Esprit
Information Exchange System

iesnews

Issue No 3, April 1986

Spain, one of the first countries in the world to have a public packet switched network, still does not have, however, an academic network that could be thought of as such. Perhaps one of the fundamental reasons for such an important lack has been the slowness of the endowment process for computing resources in university and research centres in the recent past.

This fact does not mean that there is no sort of connection whatsoever between academic centres, but rather that the one that exists is insufficient and is only of the terminal-to-computer type.

In order to explain briefly the present situation, we can divide the computer science resources of the Spanish universities and research centres into two large groups:

Academic Networks in Spain

1. General purpose and mainframe computers.
2. Minicomputers, microcomputers and other computer resources.

The first group is found in the Computing Centres of universities and is devoted to administrative operations as well as to numerical computation. Terminals are for a large part in the immediate vicinity, and others are in relatively near university centres. These access networks are of various types, including conventional telephone links as well as optical links, as in the case of the Polytechnical University of Madrid which has a multipoint network with 9 600 bps duplex links.

In addition, the Data Processing Centre of the Ministry of Education and Science has a central computer to which many terminals are connected, including those of the Ministry itself as well as those of the majority of the university computing centres. All the non-direct connections are carried over leased lines or switched lines, but none of them as yet uses a packet switched network. Connections between computers do not exist.

Late News

More Community Research Funding

In a press conference, Dr. Narjes announced details of Community research proposals to be submitted to a meeting of Science Ministers on April 8. It is intended to allocate 10,300 million ECUs during 1987-1991, of which 2,200 million are intended for ESPRIT, 1,000 million for Telecommunications and 700-900 million on the integration of Telecommunications and I.T.

ESPRIT Project Synopses

A series of six booklets giving ESPRIT Project Synopses with contact names and addresses has been issued by the Task Force and is available from the ITT TF in Brussels.

New Communications Processor

ITT Europe have released details of their 8255 Data Communications Processor, which is a protocol converter allowing low-cost ASCII terminals to be connected to asynchronous hosts or SNA. Other functions are concentration, switching between hosts and integrated packet handling in an X-25 network.

The second group, that is, personal minicomputers, etc., is distributed among the departments and research groups and operates in an isolated fashion. In some cases, these computers are used as terminals for access to the computers in computing centres or to international networks, through telephone lines.

The international connections are carried out by calling, through leased or switched lines, to an international node which the PTT has in Madrid, with an extension in Barcelona, and which is connected to the majority of the networks on an international level. It is also being planned to offer shortly this service through the public packet network, IBERPAC, using the X-75 interface.

Short-Term Needs

The Spanish scientific community is going through a period of expansion, due both to an increase in, and more rationalisation for, official aid to research and development, as well as to an increase in collaborative programmes with industry. This expansion is made possible by the growing active participation of Spanish scientists and researchers in programmes of an international nature. All this is leading to a rapid increase in sensitivity towards technological issues and towards a strong, generalised demand for a communications infrastructures, for national as well as international connections.

Therefore, over the last 12 to 18 months, many urgent requests for data communications have been made, and feasibility studies have been initiated on this issue, including the following:

Academic Networks in Spain

— Microelectronics. There is a national plan in which different groups participate, located on at least seven campuses in four Spanish cities (Madrid, Barcelona, Santander and Sevilla), with strong relations with another group in Lisbon. They have a great variety of software and hardware material, with a major focus on design (CAD).

— High Energy Physics. Within the National Mobilising Plan of High Energy Physics, a computer science connection is being thought about for eight resident groups in seven different cities. In the same manner, the connection of these groups with CERN is considered to be indispensable.

— University computing Centres. The Ministry of Education and Science has a project for interconnecting the computers of the different Computing Centres with the computer of the Data Processing Centre of the Ministry.

— Software Technology, Artificial Intelligence, etc. The Communities of ST, AI, and others, divided up among different campuses and Spanish cities, consider interconnection indispensable in order to share resources and experiences.

— Various universities and research centres are initiating feasibility studies or experimental projects for starting up local and regional networks, normally based on commercial products of one supplier.

— Supercomputer. The Ministry of Education and Science has ordered a feasibility study for establishing a supercomputer (Project ODIN) that would provide services for universities and research centres.

— EARN. There is an increasing penetration of this network in the Spanish university circles with a number of nodes already operating.

Harmonisation Plan: the IRIS Project

Foreseeing the risk that the variety of demands, described above, may lead to a proliferation of unconnected and incompatible networks, the Ministry of Education and Science decided, in collaboration with FUNDESCO, to set up a Working Group to elaborate a feasibility study for a future single academic network which would integrate the various efforts and which would follow the coordinates of international standardisation.

With this objective in mind, a technical group of representatives from the University, Telefónica (Spanish Telephone Company), the Computer Industry and various potential users was established at the beginning of 1985.

After a careful analysis of the communications services in Spain with a highest demand at the moment and of highest potential, after considering the present situation and the future plans of the Spanish public network and after studying the various experiences and solutions undertaken in Europe — in

particular in the U.K., the FRG, the Northern Countries, ESPRIT and CERN, the IRIS Working Group wrote a final report, submitted for study and approval in November 1985.

The Technical Team recommends the setting up of a Spanish Academic Network as soon as possible. This network should rely as much as possible on the public services offered by Telefónica and on the international standardisation trends. In order to achieve this the technical personnel responsible for the network should be in close and permanent contact with that of Telefónica and network experts of other countries, in particular European countries.

It is also recommended that the design and detailed planning of the network should be a gradually increasing process, as a result of the experience of the needs of the technological community, the country technical capabilities for the advance of the standardisation process and the availability of products developed both by other scientific communities and commercial firms.

For these reasons and given the urgency already mentioned, it is recommended to set up a pilot phase of 2-years duration to solve the need for immediate services for at least a minimum set of operations, as well as to generate the experience that will allow more detailed future planning. The network will rely on the X-25 service of Telefónica and will not restrict the number of possible connected users.

The first phase would consist in the promotion of remote access via X-25 private switching nodes in the universities and the use of X-28 in most of the installed machines. This first phase would also promote an international electronic mail service in line with the proposal of RARE, ESPRIT and of the COMICS Report of the ECFA. This implies promoting the utilisation of products related to the CCITT X-400 standard. A second phase would seek standardised or transitory solutions for RJE services and file transfer. Also the network should be connected to the equivalent networks abroad.

It is recommended that the network be financed by the Ministry of Education and Science and that an effort is made to use packages and equipments developed by commercial firms or, should this not be possible, to involve these firms in its development as this would greatly facilitate maintenance.

It should be emphasised that once a decision is reached, it is important to establish adequate measures to avoid the proliferation of equipment, systems or local solutions that might be incompatible with the future network. For these reasons the organisational structure of the network is of great importance. It is suggested that a decision-taking and control committee and a technical committee have to be set up. It is the unanimous opinion of the team that has elaborated this report, and which the experience of the consulted networks confirms, that only an adequate, powerful and flexible organisation structure which could channel and conduct the informatics inversions as well as the academic communications and which would support the use and growth of the network, can be accepted and can succeed in the desired comprehensive terms.

The IRIS Commission recommends the active participation in ESPRIT (I.E.S.), RARE and EUREKA (EFN). The IRIS Project has already been submitted for approval and it is at the moment awaiting a decision.

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The Editor's Corner

There are several changes with this issue of IES NEWS. Firstly, IES NEWS will in future appear every second month. This means that news of events should reach you more quickly and you will have more opportunities to contribute. Secondly, there will be some regular features in each issue, such as the EuroKom page(s), a Suggestion Box and, naturally, Letters to the Editor.

In the first issue you were invited to let us have your views, your ideas and your complaints : this invitation still stands. For those of you who want to take up this offer, the next issue goes to press on the last day of April, and after that at two-monthly intervals, so please get out your quills ...

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.

INSIS: The Interinstitutional Integrated Services Information System

The purpose of INSIS is to improve communications between the Member States and the Community institutions by promoting the coordinated and harmonised, exploitation of new techniques combining data and text processing and the use of telecommunication systems.

INSIS was formally launched following some years of preparatory work in December 1982. A **User Advisory Committee (UA)**, composed of representatives of the Member States and of the Community institutions and bodies, was set up, to help identify and assess needs, and prepare proposals for integrated information systems.

The objectives of INSIS are :

1. To improve the efficiency of the Community administrations by providing fast and reliable communications systems, not least for the transfer of written information between Member State administrations and Community institutions.

