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# Esprit Information Exchange System

# ies NEWS

## Issue No 9, April 1987

The present evolution in telecommunications resulted from the growing need for information transfer between a large number of users. Research and development activities in COSAC commenced following the ratification by CCITT of the X-400 recommendation for electronic mail.

The aim of COSAC is to offer to users high-level services for information exchange. Some of these services are already covered by ISO or CCITT standards and others are currently defined by working parties such as Architel or COSAC.

The COSAC network offers the following services:

- electronic message exchange developed on the basis of X-400
- file transfer (TFMM) as defined in interim specifications of the Architel group
- conference interconnection in message code (CRMM) and job submission in message mode (STMM) in accordance with definitions established by the COSAC group in collaboration with CNET, INRIA, BULL and others.

## Communication without Connection. **COSAC!**

The operation of the network requires some aids for the users, such as

- a distributed directory derived from earlier work by IFIP and CCITT
- a network management system
- and other services such as data-base updating facilities and interrogation which are currently under consideration.

The COSAC architecture is based on standards (ISO, STUR, Architel, X-400) so that the network services can be offered on the maximum number of different computers. The actual network is composed on interconnected nodes offering the above-mentioned services: these nodes comprise a variety of machines (SM90, Vax, Multics etc) on which the COSAC software has been implemented.

### LATE NEWS

#### **CADDIA Report Published**

The first annual report, covering the period to June 1986 has now been published and is available from the CEC (Mr. Picard) 200 rue de la Loi, DG XIII, B-1049 Brussels.

#### **Bundestag to Introduce New Telecommunications Systems**

A new internal telecommunications systems, Parikaom, is to be made available to the Bundestag and its members to supplement the existing databanks.

### LATE NEWS

#### **Beneficial Effets of a Strike?**

According to the Communications Manager of the London Stock Exchange, the recent strike of British Telecom engineers coincided with fewer circuit failures, due in his view, to fewer people meddling and climbing all over equipment and thus damaging the circuits.

### ICONE:

#### **A Patent Databank**

As part of the SPRINT program, the Commission (DG XIII) has started a compilation of an index of those national standards which correspond either wholly or partly to international ones. The work is being performed by CEN (Mr. G. Michaud), 2 rue Brederode, B-1000 Brussels.

The figure below shows an example for the general network architecture. It is based on the MHS model included in X-400.

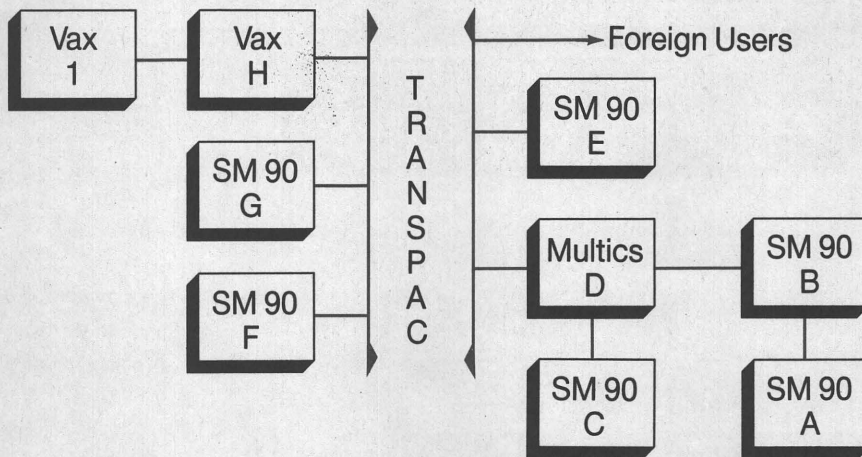


Fig. 1

In this example, users of one node can exchange electronic mail, files, etc with users of other nodes.

The next figure illustrates schematically the working of one COSAC node.

