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Esprit Information Exchange System

iesnews

Issue No 5, August 1986

Starting on August 1, a new service will be available via EuroKom. This is the 'ESPRIT Enquiry Desk', and its purpose is to allow EuroKom users, external to the Commission, to direct questions on matters concerning the ESPRIT program to a single known point, in the form of a EuroKom "person" registered with the name 'ESPRIT Enquiry Desk'. The Desk operator accepts questions in the form of EuroKom letters, and will provide a response within a maximum period of 36 hours during the working week via EuroKom. When the questions and answers are of general interest, they will also be copied to the existing 'ESPRIT Information Desk' open conference.

Only information in the public domain will be available through this service. If an answer would involve restricted material, a response will be given indicating this instead.

ESPRIT Enquiry Desk on EuroKom

This service should simplify and speed up getting replies, as the use of a central 'mail-box' and a co-ordinating Desk operator means enquirers will no longer have to know who deals with a particular area before they can send a question, with the attendant risk of misrouting due to the name being wrong or out-of-date, or delay due to absence of the addressee. The operator will be able to route the questions optimally. A system of logging will ensure that questions are not forgotten, and will also allow monitoring of frequency of questions by categories, which will facilitate the selection of those most likely to be of general interest. Users are encouraged to be succint to avoid dialogues of clarification which will delay getting an answer.

This operation should be a useful utilisation of the EuroKom service and complement normally available of communications such as letter, telephone and telex. It will provide an obvious advantage to EuroKom users, simplifying also the Commissions procedures, by providing information through a speedier informal mechanism.

LATE NEWS,

Information Technology Council

The British Standards Institution has established an Information Technology Council responsible for the preparation of standards dealing with information technology in all its aspects. The former director of the Nat. Computing Centre, D.H. Fairburn, is chairman.

LATE NEWS,

Shortage of Information Technologists?

A recent study by the Brighton Institute of Manpower Studies predicts a likely shortage of information technologists until the end of the decade. An urgent need exists to increase the number of annual graduates in information technology above the planned 7 500 per academic year.

UNICEF established electronic network.

The U.N. Children's Fund has set up the UEIN (Unicef Electronic Information Network) to speed communication between headquarters, national committees and regional and national ofices. The network, based on PC and modem connections, will provide electronic mail, a bulletin board and a full-text data base of UNICEF news and documents.

COTEL:

Computerised Online Translation for European Languages
A New Service Sponsored by IES

Within the context of the ESPRIT I.E.S. Program, the European Centre for Automatic Translation (ECAT) in Luxembourg has developed an online translation service, the objective of which is to provide the ESPRIT Community with fast and inexpensive machine translations. The service uses SYSTRAN, one of the most advanced machine translation systems in the world, to translate source texts from English, French and German into various other European languages. The exact language pairs currently available in the service are :

Source Language	Target Language
English	French
	German
	Italian
French	English
German	English

By the end of 1986, the language pairs French-Dutch, English-Dutch and possibly German-French will be added.

Among the available language pairs, the subject areas that COTEL covers best are :

— information technology ;
— transportation ;
— mechanical engeneering ;
— nuclear energy ;
— aerospace industry ;
— chemical industry ;
— automobile industry.

For each of the available language pairs, the COTEL Service provides users with „raw" translations, which, depending on the language pair, often achieve an accuracy level of 90 % or more. „Raw" translations are sufficient for information retrieval purposes (i.e. for understanding the content of an otherwise incomprehensible foreign language document). If a perfect translation is required for publication a „raw" translation can be post-edited with an effort, which is considerably less than that required to translate conventionally a text in its entirety. The entire translation process is also facilitated by the reduced amount of text-handling required in the service : only the source text is keyboarded on the user's terminal, from where it is sent online to the host for translation ; the translated target text then is received by the user's installation on which it can be post-edited without fresh keyboarding.

The unique aspect of the COTEL Service is its online facilities, which enable the user to submit a source text online and receive a translation back within aproximately an hour, depending on the length of the text and the transmission speed used. In order to take advantage of COTEL's online facilities, users must have at least a microcomputer, a modem, a file-transfer protocol and access to a telecommunication network. Once a user has this basic configuration, he has the option of accessing the system in synchronous mode with the IBM 3780 or Kermit file-transfer protocol or asynchronous mode via an X-25 (or X-28) packet-switched network using KERMIT. A menu-driven, user-friendly interface, which guides the user in submitting and receiving text files and a multilingual terminology management system, which facilitates post-editing, also are available for installation on IBM-compatible microcomputers.

Source texts also may be submitted on disquette, magnetic tape or paper. Texts submitted on paper, however, entail keyboarding charges, which must be added to the basic price for translation.

The price of a „raw" translation furnished by the COTEL Service is based on the number of words, not pages, translated, so that the user only pays for the words that actually are translated. Although prices vary according to volume (i.e. the longer the text, the lower the price per word), a „raw" translation normally costs less than a third of the price for an equivalent human translation.

Perhaps the most essential element in the COTEL Service is the user, whose feedback serves as the basis for improving the quality of machine translation and the service in general. For this reason, ECAT has worked closely with potential users, particularely ESPRIT participants, in developing the COTEL Service and will continue this policy in the future.

Further information on the COTEL Service can be obtained by calling the I.E.S. Help Desk (Tel. : + +352/45-30-30) or by contacting ECAT directly at :

COTEL Service
ECAT S.à r.l.
9-11, rue Jean-Pierre Sauvage
L—2514 Luxembourg
Tél. : + +352/43.83.88

ESPRIT TECHNICAL WEEK 1986

The ESPRIT TECHNICAL WEEK 1986 will be held in Brussels during the week commencing on Monday, 29th September.