2. The INSIS market is the market of European public administrations, many of whose characteristics are typical of the European market in general (e.g. multilingualism) ; to capture this market, industry needs to adhere to, and INSIS promotes, international standards — INSIS aims to encourage the development of an open harmonised market and, thereby, to strengthen the competitiveness of the European ITT industry worldwide, by promoting cooperation in international markets.

3. INSIS will make use of public telecommunications services provided by the European PTTs in order to connect private communications systems. Consequently it is an objective of INSIS to stimulate the harmonised development of new telecommunications infrastructures and services to be provided by the European PTTs.

A key characteristic of INSIS is that it is a user-driven programme. The needs and requirements of its users, the administrations of the Member States and the Community organisations, determine the priorities it pursues, the directions in which it develops, the technical and standardisation issues it promotes, and the public services it encourages.

The User Advisory Committee has defined the following priority areas :

1. Electronic transmission of written text (documents), and electronic messaging, to reduce delays in delivery between Member State administrations and Community institutions.

2. Facilities to render access to information of Community interest, most of which is held in a variety of computer data bases, easier and more coherent.

3. Establishment of videoconferencing facilities, to reduce the cost and time wasted travelling to meetings, especially on long journeys.

4. Horizontal integration of informatics services, to facilitate access to services and facilities by those who are not computer professionals.

In pursuance of these priorities INSIS follows two paths :

a) horizontal actions, aimed at preparing the technical and industrial environment, and at promoting political consensus ;

b) pilot projets, aimed at building experimental systems in order to evaluate the technical problems, and the impact and effects on working procedures, of introducing new technology into administrative environments.

Three horizontal actions are receiving particular emphasis :

— promotion of European standards, to which end INSIS provides a framework for Member State administrations to coordinate their views and convey these to the European and the international standardisation bodies (CEN/CENELEC/CEPT and ISO/CCITT) ;

— promotion of the early development of industrial products that meet user requirements and conform to Community norms based on international standards, to enable the successful construction of INSIS systems in a multivendor environment ;

— stimulation of the development of coherent Community-wide public communications services by the European PTTs, to facilitate the interconnection of the private systems of the Member State administrations and Community institutions.

Pilot systems, limited in scope, size and duration, are installed to meet the needs of a specific user community, and to provide a test-bed

— to evaluate user acceptability and reactions,
— to demonstrate technical feasibility,
— to test different technical options,
— to provide factual data for the assessment of the cost/benefit aspects of an eventual operational system.

Three pilot projects are at present in an advanced stage of development:

a) INSEM (Inter-Institutional Electronic Mail System), which is designed to facilitate the exchange of written documents between Member State administrations and Community institutions.

b) OVIDE (Organisation de Videotex pour les Députés Européens), which is designed to provide up-to-date information about Parliamentary activities for Members of the European Parliament (MEPs), and officials of the European Parliament, wherever they are.

c) VIDEOCONFERENCING, which provides studio facilities in Brussels and in Luxembourg for videoconferences.

INSEM will be the subject of a separate article in a future issue of IES News; the other two pilot projects are described briefly below.

The specific information needs of MEPs, and the difficulties of satisfying these by traditional means, combined to suggest MEPs as the target user group for the OVIDE experiment, conducted within the general framework of the INSIS objective of providing better access to Community information.

To perform their tasks effectively MEPs need access to a variety of Community information; importantly, they also need to receive a lot of **transient** information, such as meeting schedules, agendas, press notices, etc. in their own languages. Providing such information by traditional means is made difficult by geographical dispersion: the European Parliament working places are in Strasbourg and in Brussels, its administration is based in Luxembourg, and when it is not in session, MEPs live in their constituencies throughout Europe.

Initially OVIDE is concentrating primarily on making transient information concerning the day-by-day work of the European Parliament more readily available to MEPs in Brussels and Strasbourg (and to officials of the Parliament in Luxembourg), in several languages. The OVIDE system is based on the use of videotex, which permits the use of simple terminal equipment specifically conceived for non-technical users; it also means that eventually it will be possible to make OVIDE information available to MEPs in their home constituencies, via the national videotex services.

The principal aims of the current initial pilot system (which supports some 50 terminals) are to determine the MEPs real needs, to evaluate the acceptability and use of the OVIDE system by MEPs, and to study the problems of maintaining a data base of rapidly changing transient information. However, since several different videotex standards are at present in use in different European countries, the OVIDE project also serves as a stimulant to the European PTTs and ITT industry to resolve the problems (technical, charging policy, etc.) of developing cross-border videotex services and facilities, a fact that well illustrates the interaction between the horizontal actions and pilot projects sponsored by INSIS.

The other INSIS pilot project in an advanced stage of development is concerned with the provision of VIDEOCONFERENCE facilities, in the Commission's Berlaymont building in Brussels and in the European Parliament's Schuman Building in Luxembourg.

Numerous committee meetings take place every day, both in Brussels and in Luxembourg, involving large numbers of Community officials as well as representatives of Member State administrations. Direct expenditure on travel, as well as the indirect costs of the time spent in transit, are considerable, to say nothing of the additional strain frequent trips place on officials. The aim is to reduce these by providing facilities that enable participants to see one another (and documents, diagrams, etc.) without having to travel further than a nearby studio.

The technical issues of point-to-point videoconferencing having been resolved, the INSIS Videoconference pilot is primarily concerned, at its present stage, with evaluating user responses and user acceptability of the facilities that have been made available.
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For the time being the European Videoconference Experiment (EVE) standards only allow two studios to be linked. However, it is expected that multipoint videoconference technology will be available shortly, permitting the simultaneous linking of up to five studios. Since such studios already exist in the capitals of almost all Member States, it will then become possible to convene committees including delegates from sev-

eral Member States without the need for any international travel. However, a number of important issues still requires further study before such international multi-point videoconferencing can become a pratical (as opposed to technical) reality. These include the provision of facilities for simultaneous translation of video-conference proceedings, and the development of adequate security measures to exclude the possibility of outsiders eavesdropping on discussions of sensitive matters at videoconferences.

Having thus summarised the main current activities of the INSIS programme it is necessary, in conclusion, to draw attention to the synergy between INSIS and ESPRIT, without which this brief account would be incomplete.

The role of INSIS vis-à-vis ESPRIT is twofold : it can indicate user requirements, and it can provide to the market the pull that is needed to encourage the European ITT industry to transform R&D prototypes into commercial products. On the other hand, the results of several ESPRIT activities are directly relevant to INSIS developments. These include, in particular, the I.E.S. system itself, notably the stress it places on the implementation of OSI protocols ; the Office Systems activities, notably in respect of office modelling, new advanced workstations, filing systems and local communications ; Advanced Information Processing activities, notably in relation to advanced and natural language interfaces.

M. BELLARDINELLI
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Eurotra on EuroKom:

Networking as a way of overcoming communication and management problems in decentralised projects

EUROTRA is a Community Research and Development project aiming at the creation of a machine translation system of advanced design. The system is being developed on a collaborative basis by national research teams, and an independent central team, working under contracts with the Commission, is producing general linguistic and software specifications.

Three different committees have been created to aid the Commission in overseeing the execution of the EUROTRA programme, and for each national research team there is a supervising national authority acting in accordance with a Contract of Association.

Furthermore, an industrial partner (presumably a multinational consortium) will be entrusted with the implementation of the software specifications.

Although some of the elements of this highly complex structure are not yet in place, the project work is already now distributed over some 15 national sites. In the completed structure the number of sites could reach 20, especially taking into account the effects of the accession of Spain and Portugal.

Communication in a decentralised Research and Development project

The fundamental principles of the EUROTRA design are multi-lingualism, modularity and open-endedness. At the same time, however, the project is clearly aiming at the creation of *one* machine translation system and not of 10 or 20 different systems, which might result from decentralised, multilingual, modular and open-ended work in 10 or 20 sites.

In order to ensure the unity of the project, a complex system of reporting, monitoring and communication has been set up, and a considerable part of the programme budget is being spent on travelling and sending huge amounts of paper to the various participating groups. An additional problem of distribution is emerging now, as different preliminary software implementations are being made for experimentation in the national research teams.

Looking for a solution to all these problems, it is only natural that the project participants turn to networking, although the diversity of more or less accessible networks could easily create more confusion than unity. Even within one European country different research institutes may be connected to different (and not interconnected) networks, and in a collaborative effort involving 15-20 sites distributed over all the Member States, you are bound to find a variety of network connections.