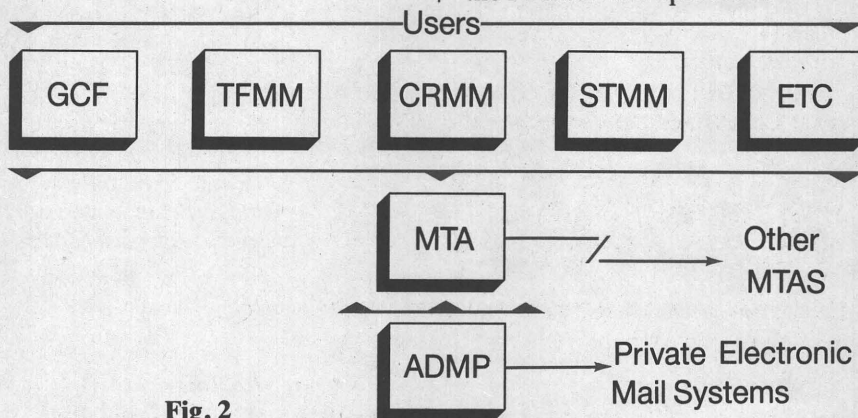


Fig. 2

The software used is termed COSAC Application. This meets the requirements for a Message Transfer Agent (MTA). Transfer of electronic mail, files, etc. takes place through interchanges between two MTAs. Any exchange is carried in an envelope with the address of the recipient and the actual message. The MTA module has three main functions:

- it acts as interface to other modules such as a GCE (Management of electronic mail) or TFMM

- it acts as a relay between the transmitting and receiving modules
- and assists in transferring messages between two MTAs.

Use is made for these functions of the P1 inter-MTA protocol.

The GCE (Management of electronic mail) module corresponds to IP-MUA (International message user agent) of X-400 and offers these functions:

- interface management between user and MTA
- management of cooperative services between GCE modules, such a message exchange.

This makes possible a person-to-person message system using the P2 inter-GCE protocol.

The TFMM (File transfer in message mode) module again makes use of the functions offered by MTAs. It comprises the following:

- management of the interface between the user and MTA
- management of cooperative services such as sending a file to a number of recipients or fetching a file.
- management of access protection for files.

The P10 inter-TEMM protocol is used.

The CRMM (Distributed conference in message mode) module where a conference resembles a dedicated letterbox not open to random messages but accessible for a given subject to a closed user group, offers the following facilities:

- local editing for composing an entry or commenting on this
- interface management between user and the MTA
- management of cooperative services between CRMM modules like sending and replying to messages
- administration of a conference.

Here, the P30 inter-CRMM protocol finds application.

The STMM (Submission of jobs) module allows users to submit jobs for execution on other machines and recover the results. The functions involved including management of the joint services and protection of access are covered by the P20 inter-STMM protocol.

Among other modules under development mention should be made of BIMM (Database in message mode), the aim of which is to distribute information to multiple sites for consultation by users

## Layer Representation

The COSAC application is contained in the application layer of the ISO reference model. The figure shows the representation of layers in the X-400 model.

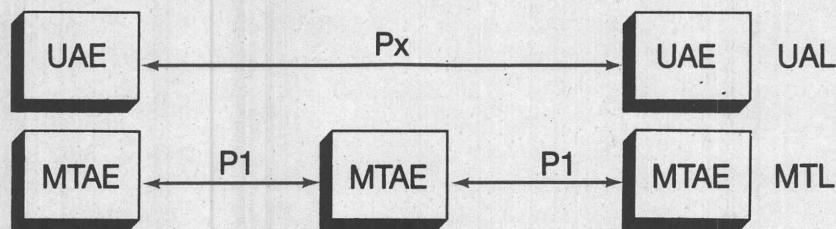


Fig. 3

The array of MTA units forms the MTL layer, and that of UA units the UAL layer. The MTL and UAL layers form the applications layer.