The ESPRIT TECHNICAL WEEK is a key element of the annual ESPRIT operations cycle and of the process of dissemination of information on ESPRIT work. As such it is the major annual public event of the ESPRIT programme.

The intended audience for the ESPRIT TECHNICAL WEEK is composed of participants in ESPRIT projects (on-going or about to be launched) as well as others who could be interested by the ESPRIT work : prospective participants, national program administrators, potential users of ESPRIT results, etc.

OBJECTIVES

As a major annual event of ESPRIT activities, the ETW'86 is designed to present the major achievements currently emerging from ESPRIT projects.

Presentations will take place either in plenary or in parallel sessions. Both demonstrations and poster displays will also be featured.

An Open Forum on Wednesday, October 1st, will feature a number of prominent invited speakers and address the general theme of Europe's role and perspectives in the industrial IT scene.

The speakers include Mr. Karl-Heinz Narjes, Vice-President of the Commission of the European Communities ; Mr. Geoffrey Pattie, Minister of State for IT and Telecommunications UK and Chairman of the Research Council at that time ; Mr. Carlo de Benedetti, Chairman of Olivetti. Mr. Michel Poniatowski, Chairman of the European Parliament's Commission on Energy Research and Technology has also been invited. These speakers will address major themes in high technology, and review the strategic importance of IT and industrial cooperation in Europe ; the title of the sessions is „European IT — Turning the Tide".

CONFERENCE TOPICS

The topics for the Conference will come from a broad cross-section of projects in the five ESPRIT Technical Areas : Advanced Microelectronics, Software Technology, Advanced Information Processing, Office Systems and Computer Integrated Manufacture.

Presentation highlights are expected to include most of the following

— CAD for dedicated VLSI circuits
— sub-micron CMOS technology
— common software engineering environment
— design of OSI based distributed systems
— message passing architectures for expert systems development
— logic programming applied to aircraft design
— interconnection of heterogeneous and distant LANs
— handling of mixed media documents based on standardised office document architecture
— communications network for manufacturing applications
— integration of robot systems into CIM

GENERAL INFORMATION

DATES & VENUE

From 29 September to 1 October 1986, Brussels Congress Centre (Palais des Congrès), Coudenberg 3, B-1000 Brussels.

LANGUAGES

Simultaneous translation in English, French, German and Italian will be provided during plenary sessions. Parallel sessions will be conducted in English.

"SPECIAL INTEREST" GROUPS

On Tuesday evening (30 September) groups of delegates who share a common special interest, will be provided with facilities to hold meetings. Participants who want to hold meetings on that day are requested to contact the Conference Secretariat : Rue Archimède 25, 7/3, 1049 Brussels.

ADMINISTRATIVE SECRETARIAT

Registration Forms and inquiries should be addressed to the Administrative Secretariat.

E.C.C.O. (European Congress Consultant & Organizers) Rue Vilain XIIII, 17a, B-1050 Brussels — Tel. (32.2) 647 87 80 — Telex 61434.

R A R

NETWORKSHOP IN COPENHAGEN

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During the first European Networkshop held in Luxembourg in May 1985, the decision was taken by representatives of several European users and providers of networks for use by the research community to found the RARE (Réseaux Associés pour la Recherche Européenne) Association (see IES News no. 1, Autumn 1985, page 11, and no. 4, June 1986, page 10). At the same time, the main activities of the association were mapped out, and it was decided to hold a Networkshop annually.

The second European Networkshop was hosted by the Nordic countries' combined Nordunet network, and organised by Denmark's University of Copenhagen Computer Centre from the 26th. to the 28th. May 1986, with 116 invited participants from 21 countries. Its aim was to bring together the members of RARE, to exchange information on ongoing activities, and to lay the foundations of the work for the forthcoming year. This was particularly important as RARE would be carrying out the definition phase of the EUREKA networking project COSINE (Cooperation for Open Systems Interconnection Networking in Europe) — this has since been confirmed by the COSINE Policy Group of government representatives.

Following a welcome by RARE's chairman Dr. Peter Linington, and a thought-provoking speech on networking in the future by Dr. Birgitta Carlson, Chairman of the Nordunet Programme Committee, the main sessions were as follows :

Activity Reports

On all areas of RARE work, including the EUREKA COSINE project planning, liaison with CEPT and technical aspects such as message handling and file transfer.

Current activities

Message handling services and directory issues.

CEC-funded and industrial projects and functional standards

This session dealt with the COST 11 ter AMIGO project, the ESPRIT I.E.S. development projects ROSE, THORN and CARLOS, and a progress report on the functional standards activities of CEN/CENELEC and CEPT.

Current problems

This concentrated on experience of networking in North America, transatlantic harmonisation and on the performance of open wide-area networks.

Near Future Activities

FTAM, SPAG (Industry's Standards Promotion and Application Group) activities in this area and gateway issues.

Far Future activities

Broadband, high-speed and future network services and infrastructures, including satellites, and an overview of the Commission's RACE programme.

PTT in 10 years and New Services

ISDN, Graphics, security and evolution of PTT mechanisms and services.

The papers presented will be reported in North-Holland's Summer 1986 issue of "Computer Compacts", which will be entirely devoted to RARE. They were of consistently high quality, and represented a fairly complete synthesis of networking activities and services for the research community. In this context, RARE has been in contact with communities organised round specific disciplines, in particular the astronomers and the mathematicians, in order to take their requirements into account as far as possible, and to encourage them to participate.