Thus, the first problems to be solved concern internet ports, compatibility of protocols, availability of terminal equipment, etc.

When you know what is available to the relevant sites, the next step is to analyse the real communication needs of the project. In the case of EUROTRA, this is not excessively difficult, because we need

everything : file transfer, person-to-person communication, conferencing, mail, etc. Finally, then, the decision can be taken. But this is only the beginning. Organising the use of the networks is of much bigger importance than the exact nature of the networks themselves. This also implies that it is not absolutely necessary to choose one and only one network, even though the unity of the project is of such dominating importance. Within a strict organisational scheme, various networks may serve various well-defined purposes, and the resulting flexibility will certainly be of advantage in case of unavailability or break-down of some network.

Organising the use of networks

In order to get the necessary appropriations, most organisations today will have to show that networking will actually replace other communication activities like travelling, meetings, distribution of paper, telephone, telex, etc.

This can only be shown within a well-defined organisational scheme, where it is possible to compare existing forms of communication with the facilities offered by different accessible networks.

In EUROTRA this comparision has led to the choice of EuroKOM as a first possible candidate. In order to ensure coordination, compatibility and a uniform understanding of the specifications, a lot of the project work is done by ad-hoc task forces, special teams and workshops with participants from different national groups. Electronic conferencing seems to

be a good way of avoiding too much travelling and a too heavy reliance on the traditional mail service of the PTT's. Furthermore the organisation of the meetings of the coordinating and consultative groups and committees benefits from the access to an electronic mail system.

In its existing versions the EUROTRA software is running under UNIX * and the majority of the participating groups are using UNIX machines. Thus, it is understandable that EUNET (the European network using the UNIX to UNIX Communication Protocol) has also been seriously considered for networking in EUROTRA, and that some of the national teams and other participants are already linked up to EUNET.

Fortunately, EuroKom is now being connected to a GEC machine running under UNIX which will eventually become a node in EUNET. This means that all EUROTRA groups will be able to access the UNIX network, and moreover we get exactly the kind of flexibility which was mentioned above. The fact that EuroKom is also planning to provide a gateway to ARPA is just an extra asset in this context.

The organisational scheme

Letting more than a hundred persons working in so many different places loose on EuroKom would result in a long and painful process of trial and error and probably lead to a total dismissal of the system after some time.

Prior to the introduction of the system its use must be planned,

and in EuroKom itself a system of informative conferences (list of participants, list of responsible persons, list of EUROTRA conferences, an internal news bulletin) must be created in order to overcome the well-known problems of documentation when a group of people start using a new tool.

Somebody must be appointed to take over the central responsibility for the use of the system. The tasks of this person include deciding on access/non-access to information (open or closed conferences), updating lists of participants, conferences, etc., appointing or registering persons who are responsible for the local use of EuroKom in the decentralised groups (and whose tasks are a local replica of the central tasks), creating central conferences for administration, management, information, etc. and supervising the use of the system within the project.

If this person is also available for general help-desk functions, this is certainly an advantage, but in a project like EUROTRA it means, that the central organiser will be employed full-time in EuroKom activities for a long introductory period, and in many projects providing staff for a job like this may be difficult.

However, it is also important to assess at regular intervals the effect of using the network, and if it turns out that it saves time and money spent on travelling, meetings, telephone calls and paper distribution, the manpower spent on organising has obviously been worth while.

Peter LAU
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* UNIX is a trade mark of AT & T.

World Systran Conference in Luxembourg

One of the principal obstacles to the free flow of scientific and technical information in Europe is the multiplicity of languages within the European Communities. Machine translation (MT) has proved to be an effective tool in helping to overcome this so-called "language barrier". Of the numerous MT systems in existence today, SYSTRAN is perhaps the only one that is capable of translating large quantities of text with a minimum of pre- and post-editing. As a means of providing a context for the exchange of ideas and experiences with SYSTRAN, the Commission hosted the World SYSTRAN Conference in Luxembourg form February 11 to 14.

Twenty formal presentations and two days of workshops were included in the SYSTRAN Conference, which was attended by appoximately two hundred people from Europe, North America and Japan. The formal presentations at the Conference covered numerous aspects of the following areas : SYSTRAN at the Commission, in Europe, worldwide, the user environment and the future. The last two days of the Conference consisted of workshops, which were primarily dedicated to various aspects of the SYSTRAN user environment, such as post-editing, word processing and user requirements. All of the papers delivered at the SYSTRAN Conference are available from Mr. Ian Pigott of DG XIII, CEC, Luxembourg.

Having become an increasingly important factor in the popularisation of SYSTRAN, the user side of the system was stressed. repeatedly. User-friendly interfaces, easy input via optical character readers (OCR), a videotex access system and improved word-processing methods are some of the recent developments that have improved SYSTRAN'S usability. The strenghts and weakness of these aspects formed the object of various presentations and discussions.

Much of SYSTRAN'S success depends upon the accuracy of its dictionaries, which have been enlarged and improved continually by the Commission and several private companies during the last ten years. While the French-English and English-French dictionaries are the best-developed and provide a lexical accuracy level of 90 %, SYSTRAN dictionaries also have been developed for Italian, German, Japanese and Arabic, which are generally combined with English and/or French. The subject areas covered by the various dictionaries range from administration to nuclear energy, aeronautics and agriculture.

Of particular importance to ESPRIT participants, is the possibility of offering a machine-translation service with SYSTRAN within the context of I.E.S. This service was mentioned in a presentation that summarised the results of a recent study on the translation needs of ESPRIT participants. The study showed that, although English is the "lingua franca" of ESPRIT, considerable interest in a fast and inexpensive translation service within I.E.S. exists. For the implementation of such a service, SYSTRAN could be combined with other advances in information technology, such as electronic mail and file transfer, word processing and telecommunications, to offer an automatic translation service with a minimum of human intervention.

The possible applications of SYSTRAN are numerous, as witnessed by the diverse experiences described. The increasing number of SYSTRAN users is helping both to improve and to popularise the system, which long ago left the experimental stage and is currently being used on a full-time basis by both the Commission and commercial organisations.

P. KLEINBART
(INFOARBED, LUXEMBOURG)

ESPRIT:
eleven new software projects selected

Software is a crucial part of information technology. Europe is potentially strong in software and a concerted effort to develop and exploit this strength across the Community is taking place within ESPRIT.

The 1985 supplementary call for proposals was closely focused and designed to place greater industrial emphasis on ESPRIT software research and development. Its principal focal points included design method demonstrators and environment test beds, to allow early cost-benefit analysis of ESPRIT results in a controlled industrial environment and demonstrate the integration potential of the tools and methods emerging from the work.

The overall software area of the programme now has the potential to improve significantly both the productivity of the European software industry and the quality of its products.

Projects of special interest to I.E.S. include Chamelon (Dynamic Software Migration between Cooperating Environments) and Sapphire (PCTE Portability). Future issues of IES NEWS will naturally report on these and other relevant projects in detail.

ECHO

The Commission's own host

ECHO, the Commission's own host service, offers access to a range of unique data bases and data banks online. It was set up in 1980 to contribute actively to and encourage and support the use of online information in Europe. ECHO comes under the umbrella of DG XIII/B (Directorate General for Information Market & Innovation), which is responible amongst other things for the development of the European information market.

How can we help you?

We can offer you access to unique data bases and data banks either wholly or partly sponsored by the CEC which are not available on any other online computer host service.

The data bases and data banks offered by ECHO are mainly of a European nature and range from information on research projects, reports, research organisations and a multilingual terminology databank to User Guidance files which are of interest to the whole DIANE user community, e.g., online directories to help you find the correct software and hardware to suit your organisation's actual needs or to find out which data bases, hosts and other information centres possess the information you require. The User Guidance files are available on a public password. For all other data bases you need to sign an ECHO contract.

Help desk customer support

To offer this range of data bases and data banks efficiently to Users the Commission created a customer support team which deals with all matters concerning ECHO and is ready to reply to any questions or problems you may have in using ECHO or to supply any information you require about the service or data bases.

The Help Desk is open to Users from 08.00 to 18.00 hours (local time); the computer is available 24.00 hours a day except for backup.

User aids

MANUALS. ECHO provides user manuals for the command language, GRIPS, and for each of the individual data bases.

