

by
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Your Chairman and organisers of this conference have given me a very challenging title, under which to contribute to today's discussion. Their timing is immaculate, because as you know EURONET's development has reached a critical stage. In terms of flying an aeroplane, the point of commitment to take-off has been reached. Whatever comes, EURONET will now be launched. But of course a flying aircraft can do many things (some of which I prefer not to think about!). So I imagine that what you want to review today is: do we need to fly at all and, if so, where is that aircraft going? I suspect that you want to be sure that EURONET is heading in the right direction, with the right means of transport, with the right speed and with the interest of its paying passengers as its sole over-riding objective.

Before attempting to answer that basic question, let me first bring you very briefly up to date on the latest progress. You certainly know the background of EURONET, so I will concentrate on what has happened in the last few months:

- the Community Action Plan for scientific and technical information was approved by the Council of Ministers on March 18th this year;

- a study of the network options was undertaken by the PANDATA organisation, who presented their report in June;

- the CIDST reviewed the PANDATA findings and proposed that the PTTs take the matter further;

- the PTTs, through their CSTD committee (Comité special pour les transmissions de données), worked with intense pressure over the period July-November to propose a network solution, which is not just technical but financial, legal and organisational in its scope;

- in October letters of agreement were exchanged between the European Informatics Network and the Commission on the principles of cooperation between the EIN and EURONET projects;

- the European Space Agency and the Commission have been undertaking extensive consultations with each other and the respective national delegations on the means of cooperation. The Commission has completed its consultative process and has declared itself ready to sign a letter of intent and I understand that just two weeks ago the Council of the European Space Agency agreed in principle to the collaboration proposed,

with the provision that the Administrative and Finance Committee
ESA reviews the letter of intent in the light of the PTT negotiations -
but my friend Noel Isotta can tell you more about that aspect;

- negotiations have been initiated with suppliers of data
bases and information services;

- finally, the last major point I want to mention again is
that of the PTT contract. I cannot of course call it an event yet,
because it is not due to be signed until next week. This contract will
specify the creation of the network, providing access, of both dial-up
and permanent connections, in all of the Community countries. This net-
work will be financed by the Commission from the Action Plan budget, be
implemented and managed by a consortium of the 9 PTTs in close coopera-
tion with the Commission. The contract, if signed, will be effective
immediately leading to implementation during 1976 giving operational
services by mid 1977.

Well that is a summary of recent and impending events. Those
of you who are involved in multi-lateral international arrangements -
and that I suppose would apply to most of you here - will appreciate the
enormous, behind-the-scene activity which is necessary to accomplish
the type of results I have described, over the period of 9 months or so
which have so far elapsed since the approval of the Action Plan by the
Council of Ministers in March this year.

This leads me directly to the key issue - namely, what is all
this activity aimed at? The brief answer is: the provision of a unified
network for scientific, technical, social and economic information, which
will give users dial-up access to data bases on an equitable-charge basis
more or less independent of the location of the user and independent of
the location of the data bases. The more complete answer will clearly
take more time to develop, so let me therefore identify the key principles
of EURONET:

1. The most fundamental premise is that EURONET is not start-
ing in a vacuum. The EURONET programme is based completely
on the concept that existing information systems must be the
keystone to a developing network. Paradoxically, this will
explain why most of the publicity you have heard about EURONET
concerns the physical network, since this is the new feature,
the glamorous aspect perhaps. The purpose of the physical
network is simply to provide the access medium for helping
users get at the many fine information systems that are avail-
able. As Alex Tomberg has often said, and this has been
emphasised yesterday by Mr. Collier and today by Mr. Dammers,
the biggest problem today is that of access. Although we
might like more data bases, covering more subjects, what we
most urgently need right now is better access to what we have
already.

