

Published quarterly  
on behalf of the  
DGXIII:  
Telecommunications,  
Information Industries  
and Innovation  
Responsible editor:  
Peter Popper  
European Institute for  
Information  
Management  
13, rue de Bragance  
L-1255 Luxembourg  
Production:  
Éditions Guy Binsfeld  
14, place du Parc  
L-2313 Luxembourg  
ISSN 0257-4373

# Esprit Information Exchange System

# iesnews

## Issue No 4, June 1986

### Late News

*During the ESPRIT Proposers' day last May in Brussels, participants were given the opportunity to fill in forms aimed at indicating interest in identifying partners for jointly submitting a proposal for ESPRIT.*

*These forms, collated, constitute a valuable information possibly of use beyond the original intention in relation to the July 1, 1986, ESPRIT call of proposals.*

*They can be made available by CEC/DG XIII in Brussels. Those*

*interested should write to Mr. P. Katz, CEC/DG XIII, A25-7/2, B-1049 Brussels, and ask for Research*

*Partner location information for all or one of the 4 ESPRIT areas*

*(Advanced Microelectronics, Software Technology, Advanced Information Process, Computer Integrated Manufacture).*

*No forms were submitted for the Office Systems area, as no proposals one invited to this sector of ESPRIT presently.*

*Plans are underway to transfer this type of information to a computerised on-line database available on a year-round basis.*

*RARE, Reseaux Associés pour la Recherche Européenne, was formally founded on the 13th June See Page 10 for details on RARE.*

The Commission has recently authorised a study under the auspices of the ESPRIT program to evaluate the requirements for the electronic message-handling service of the ESPRIT community's I.E.S. (Information Exchange System).

Called HERMES (survey and trends for the Handling of EspRit MESages), the 9-months study will be performed by FISCHER & LORENZ, a Danish consulting firm within the area of data communication. Completion of the study in October 1986 will assist ESPRIT in the specification of a message-handling system, which aims to provide the capability of exchanging electronic messages within the Europe-wide I.E.S. community. These guidelines will be based on a synthesis of the needs of the I.E.S. user Community, tempered with a realistic assessment of message-handling trends in the marketplace.

## The Hermes Project

### Project Background

One of the most difficult problems today facing organisations wishing to provide a general message-handling service to members who each have their own (different) electronic mail systems, is the choice of a system providing both the best possible service and the most effective access for all members.

The Information Exchange System (I.E.S.) currently provides all ESPRIT participants in Europe with the means to exchange messages by direct access to electronic mail systems (the computer-based mailing and conferencing system EuroKom and UNIX \* Mail accessed through a server based in Dublin).

As one of the objectives of the I.E.S. is to migrate from those services to a comprehensive message-handling system, a significant part of the study is to investigate the effects of emerging techniques and standards for the interconnection of different electronic mail and message-

continued page 2

LIBRARY

### Late News

#### **The Second Phase of Esprit.**

*A recent report of this title („Communication from the Commission to the Council", COM(86)269) outlines the objectives of this program, which will also include some basic research and allow participation from EFTA countries. Copies are available from O. Micheli, Service Porte Parole, Berl 1/38, B—1049 Brussels.*

#### **First Full Implementation of OSI/ISO Model.**

*The first successful implementation of the seven —layer OSI Model has been reported in the transfer of full library catalogue data between two North American Universities.*

#### **Videotex in Europe**

*Recent data compiled by the European Institute for The Media indicate that the number of subscribers in Europe is negligible: apart from France (35) Austria (2.6) and Sweden (1.2 per 1 000 inhabitants), the figures are less than one per thousand. (The same report also mentions that schoolchildren spend more time watching TV than in school).*

handling systems, and the time scales involved. The importance of the CCITT X-400 series of Recommendations for message-handling systems together with continuing standardisation work in this field is undeniable for the future. However, the problem of here-and-now still remains, and will remain until X-400 systems are established firmly in the marketplace.

Furthermore, the study will concentrate on two other areas:

- User services comprising value-added services (directory, archive, news etc.), text composition facilities and user interface.
- Interworking with a variety of message-handling and electronic mail systems, enabling a large user population to be served.

## Feedback

The 9-months study incorporates two large-scale investigations. The first sets out to identify the current and future needs of user organisations, groups and individuals in the I.E.S. user community. It is essential to consolidate user's needs and strategies at this stage. Many users have integrated office automation systems, incorporating sophisticated message-handling services. As HERMES investigates how interworking can be achieved between these heterogeneous systems, Fischer & Lorenz is looking forward to positive feedback from research organisations, and shall appreciate contributions and help with their investigations.

The second investigation takes a pragmatic view of the marketplace by requesting vendors of relevant products or services to describe their current developments and product extensions. It is vitally important to base the guidelines for the I.E.S. infrastructure on an accurate and comprehensive analysis of available products and trends in the commercial marketplace.

The impact of the study will undoubtedly reach beyond the large I.E.S. community, which comprises many of the major European vendors. Thus it is likely to influence both private European message-handling services and the future public services offered by the European Teleadministrations. Therefore, Fischer & Lorenz is looking forward to similar feedback from vendors to that from the research organisations.