These manuals are free of charge and are sent to all Users when they sign up. Updates for existing manuals and new manuals are sent to Users automatically. The manuals are available in English and French.

NEWSLETTER. ECHO Users also receive our regular newsletter which gives details concerning all developments of the ECHO Service, new data bases, staff activities and conference or exhibition participation. The newsletter is designed to be a medium of two way communication and Users are encouraged to correspond with ECHO if they have a comment, experience or questions they would like to throw open to other ECHO Users.

TRAINING. ECHO offers a range of training classes designed to meet all levels of Users needs. Details concerning training classes can be obtained from the Help Desk.

Brief description of ECHO data bases

Data bases marked with an * are available on a published password (without contract).

DIANE GUIDE *

DIANE GUIDE gives detailed information on data base producers, data bases and hosts available in Europe.

The DIANE GUIDE is unique in that it is the only online data base of hosts, data bases producers and services available in Europe which is updated continuously and is free of charge.

EABS

The EABS data base contains references to the published results of scientific and technical research programmes wholly or partly sponsored by the CEC. It covers a wide range of subject areas (e.g., nuclear research, new sources of energy, environmental research, etc.) and is of great advantage to organisations and individuals who want to be informed in general or in detail about the activities of the CEC in these fields.

ENREP *

The ENREP data base is an online directory of environment research projects in the Member States of the European Communities. Information on these projects is collected on a national basis by focal points under the management of the CEC. The research projects cover all aspects of the environmen-tal field and will be of interest to those involved in this area.

ENREP is the sister database to ENDOC.

ENDOC *

ENDOC is an online directory of over 500 Environmental Information and Documentation Centres in the Member States of the European Communities and the services they provide. These centres are involved in all aspects of environmental research and provide a wide range of services useful to those who are conducting their own research projects is this area or are generally involved in the environmental field.

EURO DICAUTOM *

EURODICAUTOM is the only online terminology data bank accessible to the public within DIANE and contains scientific and technical terms, contextual phrases and abbreviations in eight of the official European Community languages. The data bank is invaluable to terminologists who are looking for translations for particular terms and also for translators who need up-to-date translations of scientific and technical terms which may not yet be available in printed form.

DUNDIS *

DUNDIS is the online version of the Directory of United Nations Data bases and Information Systems. DUNDIS will enable Users to see which systems, services and data bases are currently available within the United Nations network and how to gain access to the hundreds of thousands of documents, technical studies, periodicals and unpublished reports held by more thant 30 UN organisations, specialised agencies and related offices located throughout the world.

TED *

TED (Tenders Electronic Daily) is the online version of the Supplement S of the Official Journal of the European Communities and contains all invitations to tender for public works and supply contracts published. The documents are available the morning of their publication, thus providing the User with a big advantage in time. As the tenders contain contracts worth millions of dollars, access to this data base is indispensable for any organisation.

THESAURI *

The THESAURI file contains details on 1 009 existing thesauri and is produced by GID GmbH in Germany. This data base is invaluable for people involved in the creation of new thesauri, people wanting to know what already exists in this field, and people working in the field of information science.

CCL-TRAIN DATABASE *

To enable users to become familiar with online bibliographic information retrieval services, and the Common Command Language (CCL), the CEC has made a special service, known as TRAIN, available on ECHO. The CCL-TRAIN is a subset of the EABS data base, complete with abstracts.

EURISTOTE *

EURISTOTE is the online version of a catalogue of University research projects on European integration prepared by the Centre for European Studies of the Catholic University of Louvain, Belgium under contract with the CEC.

The data base contains references to over 9 000 studies carried out by universities since 1959 and also gives details of over 5 000 professors and university researchers in some 60 countries. The topics covered in the data base include : foreign relations, competition, monetary and financial issues, the Common Agriculture Policy, pacifism, bio-technology and robotics.

PABLI *

PABLI is the online version of a European publication called "Pages Bleues". This data base will be similar in subject content to the TED file, but will be oriented specifically towards the developing countries.

GENERAL USER HELP FILES

(no contract ; published password)

As mentioned in the general aims of ECHO, one important role is to introduce potential customers to the European information market with regard to the information available in Europe itself and also to the advantages of online information in general.

As already mentioned above these data bases are accessible with a published password and known as "USER GUIDANCE FILES".

To access these databases a personal ECHO password is not necessary. The passwords for these files are (NUA of ECHO : 270448112) :

DIANED	for German language version
DIANEDK	for Danish version
DIANEE	for English language version
DIANEF	for French language version
DIANEI	for Italian language version

DIANNENL for Dutch language version
DIANEP   for Portuguese language version

These passwords will lead straight into the DIANE GUIDE file and will also provide basic search hints in the language chosen.

Note : The data base is in English with abstracts and controlled terms in French, German, Italian and Portuguese. The passwords will automatically choose the requested language if available (for example : User guidance will be in Danish and Dutch but all other output will be in English).

Similarly, the published passwords for the training file are :
TRAIND for the German version
TRAINE for the English version
TRAINF for the French version
TRAINI for the Italian version

SOME MORE SERVICES

a) With the passwords
   CALLD the German language version
   CALLE the English language version
   CALLF the French language version
   of all calls for tender and/or calls for proposals issued by DGXIII/B and published in the Official Journal are available on ECHO.

b) The password
   ECU
   will give you the latest ECU rates for all major currencies.

c) Planned (Mid April 1986)
   The password

INTRANSE for English version
INTRANSF for French version
will give you access to major articles from I'M News (Newsletter issued by DGXIII/B on the European Information Market) translated into 2 languages.

d) Planned (Mid April 1986)
   The passwords
   PROE for English version
   PROF for French version
   will give some basic information on ongoing projects and programmes within DGXIII/B.

REMARK : You may use any of these passwords to logon and the command INFO + the password to switch over to another of these services.

e.g., logon with the password ECU to see the ECU rates. If you then want to look into the calls for tender in English simply type in : INFO CALLE.

ECHO therefore is really a "public" host accessible via all the PSDN's in Europe. It is the intention of the Commission to expand the role of ECHO, within the limits of staff and budget availability, to provide a full spectrum of support services to alle users of information facilities in Europe.

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All change at UCD

The period since the last IES News has been a period of major development and change for the EuroKom service.

— We have settled into new, purpose-built premises at the UCD (University College Dublin) campus. All staff — such as Help Desk, administration and technical — are now located within one building, which is fully equipped with terminals and telephone lines, plus individual Help Desk areas for the EuroKom and UNIX services.

— The number of registered EuroKom users now exceeds the one thousand mark ; thanks to the upgrade announced in August 1985, the system has readily absorbed this increase and can accomodate many more users.

— The UNIX service was transferred successfully in November last from GEC Hirst, and the GEC 63 is now fully commissioned and supporting more than one hundred users.

Unperturbed by the change of premises and expansion of services, our technical staff have been beavering away at various enhancement projects ; their work will bear fruit this quarter, with Beta-testing of the EuroKom Telex Interconnection (See item on Telex).

Documentation

Poor to horrible — that has been the consistent verdict of users on the present level of EuroKom documentation, as expressed in the response to our User Questionnaire and elsewhere.

But, despair not. A specialist documentation firm is well-advanced in the production of a new documentation package. This will consist of a Functional Overview, a Start-Up Manual, a User Manual and a Reference Guide, all presented in an attractive case of the type familiar to PC users.

Professionally prepared quality manuals take time, and we are determined to get it absolutely right. This will be the first set of documentation produced by the EuroKom team ; we expect it to serve our users' needs for a long time yet.

Target completion for the documentation package is May. However, many users can look forward to receiving pre-release copies for comment and evaluation during April.

User Questionnaire

If you have not already responded to our User Questionnaire, then please complete the form and mail it ; it shouldn't take more than a few minutes of your time.

The response level so far has been about forty per cent and the information received has been invaluable. However, we need as full a response as possible to gauge your views and be informed of your requirements.

If you have already sent us a completed User Questionnaire, thanks ; if not, please do so — and soon.

Telex

As we go to press in this issue, the EuroKom Telex Interconnection is undergoing final testing. We shall be coordinating field tests with selected users during March and expect a formal announcement to all users in April.

Of the various enhancements currently under development, the Telex facility is the one which generates the most interest. Our thanks to the "Beta-test" sites for their co-operation to date.

