits of a product dissemination file be used to include the date in some form, so as to distinguish today's products from yesterday's etc.? (Jouaillec, Folkers, Törnvall).

The Centre will look into it.

- The final length to send messages in is too short under the present implementation (de Florio).

The Centre will look into extending it.

SESSION 6: OPTIMISING NUMERICAL WEATHER FORECASTING MODELS  
FOR THE CRAY-1 AND CYBER 205 COMPUTERS A Dickinson (UKMO)

Alan Dickinson described the build up at the UK Meteorological Office towards the delivery and acceptance of their CDC Cyber 205 earlier this year. They propose to use their machine really only for two projects, climate studies which will take 70% of the machine's capacity, and general circulation models, which will take 20%. However, the first application is a new operational forecast model, the preliminary development of which was done on the Centre's CRAY-1. Having transferred the dynamics of that model to the Cyber 205, they can arrive at some tentative comparisons of the Cray-1 and Cyber 205. After outlining the characteristics of the two machines, and of their operational model, some comparisons were made.



A review was given of the main User Support services. Some points to note:

Documentation

The ECMWF Computer Bulletin series continues to expand with 11 new or revised bulletins appearing over the past 12 months. Those in preparation include:

- Introductory Guide (revision)
- ECLIB documentation
- Conversion hints
- Cray random I/O (revision)
- Job class scheduling
- FTN5
- File Archiving

It was pointed out that if any Member State feels a bulletin on a particular subject would be useful, they should let User Support know. The production of bulletins is largely based on user requests.

Trials are underway to send News Sheets to Member States who have implemented an RJE link via lineprinter output.

Advisory

The idea of appointing specific User Support staff as "Contact Points" to specific Member States seems to be working well.

The COMFILE facility has recently been improved, details were given in ECMWF Newsletter No.11. Use of this facility is steadily growing.

Training

User Support have now given their series of training courses 6 times to date, each individual course lasting one week. So far Member States staff have attended 134 weeks of training via these courses, often each person attending more than 1 course.

Member States will shortly receive requests for nominations for the next set, dates for the next set being:

Course B: Introduction	15-19 March
Course C: Cray	22-26 March
Course D: Cyber	29 March-2 April

### Libraries

The Centre should receive shortly mark 8 of the NAG Library, including it is hoped, a Cray version. The current level of NAGLIB in use is still mark 6, as a mark 7 version for the Cray was never produced by NAG Ltd.

Work is on going to include more routines into the Centre's own library, ECLIB. Full details were given in ECMWF Newsletter No.11. Planned additions for the future include:

MAKEPL )	
ORDERPL )	a series of UPDATE PL manipulation utilities
UPDLIST )	
SD2UV	wind component conversion routines
CONVAR	grid conversion package of routines

Arne Tornvall asked if using the ROUTEDF package (now under trial with some Member States) coded files could also be sent as DD (data dissemination) files. Currently coded files always go as RO (remote output) files which then go straight to the printer, this may not always be required. It was stated in reply that this option could be provided, and that it would be looked into.

### Accounting

Some proposals are currently being studied within the Centre to amend the allocation and control methods to be used in 1982. The main changes will be for Centre staff only, for Member States they will be slight. Some changes Member State users might see are:

- no overallocation will be allowed at project level within a Member State;
- priority level 5 will be opened to Member State users.

Geerd Hoffmann began with a review of future plans as outlined to the TAC at their 3rd session. This will involve the following general areas:

- local networks, to enable an "archive" machine to be made available in 1984, and make way for a major upgrade in computing power in 1986;
- graphics, where the main activities will be on the AYDIN colour graphics development, and the introduction of GKS based software (GKS is the proposed graphics standard being put to ISO for adoption);
- operation, especially improved performance statistics and media performance.

Willy Jensen then explored the questions of "Local Area Networks - Why - What - How?" in some depth. After discussing why inter-connected computer systems are needed, and what types of local area networks are coming into existence world wide, he gave some thoughts on how the Centre might use such a scheme to solve some of its long term problems. It is proposed that this talk will be published by the Operations Department as a Technical Memorandum.

Richard Field (Director of the University of London Computer Centre) outlined the role his centre plays as one of the two national centres providing computer power to the UK universities. Their current service operates on a CDC 7600, at a level of 2000 jobs per day.

They are now looking for a machine with a throughput of twice that of a 7600, and hence have constructed a benchmark of some 68 jobs. These jobs are real user jobs taken from their current workload, not an artificial set specially programmed. This benchmark, taking about 1 hour (elapsed time) on a 7600 has been run on both a Cray-1 and a Cyber 205, with very similar results. Both machines executed the benchmark in about 1/3 of the time on the 7600 when optimised, or 2/3 of the time unoptimised.