Worthy of particular note were the recent beginnings of convergence between CCITT and ISO on directory and name-server standards, the progress of CEN/CENELEC and CEPT on the elaboration of European Norms, that of the ESPRIT I.E.S. projects and of SPAG. The session devoted to PTT issues clarified a number of the legal, re-

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gulatory, technical and financial constraints under which PTTs and RPOAs (Registered Private Operating Agencies, e. g. British Telecom) have to operate. Indeed, one of the outcomes of the Networkshop is that liaison between RARE and the CEPT, already effective at the top level (RARE and CEPT's Commercial Action Committee, CAC) is to be broadened to the national level, in a coordinated fashion.

The Networkshop itself concluded with a debate on the place of high-speed networking, and the real extent of the need for it — did it concern a small band of enthusiasts, perfectly capable of looking after their own interests, or was there a broader need? A new working group was set up to try and resolve the issue and determine the kind and scope of RARE's activity in high-speed networking, despite a feeling by some participants that the problems of low-speed networking should be solved before tackling those of high-speed use.

Dr. Peter Linington wound up the Networkshop by thanking all concerned, in particular Dr. Peter Villemoes and his team, who had organised it, and by announcing the next Networkshop to take place in Madrid in the week beginning the 4th. May 1987.

N. K. Newman
(DGXIII, BRUSSELS)

The 100,000th EuroKom message

(100 000) 86-07-24 13,10/6 lines/Ceri J Fisher PLESSEY
Subject : (several receivers)
*** the 100,000 th KOM message !!!
*** congratulations to QZ for making it ***
*** and to them and UCD for keeping it working ***
*** and to all KOM users for making it such ***
*** a huge success !!!
(Text 100 000)

CONGRATULATIONS

Enhanced Local Area Network at Bibliothèque Nationale, Paris

The French National Library has started work on an enhanced local area network, which will be the first in France to combine coaxial and optical fibre cables. It will permit the Library to connect a variety of computers, terminals and information sources from different manufacturers into a single integrated data system with instant access between any two points in the network.

As some of the holdings of the Library are very fragile, advanced image technology will be incorporated into the system : such an image capture-storage-retrieval system will use optical discs and laser printers with high resolution display units to allow rapid scanning. Ultimately, low-cost videotex terminals will give access to the general public.

Homebanking in Germany offered by the Post Office

The German Post Office has announced immediate availability of interactive Teletext banking facilities for customers of the German Post Office Savings Bank. Of the 4.5 million customers, more than 11,000 are already connected to the central Post Office computer installation through their telephone and TV screen. Customers who do not have the required direct connection at home can make use of public terminals provided in the main Post Offices of the major German cities, such as Berlin, Bremen, Hamburg, Munich, Saarbrücken etc. There are no forecasts of expected growth in home users.

Paperless Trading and the Law: THE 1986 CELIM CONFERENCE

The penetration of computers into business life has not only meant ergonomic and commercial change for the business community, but has also raised a number of legal questions that cannot be disposed of lightly. In order that these problems should not exist in a vacuum, CELIM (Commitee Europeene Lex Informatica Mercatoriaque), an association of computer law specialists, was founded in 1985 to study these problems and make concrete proposals which may help bring forward adequate legislation.

CELIM's first annual Conference was held in Brussels in March and dealt with 'Paperless Trading and the Law in the EEC'. The conference was opened by Prof. Michel Vivant (University of Montpellier) who explained the goals of CELIM and emphasised the importance of the legal implications of paperless trading which affect everyone who uses some form of electronic information exchange.

A number of different topics was covered by the speakers. Mr. Friedrich Klein (Director General for the Custom Union Service in the CEC) presented the policy of the European Community with regards to computer assisted commercial transactions. Mr. Klein pointed out that within the framework of the CD (Coordinated Development) project, adopted by the Council of the European Communities in Feb. 1986, the Commission has the power to adopt new measures, notably in the areas of syntax and codes, and those with the aim of developing information processing systems in the field of international trading. Mr. C.G. Anthony, Chief Accountant of Ford (U.K.) Ltd. and Chairman of ODETTE outlined the many problems that face industry and called on governments and industry to tackle these.

One of his main concerns was the authentification of transmitted records and their admissability as evidence in court. R.C. Freeman of HM Customs and Excise was also concerned with the issue of admissability as evidence and outlined some of the problems facing customs officers trying to carry out their duties. He also spoke on how existing legislation already covers some of these problems.

For example, under U.K. law a tape recording is already considered to be a document and there is little reason to doubt that a tape or disk containing recorded material can be regarded as a document in law.

He stressed however that paperless trading could make the job of a customs officer more difficult and called on the Commission to seek legislation covering the Data Protection Act, powers of access to importers' records within the Community, uniform requirements of record keeping and production, and international agreements to gain access to third countries.

An analysis of the legal problems of service enterprises was carried out by Mr. Jacques Rega, head of the CGER-ASLK Bank, for whom the complete automation of operations is a major problem because of the difficulties with identification, authentification and interpretation of messages. Meanwhile, the financial sector introduced paperless transactions at a very early stage with success, thanks perhaps to the confidence which exists between banks and customers.

Dr. W. Sciarone of Philips in the Netherlands delivered a paper on data confidentiality, examining the influence of paperless trading on data confidentiality and also the infrastructure needed for paperless trading. He concluded that paperless trading was possible technically and that solutions were needed for the legal problems.

He called on the lawyers present to seek solutions to the problems of, among other things, a minimum set of standard measures, regulation of disputes, efficient identification methods, security measures and a code of conduct. He also called on all those present to participate in existing projects, and to subject the UNTED (United Nations Trade Data Element Directory) to a legal examination.

The question of authentification of the origin and content of paperless transactions was dealt with thoroughly in a couple of papers. Messrs. Bernard Amory and Xavier Thunis, both of the Centre de Recherche Informatique et Droit of the University of Namur delivered a very detailed paper on this question in the context of continental law while Mr. Simon Chalton of Dibb, Lupton & Co. of Leeds in the U.K. addressed the problem in the context of Common law.