EuroKom and the Personal Computer

One feature of EuroKom is the wide range of terminals, computers and communication methods employed by our users in operating the service. Often, it is constraints at the local end which prevent users from taking maximum advantage of EuroKom's functionality.

As we wish all our users to see EuroKom at its best, we shall be publishing regular „Technical Notes" that will address recurrent issues relating to common terminal types and computer systems.

Given the growing popularity of Personal Computers, particularly those of the MS-DOS family, we are taking the opportunity in this issue of IES News to describe some facilities which can make life easier for the EuroKom PC user.

Sidekick

While online to EuroKom, PC users need frequently to look at a disk-file, write a note into a to-do list or check an appointment schedule. One software product that allows you to perform such tasks is Sidekick. It sits politely in the background and pops up as a window when invoked. You can then

EuroKom News

EuroKom News
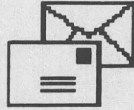
step aside and conduct a separate safari through your PC files — without leaving EuroKom. Very simple, but also very useful.

Dialling and Logging-in

The task of dialling, entering X-25 identifiers, (possibly) setting PAD parameters and inputting Euro-Kom passwords is a tedious, error-prone chore dreaded by most users.

Happily, there are available a number of "automated" PCs, which bring you straight into a EuroKom session without touching the keyboard. Ingredients required :

— An auto-dial modem (ideally a modem card within the PC, of which there is a growing number available)

— A good auto-dial, auto-logon communications package, such as Crosstalk or Smartcomm. These packages will dial automatically the host system, and on receiving the carrier signal, transmit the various passwords, IDs and so on.

Full-Screen Editing

The variety of terminals and access paths to EuroKom makes it unrealistic for the service to support a full-screen editing facility.

If, like more and more of our users, you have a PC, the most effective method of text editing is as follows : prepare and edit your document on your PC's word-processing package, and then transfer it to EuroKom, using a file-transfer protocol as described below.

File Transfer/ Document Exchange

This is one topic on which there appears to be much confusion. A so-called "file transfer mode" is offered by many MS-DOS packages, which allows the user to direct a file from diskette to the communications port during a session. It will work on EuroKom with small text files ; however, we do not recommend this approach.

It is far safer when transferring a file from your PC to EuroKom or another remote host, to use an asynchronous connection and the same file transfer protocol at BOTH sides of the connection. The PC and the host are then working together, ensuring that the file is handled properly.

For users of large computers, there are available a number of file-transfer protocols which manage such transmissions ; within the UCD computer centre, we have a selection of protocols and more are in development, as we operate a variety of mainframes. For PC users, we provide the Kermit protocol on the EuroKom host.

To enable EuroKom users to invoke Kermit without having to leave the service, we introduced recently the CALL KERMIT vocabulary. Briefly, the user wishing to perform a protocol-protected fils transfer simply has to :

— Sign on to EuroKom, using a Kermit version on his or her PC (As Kermit is public-domain, we can provide copies for most PCs) ;

— Issue the CALL KERMIT command and put the Euro-

Kom Kermit in "server" mode ;

— Return to the PC Kermit, and issue the various commands for sending and receiving files to and from the host.

In the future, there will be standard network- and machine-independent protocols for such transfers ; in the meantime, Kermit works, is known widely and well-documented.

(Users unfamiliar with Kermit : Please write for a Technical Note)

And in Conclusion. . .

The Sidekick programme, an intelligent dialling modem and a Kermit capability — these are some suggested methods for improving your use of the EuroKom service.

Another, which has recently come to our attention and which promises exciting things, is the latest version of Crosstalk XVI (3.6 or later).

It is compatible with Top-View, so you can switch between various MS-DOS tasks, including a Euro-KOm session. In addition, it invokes Kermit automatically at the PC side whenever you perform a file transfer.

We are currently testing this package and we shall keep the growing number of PC users out there posted, probably with a short note on EuroKom.

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APEX
Advanced Project for European information exchange

The European aerospace industry, represented here by Aeritalia, Aerospatiale, British Aerospace, CASA and M.B.B., is increasingly adopting single source work sharing. The consequence of this practise it that in development production and support of products, and for the management of the corresponding processes, each partner takes the total responsibility for specific portions of the total work. This is the reason why European industrial cooperation programmes like AIRBUS, ARIANE, COLOMBUS, etc. generate a phenomenal need for the exchange of information of all types between the various parties involved. To enable close cooperation between the industrial organisations, it is necessary to provide high-integrity data transfers between the dissimilar systems used by the individual partners. It is also essential to provide network management tools to ensure the controlled storage, access, and release of data between such partners.

This information already is and will, in the future, be increasingly stored in computer data banks, for example :

— the accurate technical definition and computation files with computer-aided design systems,

— the Bill of Materials, manufacturing process plans and tooling with computer-aided manufacturing systems,

— manufacturing work in progress, stocks of materials, finished products, etc., with computer-integrated manufacturing (CIM),

— operating, maintenance and repair manuals· with industrial office automation systems,

— administrative commercial and financial information with management information systems.

Although computers are used to store and process data, these are exchanged on hardware media by means of conventional slow, unreliable and costly techniques.

The computerisation of information exchange by the direct use of wide- band teleprocessing networks by computers, solves some of the problems mentioned but raises others :

— the hardware, software and systems already installed to which the operators are accustomed originate from many sources and are incompatible with each other,

— it is unthinkable to replace the existing systems by a new system common to all partners.

— the conceptual schemes representing the information associated with the application software were defined according to the characteristics of these applications. Their format, their structures, the semantics used and of course their fields of application are different. This makes communication between applications extremely difficult since only a small part of the information semantics can be transmitted, the rest is either degraded or lost.

— There is no cohesion between the various resources utilized. This point is particulary penalising because of the technological progress which rapidly renders existing products obsolete. To summarise, in the face of the size and the strategic importance of information exchanges in future industrial cooperation, there are no satisfactory prospects on the horizon :

— conventional methods are penalising and constitute a serious handicap, slowing down the decision-making process and representing a considerable inroad upon budgets,

— new methods based on data-processing systems and wide-band networks, will not be available in the industrial context, which is that which interests us here, for several years at least.

It is therefore necessary to innovate and develop standards for interfaces as well as to establish an integration methodology for the components utilised in information exchange.

Study of technical problems linked to information exchange

These studies concern :

— inventory and analysis of the information concerned and the exchange techniques,

— definition of a common design model for receiving this information.

This model must cover the full semantics contained in this information and shall be expressed in an adequate language for which a formal grammar shall be developed.

— definition of two neutral formats for representing information, one intended for communication and exchange, the other for storage and processing,

— definition of information access and transfer procedures which must guarantee the level of security and confidentiality required by the various categories of data and users.

The size of the system, the required security, the need for uninterrupted operation are all factors which require total mastery and strict control of the integration processes for the various construction items (computers, networks, software, graphics stations, machine controllers, etc.).

The prospective point of view of the users, themselves designing and manufacturing advanced technological products, will be put to good use in determining the market requirements and expected future products.

APEX will make its skills and resources available to the public standardisation agencies in order to accelerate the finalisation of standards under definition at the ISO. It will in particular concentrate its efforts on the representation of information concerning product definition and the design and manufacturing processes (ISO TC184-SC4). It will establish close links with :

— the ISO-OSI teleprocessing international standard,

— the ISO committees responsible for standardising texts, images,

— the equivalent American organisations.

Information exchange in the industrial world concerns all kinds of products and technologies. In order to get a firm grasp on the problems and achieve concrete marketable results within five years, the field must be restricted and the methods and tools developed must be applied to a large-scale industrial cooperation programme to be jointly chosen.

The first application will serve to focus the various efforts made, qualify the methodology, the tools and the services developed by APEX, and promote them with the potential customers in other industrial branches.

Work programme

The first task consists in creating a team of specialists and a physical infrastructure.

Two types of resources shall be utilised by the centre :

— its own resources which will come in part from the founder members,

— additional external resources used temporarily and which will be covered by a sufficient quality and availability guarantee.

The second task consists in setting up teams and means for :

— data-processing infrastructure for the main suppliers' systems (IBM, Digital, Bull, CV, etc.),

— telecommunication infrastructure : public networks (telephone, Transpac, satellites, etc.), local area networks (Ethernet, MAP, etc.), constructor network architecture (SNA, DECNET, DSA, etc.),

— a CAD/CAM infrastructure : graphics workstations, plotters, application of software, internal data structure, etc.,

— production automation infrastructure, workshop computers, programmable controllers, numerical control of machine tools, flexible cells, robots, etc.