Contact person:

Ms. S. Hamer

FISCHER & LORENZ  
Vangede Bygade 65  
DK-2820 Gentofte  
Tel: +45 01-68 31 00  
TELEX: 39156 peter dk  
TELEFAX: +45  
01-65 02 88 DAN BROKER  
EUROKOM: Sue Hamer

<sup>\*)</sup> a registered trademark of Bell laboratories

# CCITT

An Overview and  
Telecommunication  
Activities



## A. INTRODUCTION

COST (European Co-operation in the Field of Scientific and Technical Research) was established in 1971 as a framework for the preparation and implementation of European projects involving applied scientific research. The initiative was taken in 1964 by the Council of Ministers of the European Communities when it set up a committee to examine the possibilities of technological co-operation in Europe. In 1965 this committee formed the PREST Working Party which by 1969 drew up proposals for a total of 47 co-operative projects in seven research sectors. Subsequently European countries from outside the European Community were invited to participate in co-operative actions of the type proposed. In November 1971, a meeting was held of Ministers from a total of nineteen European countries, being all the European OECD Member States, and a representative of the Commission. At this meeting COST was established and actions set in motion for the commencement and implementation of the first seven COST projects.

Each of the nineteen member countries of COST enjoys the same rights and privileges whether it is a member country of the European Community or not. In addition the European Community as an entity participates in COST actions and projects. The COST secretariat is provided by the General Secretariat of the Council of the European Communities, with technical and scientific support from the Commission.

## B. MANAGEMENT OF COST

The COST Committee of Senior Officials (CSO), which was formed in 1970, is a permanent body responsible for the overall management of COST. It is composed of the representatives of the nineteen member countries and a representative of the Commission. It meets on average four to six times each year.

## C. COST PROJECTS

From the viewpoint of international law COST is not an international organisation, but rather an international association with an objective set of rules and a number of jointly determined obligations. For each COST project the form of co-operation is therefore defined in simple purpose built agreements.

Most COST projects aim to promote basic applied scientific and technical research and are in the nature of pre-competitive research, falling somewhere between fundamental research and development work aimed at defining new products. In a few cases, however, COST projects have led directly to the development of new products. A notable recent example of such a project was the telecommunications project COST 211, Redundancy Reduction Techniques for Visual Telephone Signals, which resulted directly in the development of the so-called COST 211 codex. This operates at 2 Mbits and is used extensively for videoconference applications. It

has been adopted as a European CEPT telecommunications standard and is manufactured in France, Germany and the U.K.

In general, COST projects are used to progress and co-ordinate research to progress and co-ordinate research programs, either existing or proposed, at a European level, dealing with problems and activities of a basic type which fall under the following headings :

- (i) problems which are intrinsically of an international dimension ;
- (ii) problems which exhibit similarities for a number of countries and where these are amenable to combined action, and
- (iii) problems which when solved provide inputs for harmonisation at the European level.

The technical subject areas of COST projects fall into the following sectors of research areas :

- 1 : Informatics
  - 2 : Telecommunications
  - 3 : Transport
  - 4 : Oceanography
  - 5 : Metallurgy and Material Science
  - 6 : Environmental Protection
  - 7 : Meteorology
  - 8 : Agriculture
  - 9 : Food Technology
  - 10 : Medical research and Health
- Since the establishment of COST in 1971 a total of 57 COST projects have been implemented or are currently operational. Research Area 2, the Telecommunications Area, contains by far the greatest number of projects with a

total of 18, while Research Area 5, Metallurgy and Material Science, comes second with 8 projects. The overall average number of participants per project is eleven.

## D. Telecommunications Projects

Telecommunications projects have become an important part of COST activities in recent years. A total of nine COST telecommunications projects were implemented and have terminated activities since the start of COST in 1971. At present there are nine operational projects and all, except one of these, have commenced operations in 1984 or 1985.

Those projects which are currently operational or have recently finished can be regarded as falling into the following main areas:

- (i) Projects dealing with telecommunication networks:
  - COST 201, COST 214, for network planning activities
  - COST 202, COST 202 BIS for digital network development activities.
- (ii) projects dealing with telecommunications system studies:
  - COST 206, COST 215, for optical fibre systems,
  - COST 207 for land mobile radiocommunications,
  - COST 205, COST 210 for radio propagation.
- (iii) projects dealing with telecommunications technology developments:
  - COST 211, COST 211 BIS, for redundancy reduction for video transmission,

- COST 206, for coding of high definition television,
- COST 204, COST 213, for new antenna development.

(iv) projects dealing with information services:

- COST 209 for man-machine communications.

A major responsibility of the technical committee Telecommunications (TCT\* is the identification and development of new COST telecommunication projects). Proposals are made by and through TCT members, the Management committees of existing projects make proposals and working parties are set up to develop particular ideas for projects. A major activity in recent years was the holding by the TCT of a seminar on 'Future Changes and Progress in the Field of Telecommunications' in Rome in October 1981. Ideas for new projects emerged from this seminar and a schedule containing about 80 subject areas was drawn up, arranged logically within 13 groups and subgroups.

It is planned to hold another seminar or workshop during 1986 which would perform a somewhat similar role in project subject area identification, and which will esta-

lish the basis for the development of COST projects during the five year period 1987-1992.

Two major thrusts in project development taken by the TCT during 1985 were in relation to the development of projects in the areas of optical communications and in telecommunications facilities for disabled people. With the completion of the COST 208 project on Optical Fibre Communication Systems in December 1984, which dealt with the subject in an overall manner, the objective was to focus on specific areas of optical communications, and to develop projects to meet the requirements where there was a common interest in a number of countries. Former COST 208 Management Committee members and special working parties were used to develop projects and in due course five projects emerged. COST 215, High Bit Rate Optical Fibre Systems, commenced operations in July, 1985. Further three projects have been approved and are ready for signature: COST 216, COST 217 and COST 218. Another project, COST 222, is currently being formulated.