One UA unit corresponds to

- one GCE module using the P2 protocol
- one TFMM module using the P10 protocol
- one STMM module using the P20 protocol
- one CRMM module using the P30 protocol

## Addressing and Naming

The COSAC software manages addresses as defined in X-400. An user is defined by a name (O/R) and the routing function involves both the name and address. An O/R name comprises a number of attributes (country, town, personal name etc) and could be one of four variants, all of which are accepted by the COSAC software.

- a. The O/R name is a X-121 address: as such terminals will only be available in 1987, messages

containing this type of address cannot as yet be delivered.

- b. The O/R comprises a country name, a department name and a unique identifier. A department is an unit which manages messages at a national level and

allocates to users unique identifications.

This type of address will either generate a message without delivering the contents or transfers the message to the public mail system.

- c. This is similar to b with the unique identifier being of the X-121 type and treatment as in a.
- d. Here the O/R consists of a country, a department name, and one of the following: a private domain, an organisation name, an organisational unit or a personal name.

The private domain is a legal entity which offers transfer of messages, and can manage a number of organisations - an example of this is MISSIVE, the electronic mail system used by several companies.

Variants b, c and d accept fields which are not standardised so that other non-X-400 services can be addressed through the ADMP module.

Routing is a relatively complex process since the O/R names allow of a

wide variety of structures. To keep all options open it is therefore best to use tables containing the maximum of information. COSAC offers means for management and modification of such tables.

The various protocols involved use the syntax as defined in X-409. Each element of a protocol is represented by a triplet comprising identifier, length and value.

## The COSAC Modules

The MTA function is provided by the GM (Message management) and TM (Message transfer) modules. The GM module addresses and processes the messages originating from an UA or a neighbouring MTA, recording receipt and handling, and adding such forwarding information as may be required. The TM module in turn controls the actual message transfer. One of the important aspects of COSAC is the interconnection between heterogeneous message systems. The GCE module uses the P2 protocol to manage electronic mail and provides the interface between the user and the GM module. It includes the IU (User interface) module which presents and receives all the information from the user (and manages also the type of terminal used). Currently it operates with a VT-100 terminal or Minitel in French or English.

The charging mechanism has not yet been standardised but has been designed to allow of a wide variety of final choices.

## Actual Status

The COSAC software is written in Pascal for an SM90 (UNIX). The V3 version has been operational since mid-1984 with the following modules and functions:

- MTA, with node transfer still based on TTY procedures and the P1

protocol not fully implemented  
– interconnection with the following mail systems: Multics, UNIX, Missive, Forum, EuroKom (the messaging system of the Commission), IBM and VAX-Vms.

In practice, 4 COSAC nodes interconnect some 30 electronic messaging systems.

Current developments in hand concern the porting of COSAC to other hosts and systems. Furthermore the V5 version has been completed: it is again written in Pascal for an SMX4.1 with most of the modules discussed above completed by various members of the COSAC team. Like V3, V5 is being ported onto various computers. Other plans include the interconnection between COSAC and DFN.

BASED ON MATERIAL  
SUPPLIED  
BY THE COSACTEAM.

## The European Electronic Mail Association (EEMA) Background Information and Inaugural Meeting

Electronic mail and messaging systems have existed in their many forms for some time. Now the market for this type of electronic communications is developing and it is becoming evident that isolated and insular systems have limitations which are seriously inhibiting the growth in numbers of users. But now the standardisation work on X-400 and document architecture are coming to fruition.

Yet in industry today, there are still many questions concerning the benefits, status, experiences, research and problems associated with electronic mail. By bringing together the various interested parties in Europe, EEMA seeks to provide a forum for the exchange of information, opinions and analysis between:

- users,
- vendors,
- service providers,
- PTT'S,
- governments,
- the academic world and national and international interest groups.

EEMA, as an independent association, will also promote and encourage the use of electronic mail. By this means the European Electronic Mail Association hopes to contribute to the success of electronic mail and message handling systems in Europe.