European Association of Scientific Information

EUROPEAN USER SERIES 3

The On-Line Age

ns and needs for on-line information retrieval; proceedings
of the Eusidic conference, Oslo, 4th-5th December, 1975

Edited by Gordon Pratt
and Susan Harvey

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EUSIDIC

1st Intl. Online Information Mtg.
London. Dec 13-15, 1977.
Learned Information, Oxford.

EURONET

PAPER G24

Sept 10

EURONET: A NEW COMPREHENSIVE INFORMATION UTILITY FOR THE EUROPEAN USER

H. Ungerer, E.E.C., Luxembourg.

Synopsis: The European on-line information network EURONET is an EEC-project which aims at merging current and future publicly available on-line information services in the Member States into a common network on a cooperative basis. With the deadline for starting operations now set for the end of 1978 and with the implementation of the PTT-provided communications subnetwork under way, this paper briefly reviews the current status of the project, provides details on the intended services, and analyses some aspects of its impact on the European information environment.

I Brief history

The European on-line information network EURONET is conceived as a facility to enable data terminals in any of the EEC countries to gain fast access to scientific, technical, economic and social information (STI) held on computer files (data bases and data banks) at distant service centres. It is the main part of the EEC's present Action Plan in STI (for the period 1975-1977), and it is the central theme of a second Action Plan (for the period 1978-1980) which is currently being submitted to EEC bodies; responsibility for implementation rests with the Commission of the European Communities, more particularly with the Directorate General for Scientific and Technical Information and Information Management.

The implementation of EURONET's data transmission facilities has been commissioned by the EEC to the Postal Administrations of the Nine Member States who have formed a special consortium for this purpose; the basis of the cooperation is a contract on the implementation and operation of the telecommunications network for EURONET signed between the Administrations and the EEC in December 1975; recently (June this year) an addendum to this contract was signed which has finally resolved some open questions, and which provides now for operation of the network for the period 1979-1983.

By virtue of this addendum the EEC is directly investing 17 MFF (3.5 millions \$ US) in the telecommunications network. The Administrations are cofinancing with an involvement of 7.1 MFF (1.5 millions \$ US) in total. The network, in its initial configuration, will have 4 nodes, called Packet Switching Exchanges (PSEs), and 5 multiplexer access facilities, called Remote Access Facilities. Both, PSEs (in Frankfurt, London, Paris, and Rome) and Remote Access Facilities (in Amsterdam, Brussels, Copenhagen, Dublin, and Luxembourg) will offer equivalent facilities for linking in "host" centres and data terminals.

The actual implementation is being carried out for the Administrations by a consortium of EEC software firms, led by the French firm SESA and its UK partner LOGICA; the corresponding contract was signed in late June.

EURONET at the very start are

- the Space Documentation Service (SDS) of the European Space Agency (ESA), Rome, which up to now operates a network of its own (ESAnet), and which already sells its services in all EEC countries; it is intended to transfer gradually, within the EEC area, the SDS services from its own network to EURONET;
- the Deutsches Institut für Medizinische Dokumentation und Information (DIMDI) at Cologne which has already been operating outlets all over Germany and also in the Netherlands for some years;
- the British Library, London, which early this year put its BLAISE service into operation;
- INFOLINE, London, which will start up commercial service next year;
- the Fédération Nationale du Bâtiment, Paris, which successfully sells its ARIANE data bank service all over France;
- CNUCE, Pisa, which has implemented the RPC network, and which has just started operation of data bases.

In total 4 hosts have been announced in Great Britain, 5 in the Federal Republic of Germany, 9 in France, 4 in Italy, 1 in Belgium, 1 in Denmark; to be added are the SDS service in Rome, and the two EEC installations in Luxembourg and Ispra (see Fig. I.)

This means that nearly all major on-line services in the EEC will participate in the network.