## E. THE NINE OPERATIONAL COST TELECOMMUNICATIONS PROJECTS

### 1. COST 202 BIS: Wideband digital local telecommunications networks.

This project is concerned with the development of digital techniques which would be used in the long term in wideband digital local telecommunications networks to provide a comprehensive range of

customer services and facilities, both wideband and narrowband.

### 2. COST 206: Coding and transmission of high-definition television signals.

The objective of this project is to develop methods and technologies to be used for the coding and transmission of high-definition



television (HDTV) signals as they are expected to be standardised in Europe.

### 3. COST 207: Digital land mobile radiocommunications

This project has as its objective the co-ordination of research activities and stimulation of new studies on digital land mobile radiocommunications, in support of an aim through the CEPT-GSM Special Group to develop a harmonised European mobile radio telephone service which would become operational by the early 1990's.

### 4. Cost 209: Man-machine communications by means of speech signals.

The ultimate objective is to provide man-machine dialogue systems in the telecommunications network which perform as well as a normal telephone conversations, but the project itself has more limited goals. Two working groups have been set up dealing with speech synthesis and speech recognition performance.

### 5. Cost 210: Influence of the atmosphere on interference between radio communications systems at frequencies above 1 GHz

The objectives of this project are to:

- (i) collate and assess the results of existing European activities in the field of propagation relating to radio interference;
- (ii) promote and co-ordinate new experiments in this field;
- (iii) produce a comprehensive unified data bank; and

(iv) develop and evaluate models to serve as a basis for radio planning.

### 6. Cost 211 bis: Redundancy reduction techniques for the coding of broadband video signals

The aim is to apply redundancy reduction techniques to the digital transmission of broadband 625 line colour video signals. The specific applications are television transmission and videoconference.

### 7. Cost 213: Electronically steered antennae for future satellite and terrestrial communications

The objective of the project is to co-ordinate and advance research into phased array antennae for new fields of application. The project program involves the following main elements:

- (i) the analysis and development of microchip array elements;
- (ii) the examination of low loss beam forming components and networks;
- (iii) array analysis and synthesis unified software.

### 8. Cost 214: Methods for the planning and evaluation of multiservice telecommunication networks

The main objective of this project is to co-ordinate and advance research into methods for the design and evaluation of multiservice telecommunications networks so as to enable balanced network development.

### 9. Cost 215: High bit rate optical fibre systems

The aim is to develop specifica-

tions for the optical fibre systems for the transmission of signals in the Gbits range using intensity modulation, direct detection or coherent techniques, sub-system assemblies of transmitters and receivers, and their application for practical communication systems.

## F. PROJECTS IN 1986

Proposals for a total of eight new COST telecommunications projects have been developed to a stage where it is expected that they will become operational during 1986. They are as follows:

COST 212: Human factors in Information Services

COST 216: Optical Switching and Routing Devices

COST 217: Optical Measurement Techniques for Advanced Optical Fibre Devices and Systems

COST 218: Material Science and Reliability of Optical Fibres and Cables

COST 222: Waveguide Theory for Integrated Optics

COST 219: Future Telecommunication and Teleinformatics Facilities for Disabled People

COST 220: Communication Protocols for Terminals for Use by Disabled People

COST 221: Telephone Amplifications for the Hearing of Disabled People

## G. RELATIONSHIPS WITH CEPT AND RACE

In the development and implementation of COST telecommunications projects, a close relationship is maintained with other relevant European organisations in order to ensure that there is no duplication of effort, and to endeavour to have COST activities complement, where appropriate, the work of these organisations.

A particularly close relationship exists between COST and CEPT, the organisation of European Post and Telecommunications Administrations. In the past the Long-Term Studies (ELT) Working Group of CEPT has reported to COST on telecommunications requirements, and the choice of subject areas for new projects is providing important inputs to CEPT standardisation work.

There is obviously a need for a close relationship between COST activities and the programs of the European Community whether the Community as an entity is a project participant or not. In the telecommunications sector the European Community's RACE program is currently the most relevant in this respect. Two important technological activities proposed under this program are the development of an Integrated Broadband Communications Network (IBC) for Europe, which would be introduced about 1995, and the development of a second generation cellular mobile radio telephone system for Europe, which would be introduced about 1990. COST telecommunications activities are expected to play an

important role in these development activities. Six of the nine operational COST telecommunications projects are currently studying and researching subject areas directly relevant to the RACE program.

## CONCLUSION

Over the years COST has provided a very useful framework for co-operative scientific and technical research in the telecommunications sector in Europe. The flexibility and informality of such actions provide a good basis for the development and implementation of projects which are relevant, dynamic and cost effective. The "lever effect" of a typical COST telecommunications project has been especially appreciated, in that each participant in the project while providing a limited designated input to the project, can obtain access to all the project results, representing the sum of the expertise of a number of experts from different countries. The extensive network of research, contacts and the personal interactions which have been built up, because of COST actions in telecommunications, has contributed significantly to practical research co-operation and co-ordination. In the projects the participants demonstrate through their own financial, manpower and other contributions their conviction that the work being done in the various projects is relevant and worthwhile. The "à la carte" arrangement, whereby a country takes part in certain selected projects, is recognised as an important advantage, in view of

the often scarce telecommunications research and development resources which are available in some countries. Thus the COST type of arrangement is often more efficient and effective than bilateral arrangements for co-ordinated telecommunications research and development.