The inaugural meeting and first general assembly of EEMA took place on March 24 in Paris. The purpose was to lay out the long-term objectives and the key priorities and activities for the coming year. Several high-level speakers, including J. Grenier (French PTT), M. Benedetti (STET, Italy), J.M. Piquet (SPAG), J.F. Pedersen (Danish PTT), and T. Schuringa (CEC) addressed the meeting.

Further details from:  
EEMA Secretariat a.i.  
Ids Zandleven  
Philips International B.V.  
Building VN-5  
P.O. Box 218  
5600 MD Eindhoven  
The Netherlands.

## An Apology

In the "Earn and Rare" article published in the February issue, we inadvertently omitted to state that this was based on information supplied by Dr. Bryant, and not written by him. We apologise for any inconvenience this may have caused.

The Editor

## Centre for Telecommunications Development Established

Following the decisions by the International Telecommunication Union (ITU) to set up advisory services and technical support to developing countries to assist in reducing the imbalance in telecommunications distribution in the world, a centre is soon to be operational in Geneva to meet these requirements. Activities of the new centre will include assistance in formulating policies for

evolution of networks in developing countries, as well as specific help in project planning and management, training, research and development. The address of the centre is at ITU headquarters. The centre is headed by Mr. Dietrich Westendoerpf, executive director, ITU, Place de Nation, CH-1211 Geneva 20.

# Reader Survey

## Results and Conclusion

Last October with issue no. 6, a simple questionnaire was sent to the subscribers of this publication. This article summarises the first 304 responses (8.6% of our subscription list of 3.500).

We have compiled the statistics and, as promised, here are the results and some of our conclusions.

For the distribution of the questionnaires, the September 1986 subscription list of the publication was used. The 'other' category includes readers in countries in Europe outside the 12 Community nations. Fig. 1 (see p. 6) shows the distribution pattern and the response pattern for the first 304 responses.

Regarding the question: "Are you a researcher in industry, or academia, an administrator or other?"

the replies confirmed our expectations by indicating that 71.5% of those responding were from industry and academia involved in cooperative Community research programs to whom the publication is primarily addressed.

In the question: "With which Community financed program are you involved?(i)

our interest was to see what portion of those responding were involved directly with a Community R&D program and especially ESPRIT. The response was that 63% (199 out of 304) were involved in at least ESPRIT while 25% were involved in at least 2 different community

R&D programs. The primary objective of the publication has been to provide information on IES and related subjects to the ESPRIT research community for which IES was originally established. It was important therefore to establish that this publication reaches that primary target population.

An overwhelming majority (96.6%) responded "YES" to the question: "Do you find this publication informative?"

as shown in Fig. 2 (see p. 6). The other three questions regarding editorial format of the publication:

- "Are the articles, in general, too technical/about right/not technical enough?"
- "Is the coverage too wide/just right/too narrow?"
- "Should IES News appear more frequently/less frequently/continue as now?"

were also, as shown in Fig. 3 (see p. 6) indicative that the present readership wishes us not to make many major changes in IES News.

We note, however, that about 16% of the respondents point out that there is a lot more happening within the Community on IT, and that they would wish to be informed about this. Another set of respondents would like to see articles with more technical details.

In response to the latter, we wish to say that we would not hesitate to publish articles with deeper

technical content if they are of great relevance. However, we feel that the mission of a newsletter of this type is to provide more general information with a certain depth appropriate to the majority of the readers. The publication does not wish to be in competition with scientific journals or other similar publications which are available and in which deeper technical articles can be found. On the other hand, it is hoped that through this newsletter, the reader may become aware of new activities in the IT area within Community Programs and, relating to them, follow their progress and then decided if it is worth investigating further.