Fig. I EURONET LAYOUT

Data Base

In total factual data mix of data may be used available

- AGRIS
- ARIANE
- BIAM
- BIOSIS
- CAS
- COMPENDEX
- DERWENT
- DOMA
- Environme
- Excerpta
- Internati
- INSPEC da
- MEDLINE
- NTIS
- NASA data
- METADEX
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- Oceanic A
- Pollution
- Psycholog
- SCISEARCH
- TITUS
- THERMODAT
- UK Marc
- World Alu

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Data Bases

In total more than 80 bibliographic reference data bases, and some 30 factual data banks have been offered by these services. Although the exact mix of data bases is still not definitively confirmed at this moment, it may be useful to give a short sample of those which are expected to be available from the start:

- AGRIS (International Information System for the Agricultural Sciences and Technology)
- ARIANE (Civil engineering, construction, building)
- BIAM (Pharmaceuticals)
- BIOSIS (Bioscience Information Service of Biological Abstracts)
- CAS (Chemical Abstracts Service)
- COMPENDEX (Computerised Engineering Index)
- DERWENT data bases (patent information)
- DOMA (Mechanical engineering)
- Environmental Science Index
- Excerpta Medica Biomedical Information System
- International Pharmaceutical Abstracts
- INSPEC data bases (International Information Services in physics, electrotechnology, computers and control)
- MEDLINE (the MEDLARS on-line service)
- NTIS (National Technical Information Service)
- NASA data bases (US National Aeronautics and Space Administration)
- METADEX (Metals Abstracts Index)
- PASCAL data bases (information science, astronomy, biology, pharmaceuticals, electrotechnology, physics, chemistry, environment, earth sciences)
- Oceanic Abstracts (oceanography)
- Pollution Abstracts (air and water pollution)
- Psychological Abstracts
- SCISEARCH (Science Citation Index)
- TITUS (Textiles)
- THERMODATA (Thermodynamics)
- UK Marc
- World Aluminium Abstracts

A more complete survey is to be found in Ref.1

Generally speaking the services offered will cover a broad spectrum starting with medicine and chemistry and spreading to social and economic information. At the moment about one third of the data bases are related to hard sciences, about a quarter relate to medicine and biology, and

the rest ranges over various subjects such as education, agriculture, law and environment. The economic end of the spectrum, such as product information, market research data, etc., is still underrepresented, and we hope that this will quickly change. However, on the whole, the initial offer fits well with the forecast subject distribution of on-line searching in a recent marketing study which the EEC commissioned to P.A. Management Consultants (Ref.2). They assume an initial 35% for medicine and 50% for science and engineering (in 1979). This distribution is forecast to change rapidly yearly. Medicine and also chemistry (which initially takes nearly 20%) have been early starters and therefore their share will fall steadily as other sectors pick up momentum.

Subscribers

Much effort has been invested in obtaining reasonably accurate estimates for the number of data base searches which will pass via EURONET; in particular, an in-depth study of the market potential in the EEC was carried out for the Commission by P.A. Management Consultants (Ref.3). However, due to the sensitivity of the estimates regarding the onset and the details of the services, these figures, and their subsequent up-dates, should be taken as a basis for fixing reasonable marketing aims for searching via the network only, rather than as accurate forecasts.

Our current aims for search-traffic via EURONET are:

1979	160,000	searches/annum
1980	340,000	searches/annum
1983	1,100,000	searches/annum

A more defined measure of network- and host-usage are the expected terminal connect hours/annum. According to statistics obtained from major European services, the average duration of a search (on-line sample print-out included) is approximately half an hour, and thus tends to be higher than the figure given in the 1975 SDC user survey study (Ref.4). Based on this search profile, the above stated marketing aim then translates into 80,000 connect hours/annum for 1979 and 170,000 connect hours/annum for 1980.

Unfortunately, precise statistics regarding search profiles and search rates on the current on-line STI-market in the EEC are difficult to obtain owing to the reluctance of major US services to release detailed information on their operations in Europe, and because of the lack of agreed standards in the description of services. However, some data is available, in particular thanks to research which has been carried out within the framework of EUSIDIC (the European Association of Scientific Information Dissemination Centres).