It is expected that the existing nine operational COST telecommunications projects will increase to seventeen by the end of 1986 with a further significant increase during 1987. Improvements in the COST method of working currently being considered will be implemented, in regard to project identification, formulation and implementation, and in making the best use of the results and outputs from the projects. The broadening of the participation in projects will be progressed. The aim is to ensure that COST will continue to contribute effectively to telecommunications development in Europe, and will meet the requirements of the changing telecommunications environment which will emerge in Europe over the next 10 years.

Acknowledgement is made of the use of material from various COST publications and documents in the formulation of this paper.

J. W. DWYER

(Telecom Eireann, Dublin)

Based on paper to EUROCON 86, Paris, April 1986.

(\*: The COST Technical Committee Telecommunications (TCT) is made up of representatives of COST member countries and advises the CSO on the preparation and implementation of COST Telecommunications and teleinformatics projects.)



## **INTUG: The International Telecommunica- tions Users Group**

Founded in 1974, and enjoying observer status at CCITT, INTUG exists to promote user interests at regional and international levels and to give users a voice in policy discussions. The four major issues which occupy INTUG's attention are

- monopoly authority and the rights of users
  - free access to telecommunication networks
  - freedom in use choice of equipment and services
  - constructive cooperation between network providers, equipment suppliers and users.
- Policy formation is influenced in various ways :
- exchange of information between countries
  - the observer status at CCITT
  - liason with other international groups
  - liason with the Commission and OECD
  - special studies.

Much of the effort is in „watchdog” activities, involving monitoring of international tariffs, advocating cost-related tariffs, opposing cross-subsidies (i.e. postal charges subsidised by telecommunication tariffs), and suggesting using telecommunication revenues solely to improve available facilities. Membership is worldwide and includes national user associations (including videotex user groups),

multinationals (e.g. Shell), computer manufacturers (e.g. IBM, ICL), banks and other financial institutions, national airlines etc.

Further details can be obtained from George McKendrick, c/o Bank of America, 26 Elmfield Rd, Bromley, Kent BR1 1LR.

## **CD-ROM Standardisation**

In the last issue we reported on an European initiative which is supported by the Commission. As a result of this, and the enthusiastic support of a few individuals, it proved possible to prepare, transmit and get accepted European input into the draft standard which will be released as an (American) one by the National Industry Standards Institute and hopefully will also find speedy adoption by ISO and CEN/CENELEC. A further meeting of the Optical Disk Forum will have taken place in Luxembourg on May 16, where full details and implications will have been announced and discussed. All thus appears well, but whilst all this was going on, Philips (who were one of the prime movers in the above activities) and Sony have announced CD-I (I for interactive) which is an agreed provisional standard for multimedia applications using compact disk technology and directed mainly to interactive usage in home consumer and educational markets: CD-I disks will permit sound, graphics, texts and programs to be combined into fully interactive applications. The standard also specifies an intelligent decoder. Products (disks and players) are expected within the year.

## **Editor's Corner**

These is a reader letter in this issue for which many thanks. It should however be noted that the views expressed are not necessarily those of the Task Force or the Editor. I have also had several calls from readers and colleagues pointing out that user acceptance of electronic mail and Videotex is related to a keyboard usage reluctance: on the one hand, managers may believe that their status is reduced by mere keyboarding and on the other hand, the majority of the population do not know how. The only country where Videotex (and other online services) have taken off is France with its Minitel — any suggestions as to the possible reasons, some Gallic characteristic or the pay-off from an elitist educational system?

In the last issue (No. 3, April 1986) the Portacom article reported erroneously that Portacom is the main communication tool for ESPRIT. However, it is EuroKom at University College, Dublin, which serves as the ESPRIT mail and conferencing service. The KOM software implemented on a DEC machine is used. For details of the EuroKom services, see the various contributions published in previous and the current issue of the Newsletter.

P.S. The next issue closes in the first week of July, and the one after that will appear for the Technical Week. Contributions must be received by August 29 for inclusion in that number.



## GENERAL :

We now have 1540 registered users, and the number of messages sent has reached 87,000. Growth over recent months has been rapid, with an average increase of 60 users per month. Following strong interest at the Proposer's Day in Brussels in April, we expect this trend to continue, with a steady influx of new participants in ESPRIT.

The system has coped well with the increase in traffic, but we have had a number of outages during April, due to power supply problems at the site. Following extensive trouble-shooting and corrective work in recent weeks, we are assured by DEC that the power problems have been resolved.

We received a new release of the EuroKom software in April, and have been testing it in depth since then. Users running the test version have encountered a few minor problems that we will need to fix, but long-standing problems (such as glitches in the review command) have disappeared with this version. We hope to release this version at the beginning of June.

Some extra facilities (briefly) to be expected are :

- LIST LETTERS will show the outstanding letters, senders, and subjects, allowing users to choose from their traffic.
- A Read From PC command, which we have reservations

about. We would prefer to use Kermit, given the error-protection features.

- A Logout command, which brings you immediately out of EuroKom AND out of the computer system
- Some new personal flags.

## TELEX TRIALS :

Telex inter-connect has now been under test since early April, and feedback and suggestions are under evaluation. So far, 18 users have participated in trials, and have sent a total of 103 telexes to most European countries and beyond.