Messrs. Amory and Thunis, while agreeing that existing law did not entirely cover the problems raised, were not convinced that some sort

of legal revolution is imminent. In fact they advised against it as further technological advances would render any sweeping legislative package obsolete.

Mr. Charlton also concluded that current legislation did not cover many. of the problems raised by paperless transactions. Under Common law, information cannot be regarded as property and so there is a great difficulty in controlling it legally and these difficulties will become worse as paperless transacting grows.

The adaptation of existing rules to cover paperless transacting is, according to Mr. Chalton an attrative option but eventually the gap between traditional and new forms of business communication will grow to the extent that legislation will become necessary.

OSIS (The Open Shop Information Systems) was proposed by H. Burkert of the Gesellschaft für Mathematik und Datenverarbeitung mbH, as a legal-technical solution. OSIS, according to Mr. Burkert may create legal problems which will have to be analysed, but it could also help to reduce these.

The main legal aspect of OSIS is the substitution of signature. After analysing the legal functions of the signature, Mr. Burkert stated that OSIS will fulfill the legal requirements of signature and will also guarantee the integrity of the document to be sent. He then examined briefly the questions of the organisation of the OSIS Environment, privacy and OSIS, and Contracts.

Full proceedings of this Conference will be published in the near future. In the meantime a collection of papers delivered at the conference is available from CELIM, c/o C.O.B., rue de l'Orme 19, B-1040, Brussels, (phone 32-3-736 03 05 / 736 03 35, Telex : 61473.) at a cost of 800 FB.

A REMINDER.

I.E.S. HELP-LINE IS NOW AVAILABLE
FOR YOUR ENQUIRES.
TEL. NO. + +352-45-30-30
(SEE IES NEWS, No 4. pg 16)

An European Electronic Mail Association ?

A recent survey conducted by Telephone Research Ltd in the United Kingdom of one hundred medium-sized businesses (50-499 employees) disclosed that only 15 used electronic mail. More than 50 % of the nonusers indicated that incompatibility of the services available was the main deterring factor. The four British services (Telecom Gold, Comet, One-to-One and Easylink), all use different computer software to handle messages and the only link between the four is the telex system.

One-to-One with some 10,000 mailboxes has started an initiative to set up an European Electronic Mail Association and proposed a charter, which should help, if adopted, to sort out the incompatibility problems. The main points of this are :

a : a standard basic command structure compatible with universally accepted standards such as X-400

b : an undertaking to transfer in- and out-going messages within ten minutes of arrival

c : implementation of simple commands to allow subscribers to address messages to other systems

d : a uniform charging structure for internal and forwarded messages.

If EEMA becomes a reality, it should help to make electronic mail as commonplace as the post in a relatively short time.

General

As will be seen for the individual items below, many of our major enhancement projects moved to completion in June, and are undergoing Beta-Testing during July and August. Although we have had some fine tuning to do, particularly with the telex connection, the various programs and interfaces are working as expected. These interfaces required substantial work over many months, and full credit is due to all concerned both in the EuroKom team and UCD Computer Centre. By the time we meet many of our users again at the ESPRIT week, you should all be experienced users of the various inter-networking facilities now available.

Invoicing

When we commenced the service, it was difficult to predict usage levels and patterns, and the invoicing arrangements users would like. Now that we have a large base, some patterns have emerged ; we have also had feedback from the User Questionnaire regarding invoicing arrangements. Many users have difficulty with processing our small invoices, and more flexible invoicing (such as group invoices, or usage aggregation to an agreed amount) have been requested from time to time.

Following an in-depth review of the various options, we have decided to transfer our invoicing systems from the current VAX to an in-house PC/AT, using the Omicron software. This will give us the sort of flexibility we need to satisfy needs such as those above. At the same time, to reduce the size of the package that users receive (and to simplify our administrative effort), we are proposing to park the usage reports in EuroKom every month, so that any user with a query can simply view his usage file. The invoice will then simply contain summary information and account balance details.

To further simplify payment procedures, we have set up an account in Brussels, and our new invoices will contain a payment slip precoded with our account number, the user balance, and the user account details.

While all of this may appear a bit boring, we hope to reduce the level of queries coming through to the Help Desk in relation to accounting issues, and this streamlining will be welcomed by most users. Letters will go out with all invoices explaining the changes, once we complete the transition from our VAX systems.

Network congestion

There is some confusion at the user end about the source of this message, which users sometimes get when they enter our X-25 address. In most cases, this does NOT indicate that all of our ports are busy. We currently have 16 ports, and will be upgrading within weeks to 20, and during August to 32. However, our current 16 ports are only occasionally fully used (note that EuroKom people, and users locally in Ireland, generally come in through the UCD PACX, so the ports referred to are reserved to users outside Ireland).

In most cases, the NETWORK CONGESTION message comes from the local X-25 network, such as DCS in Belgium or PSS in the U.K., and means that the international data networks cannot find a path through to EuroKom. As a case in point, one of our EuroKom staff, during a visit to the Commission, tried to use EuroKom at about 8.00 a.m. from the Commission buildings, and received the 'congestion' message continually. When he dialled long-distance to a direct-dial modem, he got through right away, and there were only four users on the system, i. e. 12 ports were free.

Incidentally, although the documentation does explain this, many users seem to forget that we have TWO addresses in X-25 for EuroKom, that is :

27243154002 and 27243154003

In some cases we find that a user consistently tries only one of these. To allow for this user behaviour, when we upgrade to 32 ports, we are investigating a hunting arrangement between the two addresses. A user dialling, for instance 272431540002, would in fact hunt for any port available across both addresses. Not as simple as it may appear, but the problem is being looked at.