A conservative estimate is that last year's total of terminal connect hours for the major commercial services which operate on the European market adds up to at least 40,000-50,000 connect hours/annum; out of this presently 50%-70% drift away to the major US-based services (Lockheed Information Systems and SDC Search Service). In this only those suppliers have been included which operate mainly bibliographic reference oriented data bases. Connect time statistics for data bank oriented services, in particular because of their frequent integration into computational time-sharing oriented services, seem at the moment to be unsafe to include; however, the importance and success of this type of services are growing, as for example the French ARIANE has demonstrated and, already now, they may generate a total of terminal connect hours of the same order of magnitude as bibliographic searching.

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Based on the figure of a total of 45,000 connect hours/annum as a lower limit estimate for 1976, one may compare EURONET traffic aims with the total future European search volume calculated on the basis of exponential growth and assumed growth rates. Fig.2 indicates future total European search volume on the basis of assumed annual growth rates of 30%, 40%, 50% and 60%; rates of this order of magnitude seem to be reasonable working assumptions in comparison with growth statistics for the past years released by EUSIDIC. Fig.2 reveals

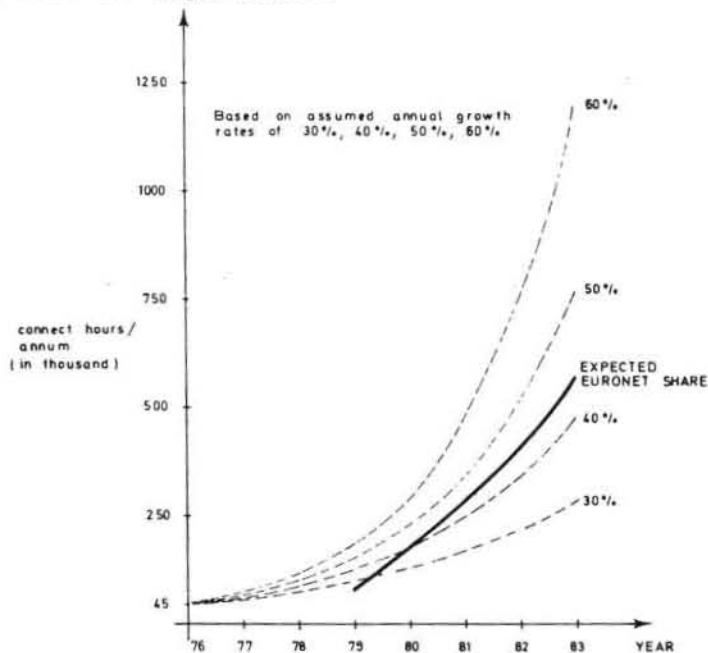


Fig II ON-LINE SEARCHING IN EUROPE

that the above stated EURONET traffic aims are realistic if the global on-line search volume in Europe expands at a rate of 50%-60% annually, and if the network secures 50%-60% of this volume, the rest passing via national lines to host centres, or to non-EEC European suppliers, or via transatlantic links to US services. There are two arguments that this aim can be attained;

- with EURONET a new level of comfort of data service will be introduced into inter-EEC on-line searching,
- an exponential growth of this order of magnitude will take the total European search volume by 1981/2 to a level which has already been demonstrated to be attainable on a comparable market - it was attained last year in the US based on a telecommunications infrastructure comparable to that of the future EURONET.

A network usage of 100,000 connect hours/annum would imply the signing up of nearly 1000 subscribers to EURONET in the EEC area assuming an average of 10 connect hours/month/subscriber (which is corroborated by Ref.4); other sources put the actual number of subscribers needed to generate this traffic rate considerably higher, and a realistic figure seems to lie somewhere in the range of 1000-3000 subscribers, with a hard core of a few hundred subscribers with monthly usage rates of 20-40

connect hours producing a substantial percentage of the total traffic.