In general, user reaction has been positive. The syntax required within the EuroKom letter, to forward to telex, has been found to lack flexibility, and we are considering ways of improving this aspect of the interface.

## QZ-Com to EuroKom Interconnect :

The systems enhancements required here have been completed, and the software has been tested with York University and works well. As we did with the Telex software, we will be identifying a number of user sites to field-test the interconnection, with testing commencing during May. Likely release time to all users, assuming

no major problems are identified during testing, is foreseen for the end of June.

## EuroKom to U.S. Networks :

The initial problem here was to establish a contractual relationship with an appropriate American network. We have now signed a contract with Mailnet, and work on the Inter-Mail software has commenced. We are targeting July as the Beta-Test period for this facility.

## User Questionnaire :

Of the 500 questionnaires sent out, we have received 200 replies. Although, as surveys go, this is a good return, we had hoped for a better response. We are considering a re-issue later this year, as the user base is still growing rapidly, and the views of recent users need to be factored in.

Brief highlights of the results seen so far :

- Of the active users, 60 % access EuroKom once per day, 35 % once per week, and only 5 % less frequently than once per week.
- Of the service enhancements mentioned, level of interest was as follows :



| Feature :         | Users Strongly Interested : |
|-------------------|-----------------------------|
| File Transfer     | 42 %                        |
| Software Download | 12 %                        |
| UNIX Mail         | 43 %                        |
| Telex             | 28 %                        |
| US Networks       | 23 %                        |
| X-400 Interface   | 11 %                        |

— User Satisfaction was reported as follows :

|                    | Poor | Adequate | Good |
|--------------------|------|----------|------|
| User Friendliness  | 39 % | 56 %     | 5 %  |
| Response Time      | 37 % | 46 %     | 17 % |
| User Documentation | 55 % | 41 %     | 4 %  |
| News Availability  | 25 % | 66 %     | 9 %  |
| Problem Resolve    | 24 % | 59 %     | 17 % |

Obviously, we are not happy about these assessments. For many of the criteria, we feel things have improved since the questionnaire was circulated (January). In particular, response time since the upgrade will have improved. The new documentation will certainly be welcome and the massive efforts on the Help Desk procedures are beginning to pay off.

Of the equipment used to access EuroKom, we have representatives of practically every vendor. Interestingly, 30 % of our users currently use a PC of some sort, and a further 10 % plan to move to a within the year.

## Unix Service :

Registrations on the Unix service have now reached 151. Work is proceeding on the interconnection of EuroKom and Unix. As a basis for this bridge, we have installed MMDF (Multimedia Memo Distribution Facility) on the Unix machine. This software meets our requirements for a message-handling system at the Unix side of the connection and we are now working on the file transfer protocol at the EuroKom side.

## User Manual :

Packaging and draft text have been submitted to the Commission for evaluation, and we are proceeding to type-set the material, with a target of supplying Commission users with type-set versions at the end of May, with final distribution by early July.

For any further information on the above issues, or general EuroKom information, please contact :

EuroKom  
 Help Desk (Tel. No 0035-31-69-78-90)  
 UCD Computer Centre  
 Belfield,  
 Dublin 4  
 Ireland

## Esprit Technical Week 1986

This year's Technical Week will take place from Sept. 29th to October 3rd, so keep these dates free and make a note of them in your dairies.

# RARE

*The RARE Association, Réseaux Associés pour la Recherche Européenne (or in English: Associated Networks for European Research), was formally founded in Amsterdam on the 13th. June 1986, just over two weeks after its successful second European networkshop held in Copenhagen (26th. — 28th. May). This is the culmination of a series of initiatives within European computer communications circles over the last three years, actively supported and encouraged by the IES activities of the ITT TF, now Directorate General for Telecommunications, Information Industries and Innovation (DG XIII). The Commission supports the aims of RARE, and participates actively in its administration and technical working groups. The following article provides details on the RARE organisation.*

RARE is a European organisation of national research networks and their users, and will support a wide range of network-related activities, in order to enable scientists to communicate all over Europe and to use information or computational services on a European scale.

It is the objective of RARE to establish a communication *infrastructure*. This will *not* be achieved by building a new network with a lot of gateways to the existing ones, but by connecting and unifying all the national research networks of the European countries. By its nature RARE is in a position to achieve this.

RARE supports the principles of Open Systems Interconnection, as defined by the International Standards Organisation, to guarantee interconnection of the widest possible range of systems. But the adoption of OSI standards alone is not enough to ensure

communication between users. Because OSI standards are intended to be used in a wide variety of situations, they contain options, and arbitrary choice of these options would prevent interworking! One can build bridges and gateways to overcome incompatibilities, but from the user's point of view this is not an adequate solution: the more services that are offered through networking, the more gateways would be necessary and the greater the inconveniences that would have to be accepted. *It is in the user's interest to have facilities at his disposal that offer the same functionality for communication on a European scale as for communication within his country.*

From the user's point of view interworking of networks is a necessity. Functional standards, which specify how to make the related choices in standards to

achieve some particular style of working, are a step in the right direction, and RARE supports fully the activities within CEN/CENELEC to establish such standards.

However, before an effective community of users can be established, decisions must be taken on operational and organisational matters.

It is in this area that RARE has a major role to play.

## why RARE?

In many European countries some form of academic network service has been introduced. These services are based on a variety of technologies, depending on local (or national) circumstances. As a result, external and international communications are troublesome. In almost every European country programs exist to harmonise networking facilities on a national scale, but there is a growing demand amongst European scientists for cross-border communications, preferably through the use of existing public telecommunications facilities.