Geerd Hoffmann remarked that this result is very interesting for ECMWF because, excluding ECMWF's operational forecast, the workload at ECMWF is similar to ULCC in its characteristics. At the Centre our model codes are changing all the time as various experiments are run. Also the Centre exports its code to Member States, and so portability is considered important. Both these points mean ECMWF needs a machine which does not require heavy manpower, or special non-standard code, to get the best out of it.

The installation and introduction into service of the second Cyber will dominate systems work over the next few months. Some points of the new Cyber concerning users were outlined, including:

- configuration
- GEMINI, the software which will load level between the 2 Cybers
- general effect on service, especially the fact that a Cyber service should now be available virtually 100% of the time.
- shared service, i.e. the shared peripherals, file-store etc.

Other changes the users can expect over the next 12 months include:

- installation at the Centre of an in-house alphanumeric COM system. Tenders for this are currently being evaluated;
- an upgrade to the CDC 2551 (terminal interface), by the addition of more asynchronous ports in February 1982;
- more magnetic tape drive capacity by exchanging our fast card reader and card punch for 2x1600/6250 bpi decks, and the upgrade of one 800/1600 bpi deck to 1600/6250 bpi;
- Cyber software changes which are primarily to implement the dual configuration. Other changes are the increasing emphasis on FTN5 and the decrease of FTN4, plus some proposed experiments using interactive debugging;
- Cray software at release 1.10, this is currently under test and should be in service in November. CFT 1.10 will not be available though before early 1982. The Centre should receive release 1.11 sometime after Easter;
- work will begin on a Cyber PF archiving scheme for users, based on FILESET;
- various performance improvements to both machines will be made, including isolating user jobs that cause severe performance degradation, especially on the Cray. User co-operation will be sought to then improve their performance.

- a CDC database system (Query Update) has been purchased, initially for internal evaluation and trial use;
- improved support of ASCII characters on the Cyber.

In reply to a question from Louis Jouaillec, it was stated that in the UK the price of alphanumeric COM equipment was approximately:

dumb off-line	£35K
intelligent off-line	£60K
on-line	£50K

with the cost of produced fiche being approximately 14p per master and 2p per copy (cost of consumables only).

Control Data has implemented the recent Fortran standard (ANSI 77) as a new compiler, FTN5. The existing product (FTN4) will still be usable for some time to come, although CDC have announced June 1983 as the data after which they will no longer formally support FTN4.

The Centre is now formulating plans to move over completely to FTN5 in the long term, both to gain access to the new facilities, and to keep in line with CDC's main supported product.

Cray Research are slowly upgrading their existing compiler, CFT, to ANSI 77 level. By release 1.10 (expected in trial service early in 1982) the process will be complete.

After outlining the history of ANSI 66 and ANSI, plus describing the different approaches by our two manufacturers, David Dent outlined the conversion philosophy. This includes:

- writing new Centre programs exclusively in the new Fortran;
- F45, a CDC conversion utility from FTN4 to FTN5;
- user documentation, both from the manufacturers, and from the Centre.

Some of the new features were described including the PARAMETER statement, the IF-THEN-ELSE sequence, and input/output changes (END & ERR parameters, direct access, OPEN, CLOSE, INQUIRE etc.). Portability was discussed, and finally some specific problems that have been encountered to date, particularly when attempting to mix FTN4 and FTN5 binaries involving I/O.

In reply to a question from Dick Folkers regarding the eventual merger of so many different languages currently around, it was noted that ANSI's work on the next standard (ANSI 8x) is moving further towards Algol-like languages. In fact some people believe that ANSI 8x as it is being currently put forward, is so different from Fortran as it is today, that it is virtually a new language.

## SESSION 12: CONCLUDING DISCUSSION

### Statistics package

User Support is currently evaluating the likely demand for a statistics package. Two contenders at the moment are BMDP and IMSL (this library is similar to NAG, but with a much stronger statistics section). Interest in IMSL was expressed by Netherlands, Sweden (they have it in their own machine), France, and Greece. One or two Member States asked for more information so they could evaluate it. The BMDP system has been implemented by the UK.

### Speed of a Member State Line

Geerd Hoffmann reminded everyone that the speed of a Member State line can only be changed by a request from their TAC Representative to the Centre. Such a change may also require TAC approval.