The third task consists in applying the results of research and development works to a real case in order to demonstrate, qualify, certificate and promote the methodology, products and services to be further marketed.

Finally, the fourth task consists in marketing these products and services, taking full advantage of the promotion gained through the demonstration programme.

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(AEROSPATIALE, PARIS)
Based on paper to CESTA
Conference,
PARIS, Feb. 1986.

RACE

(Research in Advanced Communication for Europe) off to flying start

Just over two months after a formal decision by the member states, the RACE Definition Phase is underway. The ITT TF has launched this package of research contracts in record time in the hope that the results will form the cornerstone of European telecommunications in the twentyfirst century.

The RACE Definition Phase will establish the outline of a future pan-European Advanced Wideband Network, and define the technologies necessary to make it a reality in 1995. It features a multi-disciplinary approach, harnessing the combined expertise of telecommunications administrations, manufacturers, broadcasters and university researchers.

From a standing start in September 1985, 171 organisations responded to the call for proposals with 80 project suggestions covering the whole gamut of telecommunications. Leading experts whittled these down to 32 proposals and 109 organisations during one hectic week of assessment meetings. The proposals were converted into projects which together form a coherent programme. Work began before the New Year on some projects, as soon as contracts could be signed. All contracts have now been negotiated and the majority are signed and running.

The RACE Definition Phase will run for 18 months and by then the technological requirements for the implementation of the Europe-wide advanced telecommunications infrastructure will be established. The results will fall into two categories : the specification of the Integrated Advanced Network is being designed by the telecommunications administrations, while the manufacturers will develop the sophisticated terminals necessary to deliver advanced services, such as videoconferencing for businesses and high-quality flat screen television for consumers.

A list of projects and contractors is available from the Task Force in Brussels.

ESPRIT Technical Week 1985 Proceedings

The final version of the full text of the 1985 Technical Week is about to be published by North-Holland. The two volumes will be available in April and cost 200 Dutch Guilders for 1440 pages. Copies can be ordered through the book trade or directly from North-Holland, PO Box 1991, N-1000 BZ Amsterdam.

U.S. Computer Makers Seek Compatibility Standards

Much publicity has recently been given to a major initiative of leading U.S. computer companies aimed at developing standards that will allow machines made by different manufacturers to share information. Eighteen companies, including Digital, Burroughs, AT&T, Amdahl, Control Data, have agreed to form a nonprofit organisation, to be called the Corporation for Open Systems (shades of OSIS ?) which will specify standards and test for compliance with them. The project should be started by the time you read this.

If the new group succeeds it will have major effects on both users and vendors. The former will be able to mix and match components and machines into a complete system, thus overcoming one of the major frustrations of computer users who have suffered from the absence of standards. The organisers hope that one effect will be to loosen the commanding share of IBM, which is prominently absent from the founder group, although a representative will attend the initial meetings.

Whilst there is no certainty, there is more than a suspicion that the ESPRIT initiative in Europe has also had a major impact on the thinking that led to the setting up this group : for once Europe may have set the pace in a standardisation and compatibility sphere. It is however essential to ensure that any U.S. standards developed are compatible with their European counterparts.

PCTE:

A Basis for a Portable Common Tool Environment and its use of ROSE Products

The project "Basis for a Portable Common Tool Environment (PCTE)" is carried out by a consortium led by Bull (France) and including GEC and ICL (United Kingdom), Nixdorf and Siemens (Federal Republic of Germany) and Olivetti (Italy). The purpose of the project is to design and implement a software system to serve as basis for the development of complete, modern Software Engineering Environments.

The project started at the end of 1983 and is to run for a period of four years. Within the Consortium, Bull, ICL and Siemens jointly develop the UNIX* based PCTE version; Olivetti is responsible for the early implementation of a PCTE prototype and for a longer term Ada** version of PCTE; GEC and Nixdorf develop two sample tools: the Knowledge Based Programmer Assistant and the Configuration Management System. These tools will exercise and demonstrate the validity of the PCTE design.

The project milestones and deliverables are defined so that intermediate results from the project can become visible and available to the ESPRIT community in time to be the basis for the integration and the dissemination of the results of other research and development projects. The first result of the project has been the production of the PCTE Functional Specification Report. This gives the detailed definition of the PCTE functionalities in a form which can be used directly in the design of tools and programmes which will eventually be integrated into the PCTE hosting framework.

PCTE will be developed in close cooperation with other ESPRIT projects, in particular with GRAS-PIN (graphical specification and formal implementation of non-sequential Systems) and SPMMS (Software Production and Maintenance Management System) and the ROSE infrastructure project.

The result of the PCTE project will be the production of a "Basis" for a Portable Common Tools Environment. As such communications are used only to enable the basic functions of a minimal environment. A PCTE system consists of a collection of cooperating workstations on a local area network (LAN). Individual workstations are bound together in such a manner that a user has no need to be aware of the precise location in the network of data-base objects, or even of where a particular programme is executed. In fact, to a user of a PCTE the mechanism of communication between individual workstations is totally transparent. The mechanism that makes this transparency possible is called the PCTE Distribution.

The Distribution mechanism is built around a Remote Procedure Call (RPC) facility resident in the PCTE kernels. The mechanism is used to send messages only between cooperating PCTE kernels; the RPC interface is not visible to the user (i. e., at the system call interface).

The RPC mechanism sits above Rose Transport (in its connected and connectionless form), and as such is independent of LAN characteristics. In future releases of the RPC mechanism, support for the X-409, X-410 Presentation standards may be included in the RPC structure in order to allow interkernel requests (and hence Distribution itself) between non-homogeneous workstations.

The RPC mechanism is driven from tables supplied by the builder of the environment in which it sits. The tables describe aspects of the call such as the style of communications to be used during the call (e.g., whether or not to use a Transport connection), and information to allow correct execution of a received call request. The mechanism is supported by a Distribution Manager, which maintains the (distributed) set of objects which define the topology of the particular PCTE. For instance, each workstation is represented by an object which tables its characteristics: Network address, post-id, CPU type, "size", communication characteristics (eg. Rose Transport) etc. .

The PACT project, whose intention is to enlarge and enhance the results of the PCTE project, will exploit the facilities that ROSE provides. As has already been stated, a PCTE is considered to be one amorphous system, but lacks a homogeneous communications facility linking it with the outside world.

As one of the work packages within PACT we have therefore defined the concept of a Gateway. It is through a Gateway (of which a single PCTE system may possess several) that all communication outward from a PCTE is directed. The Gateway target could be any one of a wide range of system types, such as another PCTE on the same LAN or even a non-PCTE system accessed via WAN. It is very possible that Gateways which transfer files might make use of Rose FTAM or Session whilst others may offer mail services such as the ROSE X-400 service.

P. CREENWOOD and
K. RUTHERFORD
(ICL, STOKE-ON-TRENT)

European Information Technology Conformance Testing Services Projects

The first European standardisation activity for information technology is getting under way on the basis of an agreed programme being carried out by the Commission, CEN/CENELEC and CEPT.

The programme places emphasis on the application of international (ISO, CCITT, ISC) standardisation in Open Systems Interconnection for Information technology (IT), and gives priority to local area networks, message handling systems, character sets, "Triple X" packet switching, telematic services and teletex.

When this work is completed, users and manufacturers will have available a common set of specifications (e.g., functional standards) which can be used to allow interworking between telecommunications and computing equipment and software in business and office applications.

Taking into account the need to ensure verification of conformity of such standards, the Commission has launched a set of support contracts in the area of "European harmonised Information Technology Conformance Testing Services".

During the months of October to December 1985 meetings were held with all the selected units and the technical annexes were produced and commented on by technical and legal experts.

Goal

The overall goals of these projects are :

to bring together the existing technical experience of testing service provisions and without major research and development

to assist customers and suppliers of I.T. products in buying and selling interworking I. T. products

to ensure that the testing services form a coherent part of the overall goal of removal of technical barriers to the exchange of information throughout the Community.

Tools Required : A **coherent set** covering :

Standards (including profiles and **functional standards)**

Conformance Testing (including **all aspects necessary** for interworking as well as standards)
European mutual recognition
Certification (offering **sufficient guarantee** of interworking).