## the membership of RARE

According to its statutes, there are four different types of membership:

- 1- Full National Members
- 2- Associate National Members



### 3-International Members

### 4- Liaison Members

*Full national members* of RARE are national academic and research network organisations. The following countries are eligible to become full national members :

|         |                |
|---------|----------------|
| Austria | Luxembourg     |
| Belgium | Netherlands    |
| Denmark | Norway         |
| Finland | Portugal       |
| France  | Spain          |
| F.R.G.  | Sweden         |
| Greece  | Switzerland    |
| Iceland | Turkey         |
| Ireland | United Kingdom |
| Italy   | Yugoslavia     |

*Associate national members* are national academic and research network organisations in other countries, which support the objectives of RARE,

*International members* are international organisations which support the objectives of RARE and are closely associated with the use, co-ordination or provision of an infrastructure to the benefit of science and research,

*Liaison members* are organisations which are involved in networking and related matters.

International members will be — for instance — CERN and ECFA.

## the activities of RARE

The ongoing activities of RARE are :

- identification of protocols and selection of implementation options

- selection of data transmission facilities

- directory services

- information services

These activities are progressed by RARE technical working groups. RARE organises a European Networkshop every year. The first European Networkshop was held in May 1985 in Luxembourg, where the decision was made to establish RARE. The second European Networkshop has been held in May 1986 in Copenhagen, and preparations for the next networkshop in Madrid are underway.

The networkshops of RARE are organised as a private party, and the attendees will be invited by the representatives of the full national members, to maintain a high technical level of discussion.

## the role of RARE in COSINE

For the last three months RARE has been drafting the technical specification for the infrastructure

of the European Research Network project *COSINE* (Co-operation for Open Systems Interconnection Networking in Europe) of EUREKA. This preparatory work which constitutes the initial planning phase of the project is carried out in collaboration with other relevant bodies, particularly the CEC.

The RARE Working Groups are helping to develop the specification of the COSINE project. The work areas are :

- X-400 based Message Handling Systems

- File Transfer, Access, and Management (FTAM)

- Directory and Information Services

Up-to-the-minute and complete information about RARE can be obtained from :

The RARE Secrétariat,  
De Boelelaan 873  
1082 RW Amsterdam  
The Netherlands

*telex* : 18934 JMA NL

*telephone* : +31 20 462243

**Make sure of receiving your own free copy of IES News regularly**

Write to :

The Editor  
IES News

c/o European Institute  
for Information Management

13, rue de Bragançe  
L — 1255 LUXEMBOURG

Please let us have your address and any other names and addresses to whom we should send IES News.

# Letters to the Editor

Dear Sir,

A visiting American from the information community remarked to me the other day that this had been his first re-visit to Europe since 1961; the most striking change he noticed, he claimed, was that the Europeans appeared to be now more conscious of being European and less obsessed with nation-state isolation and independence.

This factor may, of course, be a by-product of many aspects of current American external policies. No visitor to many recent European conferences could have failed to notice the amicable absence of national demarcations in either the speakers or the conference attendees; no one working in the information industry and attending its numerous meetings and exhibitions can have failed to notice the international nature of the achievements — and the problems.

The community concerned with professional information delivered electronically is, of necessity, an international one; for better or for worse, the assembly of accurate data banks and data bases containing highly selective and evaluated professional information, and the subsequent delivery of this information via computers, telecommunication networks, microcomputers, optical disks or whatever, is an industry that requires a scale and resources that exceeds those available from smaller geographic areas; the electronic information industry

requires the economics of large scale.

The professional information community, at the user and supplier level, is increasingly dismissive of the ancient barriers of national frontiers, national languages and national currencies. Happily, services are increasingly being used — or neglected — on the grounds of their utility rather than on nationalistic grounds. Sadly, but understandably, the ancient barriers are still fully manned by heavily-armed national politicians: the cries for "a national host!" or "our national language" are heard frequently in political quarters, rarely if ever from the user camp. Thus most — if not all — of the disasters that have be-dogged the information community's use of European resources can be laid firmly at the doors of national politicians: we may catalogue:

— the failure in the early 1970s to order national PTTs to allow the interlinking of embryo European non-PTT networks, leading to Europe's late entry in the continent-wide data network scene

— the reluctance in the early 1970s to encourage and consolidate the position of ESA-IRS, at that time Europe's only hope of averting almost total reliance on Dialog and SDC

— the slow, reluctant progress in the creation of Euronet, followed by its hasty dismantling in favour of a hotch-potch interconnection of locally-managed national PTT services

— the connection of one of Germany's state-run hosts to CAS-Online even before the equally possible alternative connections to Questel or ESA-IRS had even been given serious consideration

— the continuing unwillingness of national politicians to take the slightest positive interest in the problem of Europe's expensive, erratic and unreliable international data networks, whilst continuing to support expensive and nationalistic public monopolies,

— the persistent political obstruction of the viable growth of any large-scale computer industry in Europe by extravagant overt or covert subsidies to too many national companies

— the same political obstruction of the viable growth of any large-scale telecommunications supply industry in Europe because of the same short-sided policies as above.

The list is a long and damning one, and the list above is only a sample; it is, unfortunately, far from complete.