In terms of variety in its coverage, this publication will soon begin to report on various activities or developments which affect the process of Information Exchange among the European Research and Academic Community. We shall try to report regularly on activities by RARE and developments of the various Community nations. Finally, the publication will remain service oriented and will seek to alert the user population of different IES services or associated developments, possibly being expanded in programs other than ESPRIT and which also have a service component. We hope that in terms of coverage depth those who feel we are limited will find satisfaction in the above.

To allow us to see what proportion of readers subscribe to other means of similar communication besides this newsletter, we asked people if they are involved in the two IES supported electronic mail systems.

The results are given in Fig. 4

The most surprising, on the return of the questionnaire, was the question of subscription fee. Although a majority responded NO to the question:

"Would you be prepared to pay a modest subscription (not more than 30 ECU) for IES News at some future date?"

an unexpectedly high number said they would agree to pay. Specifically out of 275 answers 154 said No and 121 said Yes. This indicates that a good percentage of the readers is willing to share in the expenses of the publication in order to receive timely information on the activities covered in IES News. However, no such charge is foreseen for the near future.

We wish to thank all those who took the time to respond and remind those who didn't that there is always an avenue, through direct mail, for them to express their opinion about the publication, offering suggestions and (we do not mind) any good words.

(i) We apologise for the obvious typographical error which unfortunately was not caught in time. The name RARE which is the recently established organisation (Associated Networks for European Research) was given in place of the Community program on Telecommunication, RACE. A number of people substituted the name themselves.