According to Ref.3 a reasonable estimate for the average number of searches per "end-user" (who forward their searches via the terminal professional, either as members of the subscriber's organisation, or as individuals via an intermediary) is 3 searches/annum, or the equivalent of 1.5 connect hours/annum. This implies that generating 100,000 connect hours/annum involves some 50,000-100,000 STI-consumers, and it just demonstrates how profoundly the network already in its initial stage will influence, and benefit, the European STI-user.

3 The data service

The project has from the start had two objectives:

- a short term aim-namely the development of a data service which would allow European on-line STI-services to operate EEC-wide, and give them a chance comparable to that of their US counterparts to develop service quality and service diversification;
- a long term aim - the gradual and voluntary integration of these services into an EEC-wide information utility, with all the developments of related international structure and of information technology that are needed for this.

Let us turn to the short term objective, the deadline for which is, as I have said, fixed for the end of next year - the development of the data service. From the start of planning the project there was a general conviction that the reliable and professional data service which is needed to justify the heavy, and long-term, investments of information services, could not be created by patching up some existing more or less technically compatible networks which operated on a private or semi-private basis; the only acceptable solution was a counterpart to the kind of licensed carriers developing in the US which imbed STI-traffic into general data traffic, such as TELENET and TYMNET, even if this meant shifting the network's starting date due to the difficult international negotiations and consultations which had to be carried on. The Commission has met in this with cooperation from the PTT Administrations who are working on the problem of international data communications within the framework of CEPT (Conférence Européenne des Postes et Télécommunications) and who also felt that the special needs of STI-data transfer could not be satisfied within their conventional service offer; the EEC's initiative also met with good timing, with the international X-series standards for provision of data services developed to sufficient maturity by the CCITT (Comité Consultatif International Telegraphique et Telephonique).

I now propose to go into some detail on some aspects of the data service, namely: tariffs, terminals, host connection, and coverage.

Tariffs

A new more usage-oriented tariff structure will be the most striking feature of the telecommunications network. and it will be especially adapted to STI on-line retrieval needs. With regard to tariff definition, it is stipulated in the EEC/PTT arrangement that tariffs will be fixed by the Administrations, but after discussions with the EEC on EURONET requirements.

Although these discussions have considerably progressed, unfortunately at the time when this paper was written, details can still not be released

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(detailed information is to be expected early 1978, at the latest by June 1978). However the following can be said:

- a new major usage element will be the volume of data transmitted; this is a direct consequence of the data network's packet-switching technology, and it should especially favour small- and medium-size users and interactive applications;
- there will be no distance dependence in the tariffs; this was a major EEC requirement.

Although no definitive figures can be given at this moment the tariffs we aim at may be as low as 5-6 \$ US/connect hour (for data throughput typical for STI-searching).

Data terminals

As I have said, data terminals will dial into or link to EURONET at access points in all Member States. More specifically, the PSEs and Remote Access Facilities will directly support teletype-compatible terminals up to 120 characters/second, and thus cover the majority of terminals which are now used in STI retrieval; the detailed interface specifications are the draft CCITT standards X3, X28, X29 (formerly known as ESP20) which cover the interworking of start-stop terminal equipment with packet-switched networks.

There have been some rumours about possible difficulties in matching certain terminals to EURONET; it is true that sophisticated synchronous terminals will not be directly supported by the network at the very start; the development of this support via additional facilities or adaptation is a major line of present action, and the Commission is investing heavily in this field and the related development of high level Virtual Terminal Protocols.

However, it should be noted that the terminal support offered at the start will at least be equivalent, and in certain aspects superior, to the facilities which are offered by the corresponding TYMNET and TELENET nodes which are allowing successful operation to US services.

Host connection

Host centres will need for connection to EURONET only one or two physical links, with a multitude of communication channels multiplexed onto them; the interface is actually specified in the now famous CCITT X25 recommendation which defines the interworking of "packet-mode" terminals with packet-switching networks. Although in the long run this type of connection offers the flexible, cost saving, and reliable connection which data base services need (it is also promoted by TELENET), it is obvious that initially support must be given for adaptation of TP equipment to the new technology, and this is a central project area for the EEC in the immediate future.