So the British will divert their dwindling research and development money into producing a British high-speed train; in fact, they will do anything rather than buy a French one. They will also continue an age-long policy of refusing to develop the new



generation of digital telecommunication equipment in combination with the French. The excuse is always "local employment" but, if the history to date of the politicians' excursions into employment-creation is any guide, the net result in ten years time will be Europeans in Japanese high-speed trains communicating via American equipment, the respective British and French railway and digital communications industries having failed through "lack of viable scale". But then, what politician alive cares about ten years time? I have concentrated on British iniquities since, as an Englishman, I cannot then be accused of chauvinism. But let no one imagine that the politicians looking after the French and the Germans and the Italians and the Spanish are virtuously white].

There is perhaps a real need in Europe for a non-national, unbiased forum where politicians of all creeds and shapes can attempt to gain a European perspective, and where they can be prevented from plunging into some of the more destructive adventures listed above. "Check Out Your Wilder Projects Before You Implement Them — They Might Have a Domino-Effect and Put Europe Back Ten Years" would be an advertising message to national politicians. Such a body could be an impartial source of dynamic technical and political expertise.

At least we might then sleep easier in our beds at night.

H. COLLIER  
(LEARNED INFORMATION,  
ABINGDON, U.K.)

(EDITOR'S COMMENT :  
ARE YOU NOT FORGETTING  
THE EXISTENCE OF THE CEC,  
OECD or EEC)

# BOOK REVIEW

## Formex-Formalised Exchange of Electronic Publications

C. Guittet (Ed.), Luxembourg ;  
Office for Official Publications  
of the European Communities,  
'New Technologies — Project Management' Department,  
1985, ECU 112.28, 243 pages. ISBN 92-825-5399-X.

The goal of this book is to describe a system being used for exchange of Official Publications within the European Communities. The system name is FORMEX (Formalised Exchange of Electronic Publications) and is mainly based on the combined application of two different international standards for interchange of data in texts: ISO 2709 (Format for Bibliographic Information Interchange on Magnetic Tapes), also known as the CCF-Unesco Standard and originally drafted by the data-base publishers in the International Council of Scientific Unions — Abstracting Board (ICSU-AB), and ISO 8879 (Text Preparation and Interchange — Processing and Mark-up Languages), also known as SGML. The reason for this combined usage of two standards, which basically are being used for similar things, is given in the introduction of this book: the CCF-Unesco standard 'has been popular for many years amongst information scientists and librarians and is widely used by data-base producers and hosts'. Its accent lies on the accessibility via pointers to parts of bibliographic information. The SGML standard however, mainly meets 'the requirements of the publishing industry' and is focussed on

the description of full text in such a way that it can be 'both created and read by human beings as well as by machines'. So the main objective is the transferrability of text to different output presentations and not accessibility.

The advantage of Formex is that each standard is being used where it is strong. In the Introduction it is mentioned also that neither of the two different communities

making use of either CCF-Unesco or SGML is well aware of the alternative approach. This is not so, for familiarity with the brand-new SGML standard is growing fast and is becoming more known by librarians and information scientists.

The book consists of 7 chapters and an appendix consisting of 5 chapters. Chapter 1 is an introduction already reviewed above and a Guide to the Manual, which is an abbreviated contents list.

Chapter 2, Methodology, opens with a list of definitions of the vocabulary used in this manual. An excellent attempt to be concise, although it is hardly possible to be complete. The definitions are referenced to the sources, which are mainly the two aforementioned standards. Therefore the majority of definitions are derived from the SGML standard

but lack clarity, yet this is due to ISO 8879. For example the definition of an SGML parser: 'a sophisticated software program which processes an SGML marked-up document' could be better expressed: 'a program which validates and refines SGML marked-up documents based on a document declaration'.

Chapter 2 continues with a description of the system architecture and implementation of both standards.

The system architecture is described based on an example of one printed paper and illustrated in one figure. The idea of the Formex system is to process two types of input:

- text stored in a computer system and coded with CCF
- text input by means of a word-processor, supplied with SGML codes.

Both files are upgraded to Formex files, which means CCF supplied with SGML codes or SGML supplied with CCF codes. The Formex file is used for both output on paper (printed form) and data-base publication.

The implementation of CCF and SGML is described in the last part of chapter 2. Briefly, Formex-CCF is a subset of full CCF and Formex-SGML is an application of SGML (SGML can be compared with a grammar, an SGML application is a document description and a set of codes conforming to the grammar of SGML). Conversion from CCF to Formex is relatively simple as is conversion from Formex SGML to full Formex. A conversion from other SMGL applications via Formex SGML to full Formex must be possible and a positive test of the latter would prove the validity of the SGML standard.

Chapter 3 handles processing of records, divided into a section on CCF processing of records and one on SGML processing.

Chapter 4 is an interesting attempt to describe physical transfer by means of the different media, using the standards where possible and this is one of the advantages of the Formex system.

Formex files are transferrable in three ways:

- as magnetic tapes
- via public data networks
- on videodisks.

(but no definition for videodisks is given.)

Of interest is the description of file transfer over (public) data networks. A subset of the 'CEC File Transfer Facilities' is being used which is based on the U.K. standard NIFTP. The description of file-transfer initialisation, data transfer and termination is the best section of the book: it is written in a clear way so that readers unfamiliar with communication protocols have a nice overview of how and what is done in communication.

Chapters 5 and 6 give an extensive overview of data elements in CCF (chapter 5) and in SGML (chapter 6). Chapter 7, references, contains references to International standards, some National standards, CEC standards and bibliographic references. Appendices contain layouts of character sets, a good explanation of SGML (33 pages), a description of formats used (e.g., date format), and some tables with codes.