## QUESTIONNAIRE RETURNS BY COUNTRY

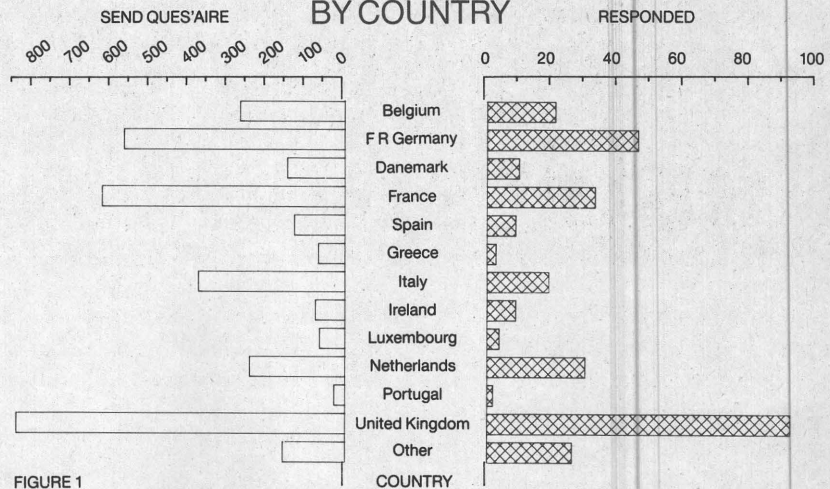


FIGURE 1

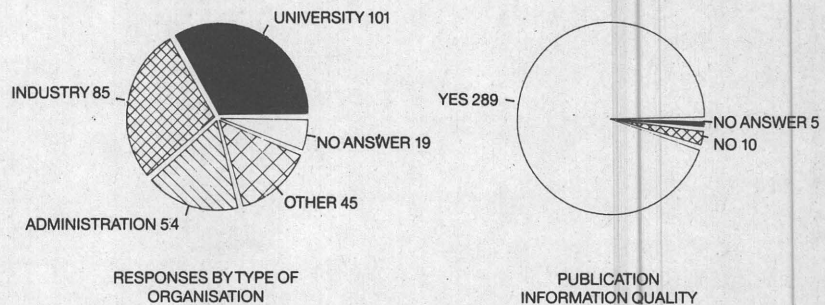


FIGURE 2

## CRITERIA OF EVALUATION

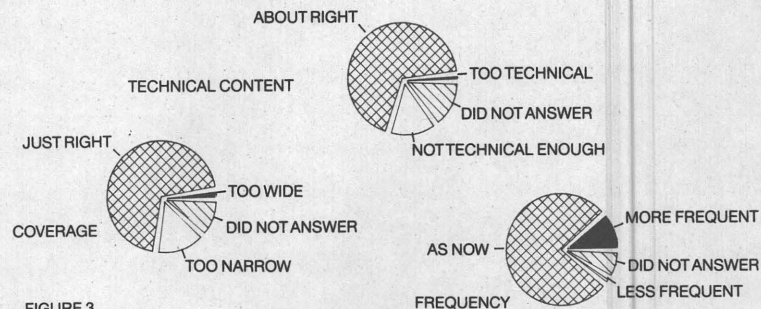


FIGURE 3

## ELECTRONIC MAIL USERS

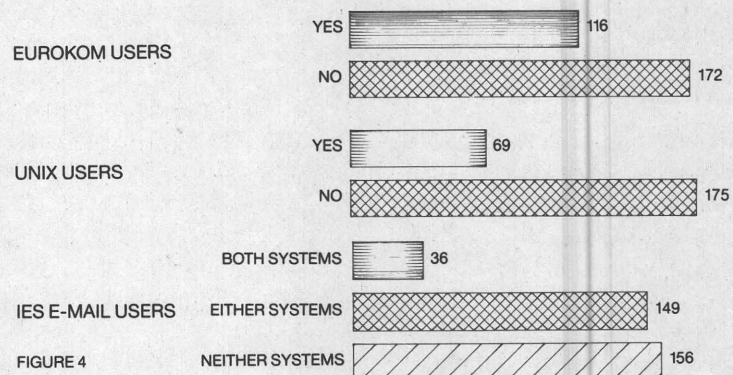


FIGURE 4

# The pilot R & D message handling service

## Organisation and topology

The RARE Working Group on MHS (RARE WG1) is promoting usage of X-400 systems in R&D environments. National R&D-network projects have independently decided to go for X-400-based MHS systems. Very little extra coordination from the WG has made it possible to interconnect 14 European countries, in addition to Canada and Australia, into one pilot "global" MHS service for the R&D community.

The main activities in operating the pilot service are carried out at the national level. Common problem areas are discussed at the RARE WG1 meetings and by using distribution lists in the service itself. The small amount of necessary operational coordination needed to tie the national services together has so far been performed informally by RUNIT, the Computing Centre at the University of Trondheim, Norway. The WG has proposed a RARE MHS Project to handle this for the next two-year period.

Fig. 1 shows the countries and PRMD's (Private Management Domains) participating in the pilot R&D MHS service.

There are gateways available between the Pilot R&D MHS service and the most important existing non-X-400 networks: EARN, BITNET, ARPA, CSNET, the UNIX networks, etc, and there is work going on in order to increase

the number of operational gateways and to make them available to all the users of the pilot service.

National pilot directory services are operational in some countries, and the intention is to build up a useful catalogue service for the users based on distributed data bases. Because of lack of existing standards in the field, the first versions will be ad-hoc solutions with a "message interface", e.g. the user sends a message-request to one of the data bases, and a generated answer will be returned automatically to the user.

The public X-25 network is used for all international traffic, and in most countries, X-25 services are used also for internal traffic.

The X-400 implementations running in the operational service, are based on GIPSI (from INRIA, France) and EAN (from University of British Columbia, Vancouver, Canada). There are approximately 180 operational nodes in Europe running on a variety of computers and operating systems.