We are convinced that in the longer term cost-saving solutions can only be developed in close collaboration with the equipments' manufacturers, and this is why already a year ago we have contacted the major manufacturers whose equipment is used by future EURONET centres. In most cases we have encountered a positive attitude, and prototype implementations at centres are to start shortly for some equipment lines.

Simultaneously the Commission has commissioned studies for the development

The technology of the network is now based on TRANSPAC, the French PTT data network, which has announced start of operations for the middle of next year. This bases the network on a public service-oriented technology, and has allowed acceptance by the contractor of the demanding time schedule which had to be imposed to compensate for the delays which the project had experienced in the past. The dates are

August 1978 : first installations of PSEs
September 1978: start of testing for linking
hosts and data terminals
December 1978: start of service.

The final date is contractually guaranteed by a heavy penalty clause. The operation of the telecommunications network will be supervised by a special PTT Network Control Centre which will be located in London.

2 Service suppliers, data bases, subscribers

I do not propose to go in detail on the technicalities of the data network, nor on the new features - packet-switching technology, CCITT X-series standards for data networks, usage orientation of tariffs - which allow it to play a key role in the development of international PTT data services in Europe quite generally. I propose to go over these features only in as much as they profoundly influence the operations of on-line STI-services via the network. Rather I will concentrate on EURONET's aspect as a new information facility in the EEC.

EURONET, in this narrower sense, is a cooperative programme involving a number of different elements, namely:

- the host computer operators or service suppliers,
- the subscribers and the "end-users",
- the data base producers,
- the Commission,
- the national information authorities,
- the PTT Administrations.

The Commission and the national information authorities are closely interacting within the framework of the "Committee for Information and Documentation on Science and Technology" (CIDST) which advises on STI policy in the EEC and the execution of the STI Action Plans. Recently this committee has streamlined its work in the network area considerably by merging several subgroups into a single ad hoc EURONET Development Group; it is expected that this will speed up the consultation progress.

While the rôle of the Commission as the basic promoter of the use of STI in the network and that of the PTT Administrations as the operator of the communications facilities have already been mentioned, I propose to go into some detail on the first three components listed above.

Service suppliers

The project has encountered a level of interest on the supplier side which has by far surpassed the most optimistic expectations. Up to now 27 services have announced their firm intention to connect to the network during an early stage. Among the centres which are expected to open service via

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of suitable teleprocessing front-ends for those cases where sufficient support by the manufacturer not only for the implementation of X25, but also for the matching of EURONET's terminal support has not been offered. Recently a contract was placed with a consortium of European mini-computer manufacturers, led by Danish REGNECENTRALEN and UK LEASCO, and we are expecting their proposals in the Autumn. It is planned that, shortly after, a prototype implementation at a centre will also start on this basis.

Coverage

EURONET will offer not more than one access point/country, and initially a limited number of interfaces only (140, later on 270, ports for data terminals in total, both dial-up and leased line; this should provide sufficient access capacity for usage rates up to some 200 000 connect hours total usage/annum). This relates to the conception of the network which aims at providing a large data transfer capacity, and relying largely on national extensions for additional port capacity. With this, and the wide variations, and sometimes high level, of long-distance national telecommunications tariffs in the EEC in mind (e.g. maximum-distance peak-hour dial-up charges vary from 5 to 30 \$ US/connect-hour for the larger countries) it is obvious that EURONET's new service can only be fully effective, if corresponding data services are developed on the national level.

Actually, interlinking with future national PTT data services is one of the agreed targets of EURONET development, and has been a major design criterion.