### Use of the secondary channel

The TAC has approved the use of the secondary channel at 50 baud only, using Alphabet No.2 (Baudot). Again, everyone was reminded that any attempt to change this must go through the TAC. In an informal gathering of views as to who would use the secondary channel, the following was noted:

UK - no decision yet, but if they go ahead they won't use Baudot.  
Sweden - would use it, but no break key yet.  
Greece - the representative's personal opinion was that they would use it if it was 100 baud and Alphabet No.5 (ASCII).  
Netherlands - yes if 100 baud and ASCII  
Finland - no break key is their problem  
Austria - will need to discuss it first  
Denmark - no secondary channel available on their modem  
Ireland - will use if break key problem solved  
Spain - will need to discuss it first  
France - having solved the break key problem they use it with Baudot, but would be happy to change to ASCII  
Switzerland - planned line is somewhat off yet. However, they do use such a system to Offenbach at 75 baud  
Italy - yes, will use it.

./.



### Proposed worded message

In response to Eric Walton's request for what might Member States like to see in the proposed worded message of computer operations nature, the only suggestion was for the beginning and end times of the forecast.

### Access to the meteorological archives

Andrew Lea reminded everyone of the guidelines laid down by Council at their 12th session (November 1980) regarding access to data in the Centre's meteorological archives by Member States, namely:-

#### Origin of request

National Met. Services

Governmental bodies or institutes active or with interests in the meteorological field, other non-profit seeking organisations, and commercial organisations.

#### Conditions of distribution

to be supplied freely. For those services with access to the Centre's computing system, the extraction of required data will be carried out by the service itself. For those services without access, the Centre will consider extracting the data.

For Member States with access to the Centre's computer, arrangements will be made for distribution through the national meteorological service. For Member States without access, the request is to be submitted to the national meteorological service, unless the power of decision has been delegated to the Director of the Centre by that service, and the Centre may agree to extract the data itself, depending upon the effort involved. In all cases, the national meteorological service may require that a charge be made for the supply of data.

The current situation is that the Centre tries, where possible, to extract data requested. However, in the past few months it had had to say no to some large requests due to manpower problems within the Centre.

### Newsletters

Several Member State Meteorological services produce newsletters about their activities, it was suggested that a good way for ECMWF's Member States to keep in touch with each other might be to exchange such newsletters on a regular basis. ECMWF itself also would be very interested to receive copies of Member States newsletters. It was proposed that the Computer Representatives might like to organise this where feasible.

### Next meeting

At the TAC's 3rd session (June 1981) several TAC delegates felt that the first meeting of Member States Computing Representatives "had been very useful, but questioned if such a meeting need be held annually". After approving a second meeting of representatives for the autumn of 1981, they considered that "future meetings should only then be held when particular needs arose (eg to explain major changes or developments in the Centre's computer system), not necessarily on an annual basis".

Each Computing Representative was asked for his opinion on the value of this meeting, and on the frequency of future meetings.

- |                |  |
|----------------|--|
| United Kingdom | these meeting are very useful to keep abreast of plans. For the UK there were no problems of travel costs, nor of finding time to attend, therefore it was not fair of them to comment on the frequency.   |
| Sweden         | An interesting and informative meeting. As the use of ECMWF's facilities will increase there is a need for an annual meeting.  |
| Greece         | Helpful and useful, but expected a more practical and educational session (unfortunately he was not able to attend last year's meeting which had several educational sessions). Nor was there much discussion of problems a Member State such as Greece might expect in the future. Preferred annual meetings. |

Netherlands Useful, especially informative discussions with Centre staff which were felt to be important. Annual meeting.

Finland Felt the same as the Netherlands Representative. Would like especially to stress the personal contacts as being very important. An annual meeting of 2 days.

Austria Found his first meeting very interesting, especially to hear the progress and reviews from other Member States. Difficult to assess frequency, especially as many problems must be taken into account.

Denmark His first meeting also. Found talking to personal contacts very important. Annual meeting.

Ireland Useful meeting. These meetings will be even more useful to Ireland once they start using the RJE link fully. Contact with both Centre staff and other Member State Computer Representatives were valuable. Would like to see another meeting next year while Member State usage is still increasing, then perhaps every second year.

Spain This meeting was not so interesting as last year. If changes at the Centre have been great, then hold an annual meeting otherwise every second year there must be a meeting.

France Appreciated the general sessions held last year, unfortunately less of them this year. Daily problems will be better solved, at the time once the secondary channel is working, and not left to the next meeting. Such "electronic" means of communicating can also be used to exchange information. Meetings every 2 years are too far apart, but every year is too frequent!