The Commission support has been aimed at bringing to the market as quickly as possible the (mainly) existing testing expertise as practical conformance testing services available to manufacturers, customers and users. In consequence, a relatively tight timescale has been set with the objective of having the first services available publicly within 18 months. Because of this approach, the first testing procedures will not be the final all-embracing versions and that will consequently need further stages of refinement.

Topics of CTS
(Conformance Testing Services)

The choice of information technology topics covered by this support initiative has been governed by the importance given to the need to achieve better interworking between heterogeneous computer systems (OSI Open Systems Interconnection) and also the importance of bringing together at a European level the currently existing information technology conformance testing expertise and initiatives.

The topics for the conformance testing services are :

OSI	— layers 1 to 4 for X-25 and X-21 subnetwork
	— CCITT Teletex
	— CCITT X-400 Message Handling Systems
	— File transfer (FTAM-ISO)
	— Local area network LAN-ISO, layers 1 to 4.
Languages	— Cobol/Fortran
	— Pascal
Others	— Graphic Kernel System
	— Software Quality Assurance

List of participating laboratories

As indicated in the following list, the launching of Conformance Testing Services has been based on the use of the expertise of various existing laboratories.

European cooperation

An essential element of this conformance testing initiative is the building up of the degree of goodwill and cooperation necessary to achieve a European-wide commonly accepted and mutually recognised set of services. In consequence, every effort has been made to avoid refusing proposals for cooperation. This has resulted in more participants for some projects than is normally desirable and hence the need to establish a more comprehensive than normal level of technical and organisational cooperation between the projects. In addition, very close cooperation is being organised among all the projects by establishing a "Technical Coordination Consultative Board" activity.

This cooperation is essential to ensure that :
— harmonised conformance testing services are offered throughout the Community by multiple Test Laboratories and
— test reports are harmonised and mutually recognised
— this experience is properly exploited in liaison with the work done by CEN/ CENELEC and the CEPT in the area of certification.

DIE DEUTSCHE BUNDESPOST (DBP/FTZ) — Fernmeldetechnisches Zentralamt Am Kavalleriesand 3, D-6100 Darmstadt.

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New EFTA contribution to standardisation in Europe

Three new cooperation agreements were signed in Geneva in January 1986 by EFTA and the European standards institutions CEN and CENELEC.

All three parties expressed satisfaction over the new agreements which involve a further commitment on the part of the EFTA countries to the strengthening of standardisation work in Western Europe.

EFTA's interest in promoting standardisation work derives from the fact that the effective utilisation and development of the industrial potential of Western Europe is hampered by differences in national specifications for manufactured products and by the lack of mutual recognition of tests, inspection and certification procedures. Genuinely free markets are a necessity if Western Europe is to close the technological gap with its main competitors. Moreover the full benefits of recent European projects in research and development can be realised only if market conditions are uniform.

Of the three contracts, one is a framework contract which calls for EFTA to set clear priorities for new European standardisation in the form of specific requests to CEN and CENELEC to draw up European standards. Financial support will be provided by EFTA for the execution of the requested tasks. In the near future, requests from EFTA can be expected in such key sectors as information technology, mechanical engineering and mechanical handling equipment.

The second agreement, referred to as an information technology launch contract, provides for financial and other support from EFTA for a speeding-up of standardisation in the field of information technology. Standardisation in systems and equipment for advanced data processing and communications technology is one of the keys to obtaining the benefits of sufficiently large markets in Europe.

The preliminary contract on the Comparative Index of European and National Standards (ICONE) foresees EFTA participation in and financial contribution to the setting up in CEN of a central data base on all national standard in the EFTA countries, as well as the countries of the European Community.

The three agreements constitute the basic contractual foundation for further work between the parties. As corresponding agreements have been concluded between the European Community and the European standardisation institutions, the groundwork has been laid for a new level of cooperation to promote uniform standards in Western Europe.

Computer messaging will probably be one of the major communication tools for human communication in the future. According to some estimates as much will be communicated over computer-based message systems (CBMS) as over ordinary telephone by 1992. As in so many other areas of computer usage, the Americans have led development in this area with Arpanet, and recently with the X-400 standards based to a large extent on the experience gained with Arpanet. As often before, the American solutions are not very neat or easy to use, but they work, they are first, and get accepted.

However, Europe is getting heard in the messaging area, largely because of the work behind the PortaCOM message system, and the GILT and AMIGO projects which have been initiated and carried through within the COST-11 projects.

How PortaCOM was started

The Cost-11 project decided in 1980 to develop a computer-based message system. The system was supposed to be used to simplify cooperation between about 200 researchers representing 60 institutes in 10 countries. Joint work would be speeded up and travel cost would be reduced. After a thorough worldwide evaluation of available systems, it was decided to develop a new European computer conferencing system based upon COM at the Stockholm University Computing Centre, QZ, in Sweden. The first version of PortaCOM was written in Sweden in 1978 (it was at that time named COM) and public usage started at QZ in 1979.

The new version of PortaCOM has been developed as a joint Euro-

PortaCOM —
an emerging European Standard?

pean project. The base version was developed by a Swedish contractor ENEA, and the porting to different types of computers (Siemens, Univac, Burroughs, Cyber, VAX, IBM) was done by universities and research centres in Denmark, Finland, France, Germany, Italy, Jugoslavia, Norway and Sweden.

PortaCOM usage in Esprit

The large European multi-national research programme in Information Technology, ESPRIT, uses PortaCOM as its main communication tool.

PortaCOM is installed at the University College Dublin, and accessed through packet-switched networks by users all over Europe.

How PortaCOM is different

PortaCOM is different from other messaging systems in the advanced methods for structuring the message data base. People are beginning to understand the need for data base-oriented message systems. When the volume of messages is large, users will be overwhelmed by unread messages, unless their message system provides a structure, so that they can control the incoming flow of messages.

Like other conferencing systems, the PortaCOM data base is divided into storage areas on different subjects, called « conferences » or « bulletin boards » or « folders ». And like some other systems, PortaCOM knows for each user how far that user has read in a « confe-

rence » so that when he connects, only new messages will be shown unless he explicitly asks for old messages to be reviewed. This means that all participants need not be connected at the same time. Some users connect in the morning, some in the evening, some only once a week, and they can still participate in the same ongoing discussions and communication processes.

Different from other systems is however, that PortaCOM technically does not store texts in the « conferences », "folders" and "mailboxes". Instead, these storage areas only store pointers to texts stored in a common text storage area. The advantage is that one and the same text can be entered into several conferences, or into both conferences and personal mailboxes, without copying the text. This gives much larger flexibility in usage of the system. A message on "Use of Ada for Graphics" can for example be entered into both the "Ada" and the "Graphics" conference.

Acceptance of PortaCOM in Standardisation Work

The general-purpose design of the PortaCOM data base was accepted by the joint European GILT project when designing new ways for message communication in 1981-83. GILT designed a tool for communication between message systems, based on an abstract model of data base design very close to the PortaCOM data base structure.

The GILT project is being conti-

nued in the AMIGO project, which has input to the standardisation bodies (ISO and CCITT) a proposal for extension of the MOTIS/MHS/X-400 message standards. This proposal was accepted by an ISO working group in Paris in May 1985 and is now being further developed by AMIGO and ISO. In this way, the powerful principles of PortaCOM may soon be embedded into an international standard for messaging.

Status of PortaCOM today

PortaCOM is today maintained, developed and marketed by the QZ Computer Centre in Stockholm under contract with the European Commission. Versions of PortaCOM are in production usage on about 30 computers in many different countries. This number is expected to increase considerably in the next few months. PortaCOM is today in production or prototype usage on a variety of computers (DEC 10/20, VAX/VMS, IBM/MVS and Sperry V1100). Versions for Siemens/BS2000, IBM/VM, IBM/VS1, Prime, CDC/Cyber, Nord-500, Burroughs B 7800, Hewlett Packard and UNIX computers are planned or under development.

Because of its portability to many different types of computers, and because of its neat user interface, its powerful, general-purpose structures, PortaCOM will probably become one of the major messaging systems of the future, and the principles of PortaCOM will have a profound influence on future developments in this rapidly growing area.