With Acknowledgments to  
"Espy", Elsevier

IES News is your newsletter. We want your comments, views and contributions. The next issue will again have a Correspondence column. All communications to

Peter Popper  
c/o European Institute for  
Information Management  
13, rue de Bragançe  
L — 1255 LUXEMBOURG

or via EuroKOM.



## Recent Developments on DFN-Information System (German Research Network)

Since the article on the Deutsches Forschungsnetz in Issue 2, further information about this important service has become available. Perhaps the most significant development is the implementation of an Information System which provides data on both the technical and organisational aspects of the network. This can be addressed via a Datex-P connection and the prototype version has been established by the Konrad Zuse Centre for Information Technology in Berlin (ZIB).

In the first instance, the system is intended to contain information on participating Institutions (brief descriptions of the respective organisations and subunits, such as separate institutes, departments, etc. and their computer centres), available resources (such as computer systems, high performance machines, data banks, information systems, special hardware such as VLSI or type-setting, and software), and networks (LAN's, gateways, regional networks). This will allow all DFN partners to know the details of facilities available elsewhere on the network.

The second purpose is the dissemination of technical data and documents by the DFN Association. At present, information is available on services, products, installations, projects and documentation which has been compiled by the central project team.

A further aim is to allow DFN users to provide data on their various interest groups, contact persons, staff and activities and thus to promote the free and rapid interchange of up-to-date information.

One of the main considerations in implementing the system was to make the user interface as simple as possible to allow potential users application of the system with minimal training. The system allows documents to be addressed directly by name and has browsing facilities.

At present it is installed as standard user program on a Siemens BS 2000 at the Freie Universität Berlin and can be accessed via Datex-P of the Deutsche Bundespost. The NUA is 45 300 202 05. The relevant network command is: O £ DIALOG 2/0 and the logon is: LOGON DFN, INFO. Usage is not restricted to DFN partners and the contact persons are J. Luegger (Tel. 030 88 42 99-31) or G. Foest (Tel. 030 88 42 99-36).

Some data have also become available on initial experience with services provided by DFN. Not surprisingly, the most intensive use has been of high performance installations such as the CYBER 205 in Bochum, the CRAYs at Stuttgart and Berlin, followed by data banks at the various "Fachinformations" Centres in the FRG or in the US and mail services, including naturally EuroKom.

User groups arranged by interest who are most active are physicists, information workers, chemists and electrical engineers, followed at a considerable distance by meteorologists, engineers, social scientists and doctors.

The list of DFN participants is growing and is slowly becoming an inventory of mainly German centres of research: it currently includes such diverse units as the Fraunhofer Gesellschaft, Institut für Deutsche Sprache, Allgemeine Elektrizitätsgesellschaft, Versuchsanstalt für Wasserbau und Schiffbau.

DFN also contributes to the proposal to combine the various national networks to give a Europe-wide data and communications network to serve the improvement of the infrastructure for European science. The network structures are to be based on the OSI concept to allow of the widest application and exploitation by all. With this object in view initial steps have been taken within the framework of EUREKA.

(Based on information supplied by  
DFN-Verein,  
Pariser Str. 4,  
D-1000 Berlin 15)

On numerous occasions, I.E.S. service users working in IT research projects for ESPRIT and other Community programs have requested a source of information from which they can obtain assistance in connecting with these services. The major problem they cited was the multiple rules existing in different countries for data connection and the difficulty in getting advice from local PTTs regarding communication assistance.

As of August 1 people may, by calling the number (352) 45 30 30 in Luxembourg, obtain answers to general technical and administrative questions concerning the access or the use of I.E.S. services.

## I.E.S. Help-line A New I.E.S. Service

The service will be provided initially on five days a week and be operational from 09.00 hrs to 18.00 hrs Central European time. Multilingual operators (French, English, German) will put callers into contact with the persons best able to help them, for example the service providers themselves, national or regional contact points or individual experts.

Users who have specialised technical problems should address those to the already existing user assistance facilities which shall continue to operate in parallel within each service.

Phone calls addressed to this help-line will be logged and enquiries may be followed up to establish that the caller has received a satisfactory response to his enquiry.

As new services are beginning to emerge under the ESPRIT/I.E.S. program for the European IT research community, this new help-line may provide an umbrella for all support units and a common enquiry point through which users, especially new ones, are assisted in accessing the individual services offered.

### **Future Events**

*European Symposium on  
the Long Term Future,  
Duttweiler Inst., Zurich,  
July 3-5, 1986,*

*International Workshop  
on Data Base  
Management, Office  
Statistique, Luxembourg,  
July, 22-24, 1986,*

*International Congress on  
cybernetics, International  
Association for  
Cybernetics, Namur,  
August 25-29, 1986,*

*International  
Communications  
Conference, International  
Institute of  
Communications,  
Edinburgh,  
September 11-14, 1986,*

### **Future Events**

*European Symposium on  
Utilisation of the Results  
of Public Research and  
Development. CEC,  
LUXEMBOURG,  
September 23-25, 1986*

*System Security, Online,  
London,  
September 30-October 2,  
1986,*

*Annual Conference of  
Gesellschaft für  
Informatik, Berlin,  
October 6-10, 1986,*

*The International ISDN  
Conference, Online,  
San Francisco,  
November 18-20, 1986,*

*International Online  
Information Meeting,  
Learned Information,  
London,  
December 2-4, 1986.*