Switzerland useful meeting, especially the sessions on future plans and special peripherals. Why not meet twice every 3 years?

Italy Very useful meeting, especially as it provides technical background and explanations for his role as the TAC Representative for Italy. Such technical explanations he does not get from the TAC meeting. With this technical education he can provide better informed opinions within the TAC. Also from these Computer Representative meetings he can understand the real Centre's problems. No other meeting can take its place.

The meeting then concluded with a short statement from Geerd Hoffmann thanking all for attending, and User Support for organising it. He asked everyone to persuade their TAC Representative to support future meetings and hoped that at such future meetings more sessions from the Member States themselves would be forthcoming. Until then he suggested that everyone keep in touch with each other and, especially, of course, with the Centre.

Andrew Lea  
User Support

2ND COMPUTER REPRESENTATIVES MEETING14-16 OCTOBER 1981ATTENDEES

Poul Henning	Denmark
Mariano Hortal	Spain
Louis Jouaillec	France
George Sakellarides	Greece
Declan Murphy	Ireland
Guilio de Florio	Italy
Dick Folkers	Netherlands
Georg Kaindl	Austria
Gustav Siegwart	Switzerland
Timo Hopeakoski	Finland
Arne Törnvall	Sweden
Alan Dickinson	UK

Geerd-R. Hoffmann	ECMWF Operations Dept. Computer Div.
Peter Gray	" " " "
Andrew Lea	" " " "
Eric Walton	" " " "
Luigi Bertuzzi	" " " "
David Dent	" " " "
John Greenaway	" " " "
Norbert Kreitz	" " " "
Michel Miqueu	" " " "
Pam Prior	" " " "
Pierre Regnault	" " " "
Paddy O'Sullivan	ECMWF Operations Dept. Met. Division
Rex Gibson	ECMWF Research Department

2nd COMPUTER REPRESENTATIVES MEETING14-16 OCTOBER 1981PROGRAMMESession WEDNESDAY 14 OCTOBER

No.

- |    |       |  |            |
|----|-------|--|------------|
|    | 14.00 | Welcome                                | G-R.Hoffma |
| 1. | 14.15 | Computer Division's status and plans   | G-R.Hoffma |
|    | 15.00 | Coffee                                 |            |
| 2. | 15.30 | Member States introduction and update. |            |
- As last year each Representative will be asked to speak for a maximum of 5 minutes outlining their Member State's involvement (actual or planned) in the computer service at ECMWF. This briefly should include:
- current computer equipment installed
  - RJE equipment (to be) connected to ECMWF
  - (potential) projects run at ECMWF
- |  |       |                |  |
|--|-------|----------------|--|
|  | 17.30 | Cocktail party |  |
|--|-------|----------------|--|

THURSDAY 15 OCTOBER

- |    |       |   |                        |
|----|-------|---|------------------------|
| 3. | 09.00 | Operational Service, including<br>- operator interface, messages etc.<br>- tape library management<br>- posting output                    | E. Walton              |
| 4. | 10.00 | ECMWF graphics - A demonstration of the AYDIN colour system will be given.  | G. Lee/<br>H. Pümpel   |
|    | 10.30 | Coffee  |                        |
| 5. | 11.00 | Telecommunications<br>- brief status report on NFEP<br>- practical experience and problems with existing network<br>- use of back channel | P. Quoili<br>P-P.Regna |

- 12.30 Lunch  
During the lunch break, there will be an optional tour of the machine area. G. Holt
6. 13.45 Optimising numerical weather forecasting models for the Cray-1 and Cyber 205 computers. A. Dickinson (UK Met. Office)
7. 14.20 User Support services, including D. Dent
- Advisory
  - Training
  - US contact staff
  - Documentation
  - Libraries
  - Accounting and allocation
- 15.15 Coffee
8. 15.45 Ideas for future computing at ECMWF G-R.Hoffma  
W. Jensen
- The Centre is investigating the purchase of a high speed local network (operating at up to 50 mbits/second) to link our mainframes to future facilities (e.g. mass storage system) and ultimately to new mainframes.
9. 17.00 On benchmarking a CRAY-1 and a CYBER-205 R. Field (ULCC)
- 17.30 FINISH

FRIDAY 16 OCTOBER

10. 09.00 System software status and plans P. Gray
- use of two CYBER mainframes
11. 10.00 Moving to FTN5 (CDC's Fortran 77 compiler) D. Dent
- the Centre's plans and experience to date.
- 10.30 Coffee
12. 11.00 Discussion
- 12.30 End of Meeting