In general, if a user consistently gets NETWORK CONGESTION messages, he should get in touch with his local X-25 support point. If we can help with details of these people for the various countries, let us know.

KERMIT

We have had the latest Kermit release (version 2.29) for some time, and we are happy with the new features. Briefly, this version supports VT 220 emulation, and we will be recommending it's use for

full-screen access to our database on the Unix machine for ESPRIT participants. This version recognises DOS path-names, so file transfer from and to hard-disk machines becomes easier. (This article was transferred from a Plus Four disk-on-a-card to EuroKom using Kermit 2.29).

Incidentally, for those people who like auto-dial, auto-logon, cut-and-paste for Wordstar to EuroKom, etc., we have been using DESQview for some months with Kermit, Wordstar and Lotus coresident in separate DOS partitions on PC. This provides a very powerful and flexible environment around EuroKom, and DESQview allows function keys to be programmed separately within each DOS partition.

The result is that, with a free (public-domain) communications program like Kermit, and some simple work with DESQview, you can reproduce many Macintosh-like features on any boring old PC-DOS machine. The simple ability to swap back and forth between Wordstar and EuroKom is extremely useful for the regular user.

NEW DOCUMENTATION :

Suggestions, criticisms, and many quite positive comments were received from the evaluation group at the Commission. With vacations and absences, we did not obtain the comments back until early July, and the material is now going into final art-work and type-setting. We are still targeting a bulk mailing during August to all users. In general, many of the evaluators expected the File Transfer section to include lengthy explanations on Kermit. The MS-DOS Kermit files we get from Columbia would constitute a bulky manual in themselves and MS-DOS is only one small part of the full Kermit material. We will probably be forced to stock copies of the complete Kermit material, and send it to interested parties (for a small administration fee).

TELEX INTERCONNECT :

During Beta-Testing, many users had difficulty with the need to type carefully such expressions as HOST = @TELEX and %TO JOE BLOGGS. Although only two lines of precise typing were required, most of us are used to typing fast and inaccurately, and telexes were being directed to strange and unusual locations.

To obviate the need for this precision on the part of the user, we have totally rewritten the user interface, and the user's input is now program-driven. To send a telex, you now simply type 'telex' as a command, and the program asks for the various pieces of information it needs. If, for instance, the user does not know the precise country code, entering a question-mark will produce a complete list. Typing HELP at any point will also give friendly assistance during the exercise.

Embarking on this program-driven interface necessitated a delay, but it will be worth it in the longer term ; we need to minimise the support level associated with such interfaces, as there will be many of them. The new interface has been re-released to the Beta population, and should be widely announced in late July.

OTHER CONNECTIVITIES :

GENERAL :

The interconnections described below require some general explanation. In response to the normal default prompt on EuroKom, a user typically directs a letter to another user. This letter is entered into the EuroKom database, and is presented to the receiver as soon as he signs on.

In the case of remote connections, the sequence is somewhat different.

Thus for the Mailnet connection, one would type : Letter HOST = @MIT-MULTICS.ARPA. EuroKom acknowledges this, and presents you with the normal subject prompt, which you choose as usual. In the first line of text, however, before commencing the body of the message, you need to enter the user name on the remote system, followed by his pathname. For example, in the session below, a message is directed to Dennis Jennings at Princeton University.

EXAMPLE :

(Get) daytime. — letter host = @mit-multics.arpa

(Send a) letter (to) HOST = @MIT-MULTICS.ARPA

Receiver : HOST = @MIT-MULTICS.ARPA

Subject : Test Message

%to :jennings%pucc.bitnet@mit-multics.arpa (Typed CAREFULLY

EuroKom News

by user)
Message Text
....
....
!send

This message will now sit in a file on the EuroKom machine, waiting for Mailnet to dial in and pick it up (currently twice per day)

In general, all of the remote connection, including the Telex interface, work in this way ; the letter is sent to a remote host, with a very precise address path specified in the TO field, and the remote host looks in occasionally to pick up mail from EuroKom.

EUROKOM TO U.S. NETWORKS (Mailnet)

Work to establish a linkage between EuroKom and Mailnet is completed and is now on Beta-Test. We expect a short test period and should be releasing this to all users in early August.

This link is expected to offer the capability of passing messages from EuroKom to research colleagues in a number of networks (CSNET, ARPANET) in the U.S. and Canada.

EUROKOM TO UNIX INTERCONNECT

The long requested ability to exchange messages between the two mail systems predominantly used by I.E.S. users is around the corner.

Linkage between EuroKom and the Unix host at UCD has been under Beta-test and is expected to be available by September. The UCD Unix system, under the name EUROIES, is linked to EUNET and specifically can forward messages to MCVAX (Amsterdam) and PRLB2 (Philips Research Laboratories, Brussels). Through this linkage messages can be sent and received to and from all Unix nodes in the network worldwide.

EUROKOM TO QZ-COM :

Completed, has been on Beta-Test for some weeks, and is working well. Because of final tuning needed at QZ, the Beta-Test population is still using the York connection. Although this path is transparent to users, we will not fully release the interface until the path is directly into Stockholm.
EuroKom UCD, DUBLIN.

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

TASK FORCE MERGES WITH DGXIII

At its meeting of 25 March last, the Commission decided that the Directorate for Information Market and Innovation, known as DG XIII, should merge with the Information Technologies and Telecommunications Task Force.

At their meeting of 1 April the Commission decided that the new Directorate General should assume the name of "Telecommunications, Information Industries and Innovation". This new Directorate General will operate from the original offices in Luxembourg and Brussels. Mr. M. Carpentier , director general of the Task Force, has been appointed Director General.