DATA-MAIL:
The invisible Swiss postman

Whether large-scale companies with international connections, branch offices or individuals — the problem is invariably the same. The person to whom one wishes to communicate information is not always available — out of the office, travelling, at a meeting — one place or another, but just not reachable. Electronic mail services, such as DATA-MAIL, solve this problem. A customer hires capacity in the central computer of the Radio-Suisse communications centre in Berne, Switzerland. He (and the partner with whom he wishes to communicate) may feed messages into the computer and retrieve them — whenever and from wherever they wish. In other words; information can be transmitted to a partner who can then collect, read and reply all at his own convenience, and vice versa of course. In addition, it is a terminal-to-terminal operation, a correspondence filing system, an information transfer network, and more besides. Operation is very simple. Five basic commands (which can be easily identified with their function) are sufficient for the usage of the mailbox service — even for customers without any computer experience.

There is no bugging, no eavesdropping. The use of passwords guarantees that no unauthorised person has access to the messages. Every user can determine his personal password himself and change it whenever he wishes.

Every dispatched message is „stamped" with date and time that makes sure that the information has reached the recipient. Even if the user wants to know whether and when a partner called up a message, DATA-MAIL can confirm this right to the minute. Another plus point is that electronically transmitted information cannot be lost or misplaced. Messages. once read, are automatically filed and may be retrieved at a later date. In addition users can arrange individual files as they usually do — but electronically. This means that these files are right at the fingertips, so to say mobile archives that can be accessed anytime and anywhere.

Interconnection capabilities enable the system to communicate with numerous different mailbox systems worldwide. Another bonus is that every DATA-MAIL user can contact each and every telex subscriber, without actually having a telex machine himself and everyone of these telex subscribers can also send messages to the DATA-MAIL users without actually being a client of the service.

Hotline is the day and night free service available to any DATA-MAIL client with a problem or a question of any kind.

To illustrate the importance — an example that once happened: Clients in another European country who use both DATA-MAIL and the Electronic Mail Service of that particular country complained that the interconnection system had broken down. Radio-Suisse Ltd. immediately opened a special "hotline" for that country to deal with that particular problem. Within four hours DATA-MAIL clients were able to operate again. But the national system within that country itself took nearly four days before it was fully operational.

For further information on the DATA-MAIL service please contact:
RADIO-SUISSE LTD.
Data-Mail
Schwarztorstraße 61
CH-3000 Bern 14
Phone: 031 65 91 11
Telex: 32 192

A New German Electronic Mail Service

Details have just become available of a new service offered by Orion Mailbox Bremen. This embraces standard electronic mail facilities with the possibility of forwarding and receiving messages from other systems, telex and German videotex subscribers. In addition, Orion offers access to a multitude of hosts and their data bases in a transparent manner: the user indicates his field of interest and selects from the menu presented which particular data base he requires; he then can interrogate the data base using a standard command language and receive his querry output directly or have it stored in his "mailbox". The user therefore does not require passwords or accounts with the various hosts, and indeed may not know on which host the file he uses is loaded. All billing is done through Orion who add a small time-of-use charge. The system offers many advantages to the small user or those who infrequently access data bases outside their normal field of interest. Further details can be obtained directly from Orion, Theresenstr. 24, Bremen.

Competition versus Monopoly in Telecommunications.

A recent study, conducted by Battelle, Geneva, for IBM Europe and subtitled "The Case of Enhanced Services and Customer Premises Equipment : a Note on the Debate in Europe" makes fascinating and illuminating reading. The debate cannot be more succintly summarised than in the report :

"Traditionally, telecommunications services have been viewed as a 'natural monopoly', which can be defined as an industry in which multi-firm production is more costly than production by a single firm, and to which new entrants are not 'naturally' attracted and/or are not capable of survival even in the absence of predatory measures by the monopolist (Baumol). This is essentially the result of economies of scale or of so-called economies of scope. Other arguments in favour of telecommunications monopoly generally include the concepts of essential needs and that of equitable service.

However, it is necessary to distinguish between so-called 'basic' telecommunications services which may constitute a *de facto* natural monopoly, and other telecommunicatons services and equipment which are not part of the *natural* but only of the *legal* monopoly. As a result of new technologies there is an increase of the share of telecommunications equipment and services for which the concept of natural monopoly does not apply, and for which competitive supply is more efficient both from the point of view of users and of the economy as a whole."

As regards enhanced services, the main issues are the definition of these and the boundary between these and basic telecommunication services, cross-subsidisation and the impact of the competition-monopoly debate in enhanced services. There is an underlying trend in some European PTTs to use an expansive definition of their monopoly services to embrace those telecommunication services which would be more efficiently provided by competitive suppliers. The cross-subsidy position makes it difficult for private suppliers to enter the market competition with a PTT monopoly.

In the field of customer premises equipment the main issues involve the degree of liberalisation or restriction relating to specifications and testing or type approval, the standards and procedures for connecting such equipment to the telecommunication network and the hoice of PTT-owned terminal equipment. A liberal policy should contribute, it is considered, to technological progress and more efficient utilisation of the telecommunication network, lower equipment prices and give greater efficiency and satisfaction for both business and houshold users.

The report also addresses the changing perception of the role of government in this area and its effects on inter alia industrial policies and employment issues, and the liberalisation in telecommunications and economic efficiency, which implies not only lowest cost products and services, but also a supply corresponding to the needs of customers.

Copies of the report can be obtained from Battelle-Geneva, Switzerland.

Standardisation and CD-ROM

At a meeting convened by the Commission in Luxembourg on January 22 at the initiative of Learned Information of Oxford, England, over sixty participants heard, probably for the first time, how far and fast standardisation initiatives had progressed in the U.S. and how close Europe is of being faced with a fait accompli. CD-ROM was largely a European innovation and development and yet in the vital matter of standardisation there appears to have been a reluctance to act. In the event, such information as is available on the proposed U.S. standard seems to suggest that problems will arise on such basic issues as header space due to language differences between English and German. It can only be hoped that the decision to set up the Optical Disk Forum as a focus will have been timely enough : the proposed action of assembling all information on the U.S. standardisation efforts and appraising these from a European information industry viewpoint leading to recommendations to our U.S. colleagues, is actively supported by the Commission who here has acted fast and unbureaucratically. There are wider issues and lessons involved : although some regard standardisation activities as a brake on innovation, without standardisation activities the innovator may be left out in the cold.

For details of the Optical Disk Forum and its activities, contact Learned Information, Abingdon, Oxfordshire, U.K. or DG XIIIb, Luxembourg.

Even though it is not by design, it is no accident that electronic mail services figure so prominently in this issue. Public services of this type are a relatively recent innovation, and it is to the credit of many European PTTs that they themselves have taken the initiative in many countries in setting up these facilities. The rate of growth is truly impressive. One service reports growth rates of 100 per cent during the last two years and a twelve-fold increase over a five-year period. The average mailbox owner spends over ninety minutes a month using this. Other available data suggest that on average 60 persons are connected to the central host of one service at any one time — not many in absolute terms, but a growth and usage rate which is not far short of that of the early days of the telephone.

Electronic Mail

The phenomenal market penetration of the telephone came with the interconnectivity of the various local, and later national, systems and was given a further impetus by direct subscriber trunk dialling. Electronic mail service operators have recognised the conclusions and their applicability to their services : interconnectivity is the current buzz word for these, and not too soon. Hopefully links between services are within the terms of the much heralded international standard.

What is the importance in relation to I.E.S. : it is a group of services which is with us today, they function, they are user friendly and cheap. What is more, the amount of sophisticated equipment required is small and low cost. Whilst initially designed for a specialist market, it has all the makings of becoming as widespread as some of the electronic gadgetry found in the majority of households and offices. Given the current interest in Videotex with its need for a keyboard, there is little doubt that the two, electronic mail and Videotex with their basic similarities, will exert a strong synergistic influence on each other. Who would hazard to bet against growth and market penetration similar to that of the telephone or television.

Peter Popper

Future Events.

Teleconferencing in the Marketplace '86
RAI, Amsterdam, May 19-21, 1986

Innovative Software Factories and ADA: Toward a New Style of Software Development.
C.R.A.I., Capri, May 26-30, 1986.

International Workshop on Advanced Programming Environments.
Norwegian Inst. of Technology, Trondheim, June 16-18, 1986

Future Events.

Workshop on Software Testing.
A.C.M.-I.E.E.E., Banff, Canada, July 15-17, 1986

International Expert Systems Conference and Exhibition.
Learned Information, London, September 30 — October 2, 1986

Electronic Publishing: The New Way to Communicate.
C.E.C., Luxembourg, November 5-7, 1986

Communication Services of the Future.
IDATE, Montpellier, November 26-28, 1986.