National packet-switched services are now either in the implementation or planning stages in most EEC countries. As I have said, TRANSPAC in France has announced it will be operational by the middle of next year; the UK Post Office has implemented its EPSS service and is considering an X25-compatible successor. The Belgian and Dutch PTTs have announced that a service will be in operation before 1980. Denmark is participating in the Nordic Public Data Network, where an X25 packet-switching service is to be provided in early 1980. The Italian PTTs are closely following EURONET's development, and discussion has started in Germany on a possible extension to EURONET within the EDS concept.

In most of these cases EURONET has played a major role either in starting the discussion or in speeding up the development.

4 Developing an information utility

As I have said, integrating the information services, which will operate via the network into one utility and making them widely used is a long-term task which includes a wide spectrum of activities, in particular harmonisation, development of common facilities and marketing; we are currently working in detail on

A standard user interface for on-line retrieval operations

The data network and its standard interfaces will resolve to a large extent the compatibility problem on the level of data-processing equipment; the matching on the system and language level is a process which has just started.

The open-network approach which EURONET is taking leaves it largely to the centres to operate their services via the network the way they like and feel it to be efficient. However, it is intended, on an optional basis, gradually to offer for all services a standard command set for interrogation of their

systems reducing for the user the difficulty of switching between the various retrieval systems which will be used (among them RECON, BLAISE, DIRS, GOLEM, STAIRS).

A working version of the set has been developed, after input by all major manufacturers whose software is represented (Ref.5). It is intended to start test implementations at three major future EURONET centres in the Autumn of this year. We have also contacted ISO on the subject, and this is part of a more general scheme of cooperation with standardisation bodies in the field.

Matching user language and data base language is a long-term target which is embodied in a comprehensive

Multilingual Programme

which was launched early this year building on experiences in the framework of the first STI Action Plan (Ref.6). A staged approach will be taken aiming among others at

- multilingual thesauri
- automatic translation systems;

two systems (SYSTRAN and TITUS III) have been or are being tested. For a survey of the state of the art see Ref. 7.

Easy procedures for password issuing and billing

Easy access to services will be a major criterion for the use of EURONET as a distributed system, i.e. switching by the user between different services. As it looks at present, the services will initially operate individually via the network; however it is hoped that services will group together, and that very soon common mechanisms for billing will be developed. At the moment, this is an area of intense planning and discussion.

"Rules of conduct"

A search rate of 100,000 connect hours/annum at present prices would imply a total revenue of 5-6 million \$ US in host fees and data base royalties; this figure underlines the order of magnitude of commercial interests which are at stake, and it is therefore evident that a minimum of internationally acknowledged "rules of conduct" for the relationships of data base producers, service operators, and subscribers is needed.

Also in this field the EEC is moving in close cooperation with the relevant existing international organisations. Up to now guidelines for the conditions of data base supply have been issued in conjunction with the association of data base producers (ICSU-AB) which are aimed at harmonizing the conditions under which data bases are made available to host operators (see Ref. 8). They cover areas such as the definition of a data base, services derivable, sales conditions.

Study of document delivery and related problems of document reproduction

Rapid delivery of documents, the references of which are retrieved during a bibliographic search, is a major requirement for the efficiency of the overall system, and new solutions will be sought in collaboration with major suppliers of source documents in the EEC; in the Autumn of this year a study will be commissioned which will probe into the area, investigate the

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impact of on-line searching on overall document demand, propose schemes for rapid delivery, and analyse related problems of reproduction and copyright.

A referral system

An efficient guidance system to data bases is at the heart of any distributed information utility. It is a long-term goal, and as a first step the EEC has commissioned a study to EUSIDIC and ICSU-AB which will establish a suitable standardized description of data bases (Ref.9).

Moreover, as a first practical measure, the Commission participates in EUSIDIC's EUSIREF service which also provides information on future EURONET services.

Marketing

Generating the extension of the STI market in the EEC and the usage figures which are needed must be the first priority project of any programme.