This reorganisation is aimed at allowing the CEC to address itself, in a better coordinated way, to a highly dynamic sector of an industry of great importance to the European Economic Community.

More precise details of the reorganization and its effects will be given in future issues. Until then, for those involved in programmes like ESPRIT and RACE, the ITT TF is to be referred to as DG XIII.

(The Obviously Required Name-server)

Thorn

1. Introduction

The THORN project (The Obviously Required Name Server) is funded by ESPRIT to develop directory facility software which, when realised in terms of industry supported products, could potentially be used as a component of its Information Exchange System (I.E.S.) and in other related international activities (RARE, COSINE). The project has four aspects :

i. Implementation of directory facility software on a number of different types of computers of successive levels of the standards with the objective of implementing the draft international standard expected to be published early in 1987.

ii. Integration of directory facility software with X-400 message services operated by the participating organisations.

iii. Demonstration of pilot services of the above for at least the purposes of the participants, and possibly a larger experimental community.

iv. Feedback to standardisation bodies of experiences and results gained in the pilot service experiments.

2. Background

Directory services are required in order that (human and computer) users can locate objects in the OSI environment (Communication Entities). There are two aspects to this problem, both of which can be resolved only by use of Directory Services. First, a name identifies a communications entity which has certain properties and a physical location on the OSI (or other !) network. Thus a user is able to locate the physical address of a communications entity by using a symbolic name. Secondly, for practical reasons it is expected that physical locations on an OSI network may change. As long as the data base of basic information is kept up-to-date, a user may access a communications entity using the symbolic name in spite of a change in physical location on the network.

Such is the importance of a directory service that standardisation bodies are very active in this area. The latest of these activities which has reached sufficient stability for practical implementation to begin is the ECMA standard (ECMA 85a). The developers of this standard (European Computer Manufacturers) are now working in conjunction with experts on the European and international scene to define the joint CCITT and ISO standard. These wider activities are vital since the success of a directory service is dependent on having globally agreed standards.

The THORN project has been planned against this background of evolving standards. During the first two years, THORN depends on the ECMA standard, the only one of sufficient maturity on which to base prototype software. In the third and final year, an implementation will be made which is aligned as far as possible with the ISO/CCITT specification (expected to be DP) in February 1987.

3. Project Overview

The THORN partners fall into two distinct sets : industrial and research partners. The former are the ROSE partners : Olivetti, Bull, GEC, ICL, and Siemens ; and SW (an Italian software house). The larger contributors from the industrial partners are Olivetti, who are prime contractors for the THORN project, and SW who are providing the major design and implementation effort. The other ROSE partners will port the SW implementations to a range of hardware types, so that it can be demonstrated in a heterogeneous environment. The research partners are : CERN (the European Laboratory for Particle Physics), CNUCE (the Italian Central National University Research Centre), DFN (Deutsches Forschungsnetz, the German Academic Research Network), INRIA (Institut National de Recherche en Informatique et Automation), and UCL (University College London). CERN and DFN will have their major roles later in the THORN project, when they will incorporate the software into a large-scale experimental service. INRIA, UCL, and DFN will conduct background studies to be applied to the SW work in a subsequent round of implementation. Initial work will be on a concrete naming architecture appropriate for use with the early THORN implementations,

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and on a detailed study of the problems of distributing a directory service. These areas have been consciously left flexible in the preliminary specifications.

In order to provide a test bed for the directory facility software being developed, THORN intends to use message handling since the X-400 standard is now defined and European norms (CEN/CENELEC/CEPT) are due for publication in 1986. All THORN partners have agreed to support this profile of X-400 thereby ensuring connectivity between all sites and work is well advanced in implementations on the different computers.

THORN depends on close collaboration with the ROSE project with which it has all industrial partners in common. Availability of transport, session and message handling software from ROSE means that THORN partners can concentrate on directory facility software aspects, building on the results of the ROSE project. Where required, this software has been ported to the non-Unix machines of the academic partners.

The THORN project is implemented in three phases, each phase lasting approximately one year. Each phase consists of specification, implementation and testing with users in pilot exercises. In this way, not only should software be exercised realistically in a user environment but also input from users is available for the specification stage of the next phase. Although the larger number of partners resulting from this kind of project organisation increases the coordination task, it is considered that extensive usage of the software and the user feedback more than compensates and this project organisation is seen as a particular strength of the THORN project.

The THORN Directory Service model (also the ECMA model) has a directory managed by a number of Directory Service Agents (DSAs). A user gains access to the Directory Service by use of a Directory User Agent (DUA). The DUA interacts with a DSA by use of a DUA ⟨—⟩ DSA protocol. This DSA may answer the query from local knowledge (i.e. from information contained in the portion of the directory which it manages or from locally cached information) or may pass the query to other DSAs for resolution. THORN will implement all of the components of a Directory Service, up to a fully specified (program) interface between a user process and a DUA.

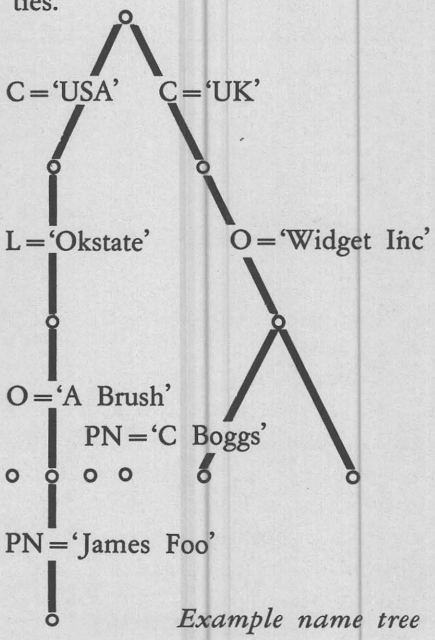
The initial THORN implementation follows an ECMA model of naming. A name is considered to be the globally valid information which identifies a Communication Entity. The name space contained in the directory is structured as a tree. This hierarchical structure allows for distribution of both the Directory and of Namespace Management. Each leaf of the tree is associated with a Communication Entity. The directory contains information associated with each Communication Entity (leaf) as a set of properties. For example, if the communication entity is a printserver, there might be two associated properties :

1. The OSI address of the printserver.
2. A human meaningful description of the printserver (e.g., „The laser printer in room 301 of the Olivetti main building at Ivrea").

Each arc of the tree has an associated name part wich consists of a 'name part type' and a 'name part value'. For example an arc representing the country France would be :

'name part type' = Country and 'name part value' = France.

Thus a tree can be built to represent a set of Communication Entities.



Example name tree

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The abbreviations in the above diagram indicate name part type, and are : C — Country, L — Location, O — Organisation, PN — Personal Name. It is often desirable for a Communication Entity to have more than one name. This is achieved by use of aliasing. Each Communication Entity has a 'distinguished name' of the form described above. An alias is like a distinguished name, but rather than holding the associated properties, the leaf simply contains a pointer to the distinguished name. Other facilities include partial matching, and the return of all entries matching a certain combination. Wildcarding is clearly a useful concept, but needs to be controlled as name queries such as (C="*", O="*", PN='Smith') would be prohibitively expensive to evaluate if * returned all matches. The initial THORN aproach of returning only the first match is more controllable, but is not such a useful user service. It is hoped to study this area.

Given this naming framework, three basic services are defined :

1. A White Pages Service.
2. A Yellow Pages Service. ([1])
3. A Management Service.

The White Pages Service takes a name specification, and a set of property types, and returns the property values. The user will be able to specify partially a name to query the Directory Service to determine possible values for the remaining components. This is important to allow the service to be queried in a flexible manner, as a given Communication Entity may often be identified in many different ways.

The Yellow Pages service takes a set of properties (property name/property value pairs) and returns an associated name or set of names. Clearly this service would be prohibitively expensive in the general situation, and so the service can be limited in scope to some portion of the naming tree. This associative lookup allows identification of all Communication Entities with a given set of properties. This service might be used typically to identify a local facility. For example if there was a property 'Quality of Print Service (QOPS)', the yellow pages query QOP = 'Letter Quality', limited in scope by (C='UK', O='Widget') might be used to identify a quality printer at Widget Inc.

The management service consists of a number of elements to change the name tree and properties. This includes facilities for adding, modifying and deleting : name components, leaves (distinguished names), aliases, and properties. The management services are seen as particularly important. Experience with centralised services has shown that managing the namespace has been more of a problem than the basic nameserver query problem. Although the problems of keeping the namespace and property information complete and up to date has a large administrative component, it is essential to provide good tools as a basis. These tools will in turn require a flexible set of directory service primitives.

All communications between the THORN components make use of ISO OSI services, up to layer 5. The directory protocols are specified by use of the Remote Operations Service (ROS) as specified by ECMA. This provides a clean mechanism, both for specifying the protocols, and for specifying the interface onto OSI services. This approach allows for the maximum use of existing standards and implementations. The last should simplify the porting of the THORN DUA onto as wide a range of systems as possible, and allow experimentation with different lower levels.

The first implementation only has a single DSA. This simplification has enabled relatively rapid implementation, and will provide a basis for extension. Replicated directory services will be implemented with this implementation. A pilot service is scheduled to start during the latter half of 1986. A fully distributed service is scheduled for experimental trials in the middle of 1987.

The following areas have been identified for study by THORN, as key problems in building a large Directory Service :

— Replication, distribution, and navigation.
— Naming strategy.
— Access Control, and Authorisation.
— Mapping the Directory onto an underlying filestore or database.

4. Progress and Experience

The initial THORN implementation is complete. The DSA has been demonstrated locally, but difficulties with ROS/Session have so far prevented remote use. However, it is expected to overcome these in the next month. The DUA has been ported successfully to a number of different pieces of hardware, and Unix variations.

Also, a communications infrastructure has been built up. Electronic messaging is the mechanism for communication between the partners. The links use a number of protocols and networks, in particular Eunet, and two early X-400 systems : the EAN system from the University of British Columbia ; and the GIPSI system developed at INRIA. Distribution lists at UCL have proved to be an important mechanism for sending reports and documents to the partners. All documents have been made available online in a standard format, which has proved to be significantly easier than managing bulk paper mailings.

Work is underway in three areas :

— Integrating the initial software into applications, to demonstrate its viability in a 'limited large-scale pilot exercice'.

— Extending the initial system, in particular to provide support for basic replication and distribution.

— Specification of the final THORN system, in line with the CCITT/ISO work.

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References

CCITT84a.
CCITT SG 5/VII, "Recommendations X.400," Message Handling Systems : System Model — Service Elements, October 1984.

ECMA85a.
ECMA TC 23, "Directory Service Standard (final draft)," ECMA-XX

(1) Although the terms White Pages and Yellow Pages have human meanings, they should be considered here as technical definitions. In many cases, they can be used to provide services corresponding to the human meaning of the terms.

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ISDN

The International Chamber of Commerce's view.

The ICC has now published its Position Paper No 6 "ISDN — A Future Universal Telecommunications Network : A Business User View". This Report is a document of basic importance to users and can be obtained from the International Chamber of Commerce, 38 Cours Albert 1er, 75008 Paris.