Indeed, while the large number of services which intend to operate via EURONET is a promising basis for the diversification of the offer which alone will satisfy the European needs in the field in the long run, it is true that these services initially will have to accommodate on a limited user base (see Fig. 2). Moreover, P.A. estimates in its study that five major hosts will have a share of about 60% of the total EURONET volume (Ref.2). Assuming that at least 25,000-50,000 connect hours/annum (equivalent to a host revenue of some 1-2 millions \$ US) are needed to operate a centre on a full cost recovery basis, and even allowing for a substantial additional national search volume which would bypass EURONET, it is quite evident that most services will have to operate during the first years on a marginal cost basis, with revenue derived from EURONET searches accounting for the cost of additional EURONET-dedicated equipment only.

This just underlines the priority of the marketing effort. Basically, any success in marketing will depend on the quality and reliability of the individual services, their data base offer and their willingness, and capacity, to undertake their own EEC-wide marketing and training campaign. P.A. recommends in its study that at the very least 10% of the expected revenue should be allocated to this effort (Ref.2).

However, the Commission is contributing; on the one hand with the projects which have been discussed and which will all promote the use of EURONET services; on the other hand, more directly, with a complementary programme which concentrates on market analysis and segmentation, supply of EURONET promotional material and assistance in developing marketing plans. This programme is just about to be started, with an initial allocation of 250,000 \$ US.

5 Conclusion

This has been a short survey of the present status of the project, and I suppose I have left some questions open for discussion. However, I hope I have made my point. EURONET's development will be a continuous task well after that day in late December 1978 when commercial operation on the network starts; but, already now, EURONET provides a major impetus, and sometimes leadership, to the development of the STI market in Europe, and beyond.

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THE INFO

F.L.Bellomy

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EURONET: AN INTERNATIONAL NETWORK

John C. Gray
The British Library
London, England

In Western Europe two international networks are emerging: EURONET and SCANNET. EURONET is being created by the nine countries of the European Economic Community. It is scheduled to become operational in 1978 and will have switching nodes in Frankfurt, London, Paris and Rome and concentrators in Amsterdam, Brussels, Copenhagen and Dublin. SCANNET, due to become operational this autumn, involves cooperation by all the Scandinavian countries. There will be a node in each capital.

The growth of these networks is posing serious problems of national policy for member countries. How far should an individual country, even one as populous as the United Kingdom, continue to maintain and develop its own services, and how far should it share the provision of services with its partners in the network -- or with other networks as they become linked in a world-wide framework? The question is complex since it has to be approached from the standpoint of bibliographic services -- whether large or small, whether for library or for retrieval purposes -- and data services, whether dealing with raw or with critical data. It also involves the number and distribution of nodes and concentrators, and the optimal spread of data bases among host computers. In both networks member states seem to be turning their minds against centrally managed data bases (at least for scientific and technical information), mainly because progress with such cooperative systems tends to be slow and uneven.

Demand for English-language data bases appears strong in both networks, at least initially, but the number of services in French and German will grow, and, if attempts to solve multilingual problems are successful, an increasing number of services will be available in two or all of these languages

A principle feature of both EURONET and SCANNET is that the communications networks have been developed by governments out of public funds, but responsibility for policy lies with the information policy agencies, not with the telecommunications authorities. Also the bulk of host computers will be operated by, or on behalf of, government agencies. In the Federal Republic of Germany participation in EURONET forms an essential part of a national information plan, which is broad in both aims and subject coverage, and in the other eight countries it is a central feature of national policy development.

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EURONET -- ITS EFFECTS ON THE U.S. INFORMATION
SYSTEM AND U.S. INFORMATION POLICY

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EURONET is a European information network to link the nations of Europe together in providing access to data bases. The plans are for EURONET to become operational in late 1977. Many of the data bases involved are produced in the United States and currently have licensing agreements for European agencies in some of the countries involved. Also, U.S. systems such as Lockheed and System Development Corporation are available in Europe. The development of a European network has implications for many segments of the U.S. information community. This session will present responses from various segments of the U.S. information community to these developments.

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