The Report makes it clear from the outset that the many complex technical ISDN issues currently under discussion are not the prime concern of users. "Rather they must concentrate their limited resources upon broader policy questions. ISDN will be judged, not by its technical excellence but by the extent to which users' long-term needs are satisfied."

What are then the main areas of concern to businesss ? The Report identifies six key questions :

* Will the benefits received be proportionate to the public and private investment involved ?
* How will the advent of ISDN affect the freedom of choice so essential to the business user ?
* Will telecommunications service providers use ISDN to extend their monopoly positions ?
* Will the provision of existing, highly regarded, services continue ?
* Will the basis upon which charges are to be levied be fair and equitable ?

* Will the transition to ISDN disadvantage users of existing services ?

The Report then proceeds to suggest guidelines regarding the direction that ISDN policies should take and recommends that these form an agenda to promote discussion on fundamental economic and regulatory policy. In view of their great importance to users we set these out below :

* Users should be able to utilise ISDN in a manner which fulfils their needs at any given time and should have the freedom to select among alternative transmission services.
* To enable the private and public sectors to play their full roles in the development of ISDN the question should be addressed as to which products and services should be provided by competing or monopoly suppliers. In principle the scope of existing monoplies should not be extended into markets better served by open competition.
* An adequate but minimal set of specifications for the interfacing of terminals and other equipment with the network should be defined at the international level for each of the CCITT reference points and implemented nationally.
* National implementation of these interfaces should be arranged so as to give users and suppliers maximum flexibility and, at the same time, ensure that compatible access and information exchange are available globally.
* There should be a competitive market for the provision of equipment for attachment to the network and the preconditions for attachment should be the minimum necessary.
* ISDN should be implemented in a manner which will give users maximum flexibility in the future use of its capabilities, allowing the widest variety of user-defined services and facilities to be developed.
* Plans for the transitional period should take into account the need for users and telecommunications agencies to obtain a proper return on existing telecommunications investments and to avoid disruptive changes in users' internal services.
* Migration to ISDN should not be forced by artificial price increases.
* Tariffs for ISDN services should be stable and conducive to innovation.
* The general direction in setting tariffs should be such that they reflect the cost and structure of efficiently providing ISDN including a reasonable return on investment. Cost elements introduced for socio-political reasons should be clearly identified and their limits made explicit.
* Support should given given for the rapid extension and improvement of telecommunications in developing countries with ISDN constituting a long-term goal for them.

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

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or via EuroKOM.

Post scriptum by Prof. ir. T.M. Schuringa Director Telecommunications, DG XIII

I appreciate the interest of the ICC in the development of integrated services digital networks. It shows that the big business users have realised the importance of ISDN for the enhancement of efficiency and quality of to-day's services and future new services. As ICC tries to express a viewpoint valid for the whole world, a number of the guidelines which are proposed for the direction of ISDN policies do not fit in the European context. In this respect I would like to refer to the Communication by the Commission to the Council of Ministers concerning the coordinated introduction of ISDN in the European Community, COM 86 (205). Copies are available on request.

Esprit
Information Exchange System

IESNEWS

Issue No 5, August 1986

During a recent brief visit to the U.K. your editor could observe a noticeable change in attitudes to modern technology in general and computer systems and networks in particular. The fascination with computer games has gone, and the many recent reports and articles showing the manpower savings on automation (especially in the newspaper industry) and data privacy appear to have had the opposite effect from the intended one. Even descriptions of the vast new information system for the stock exchange and the insurance market have failed to capture the public imagination. This does not, however, appear to have stopped the laying of glass fibre cables which is proceeding without regard to the traffic chaos ensuing from the many work sites.

Editor's Corner

Another interesting aspect is the gradual abandonment and even reversal of decentralisation by large firms who have or had central offices with thousands of staff : apparently the hope of using telecommunications (including in some cases closed-circuit TV) to allow smaller peripheral offices to be introduced with the aim of reducing travel time of staff and high central rentals has been a failure. The best telecommunications were apparently no substitute for personal contacts, especially at the middle management level.

There are lessons to be drawn from both these trends : introduction of modern technology, especially one that has direct influence on a wide stratum of the population, requires careful preparation and education. Developments under ESPRIT sponsorship including I.E.S. will require a prepared market, well in advance of product availability. The opportunity should not be lost.

Future Events

Electronic Publishing : The New Way to Communicate. DGXIII, Luxembourg, Nov. 5 - 7, 1986

VDM (Vienna Development Method) Symposium. DGXIII, Brussels, Nov. 11 - 14, 1986.

Requirement Analysis : Methods, Languages, Tools. ESPRIT INTEREST Group on Environments, Brussels, Nov. 25, 1986

Telework : Present Situation, Diffusion and Future Development. Wissenschaftszentrum, Bonn, Mar. 19 - 20, 1987

Message Handling Systems. IFIP, Munich, Apr. 27 - 29, 1987

ADA Components : Libraries and Tools. CEC and ACM, Stockholm, May 26 - 28, 1987.

Distributed Computing Systems. Seventh Internat. Conf., Hahn Meitner Inst., Berlin, Sept. 21 - 25, 1987.

Future Events

Information, Communications and Technology Transfer. FID Conference, Montreal, Sept. 14 - 18, 1986

ASIDIC Fall Meeting, New York, Sept. 14 - 16, 1986

Information : An International Viewpoint. Eusidic Annual Conference, Uppsala, Sept. 22 - 25, 1986.

Initiatives fostering new Ventures Creation. SDA Bocconi Workshop, Milan, Sept. 26 - 27, 1986

User Interfaces. Duttweiler Inst., Zurich, Oct. 20-21, 1986.

Audiotex : New Opportunities in Voice Services. Online, Boston, Oct. 27 - 28, 1986