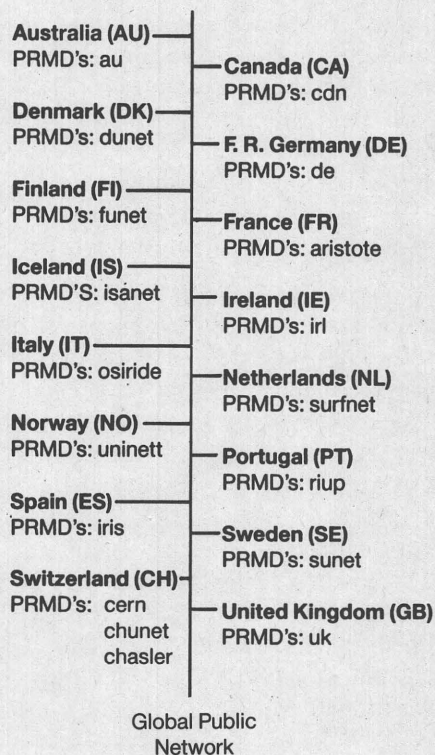
One of the latest (and important) nodes coming into service soon is EuroKom. Within a few weeks users of EuroKom will have use of an R&D MHS node in Ireland, and thereby enjoy an increase in the connectivity between R&D-colleagues throughout Europe.

## Pilot's are education

Indeed, running pilot services are important for the users. However, there are other aspects as well. The

experience gained in RARE WG1 from running the Pilot R&D MHS service will be beneficial for the specification and implementation phase of COSINE (see IES NEWS no 6, p. 4), and thereby contribute to the establishment of the open computer communication infrastructure.

ALF HANSEN  
RUNIT  
CHAIRMAN, RARE WG1



Document: R&D MHS - Countries

Figure 1. Pilot R&D MHS Service. Current countries and PRMD's.

# Migration of the German EARN section to Deutsches Forschungsnetz (DFN)

The DFN-association was founded in 1983/1984. At the same time EARN was set up by IBM together with potential users in several institutions from the academic community. These and IBM also had the aim to establish DFN. For that reason EARN should not be understood as a competitive network. The EARN network is based on an old, but working, technology so that EARN was helpful in bridging the time until DFN-OSI services were available.

As the scientific community is open to all, it needs open communication services based on international standards. That was the reason why IBM and the institutions, which used EARN in the past, stated at the very beginning their intention to migrate from EARN to DFN services as soon as the OSI software would be available for their machines.

A joint committee of the 2 organisations has now presented concrete proposals for the "how" to enable functionally equivalent DFN services to replace those provided by EARN. Studies by the committee found that File Transfer, Remote Job Entry and Message Handling services of DFN (which served for the exchange of data sets, working on remote computers and interchange of messages and text) are functionally equivalent to the corresponding services currently available on EARN.

Migration of these EARN services to DFN will commence in the second half of 1987 as soon as the DFN communications software for VM

and MVS operating systems will be available. DFN software for all other major operating systems except NOS-VE is already available. When the migration has been completed there will thus be only one German research network available to scientists and technologists in Germany.

In its deliberations, the committee naturally paid due attention also to communication costs. These studies showed that the principle adopted by DFN of not operating its own physical network with leased lines was the correct one. However care should be exercised to select the most economical service offered by the German PTT in the light of the volume of data to be transmitted. Thus for high volume traffic, leased lines will continue to be used between certain locations. A remaining problem is the high level of licence fees for IBM basic communication software products which will be required for introducing DFN services to IBM installations.

The costs for a gateway and its operation between DFN and EARN Europe as well as BITNET (USA), the committee recommended, be met through a basic fee with additional usage dependent charges.

In further developments at DFN, independent of the EARN migration, work has proceeded on address changes in the message handling service in the light of implementation of \*EARN. The "DFN" tag has been altered to "DBP.DE" so that there is conformity with terminology of the X-400 standardisation. Here DE

is the country code, which is part of the administrative domain name (DBP). This adjustment, made during February, became necessary since other X-400 mail-systems will become operational in the Deutsche Bundespost (German PTT) and others (manufacturers). This change will also facilitate the distribution of new revised versions of EARN.

Furthermore GMD Birlinghove has started to operate a DFN name server (a type of telephone directory for electronic mail users) for the message service. The mail name of this is: nameserver (AT) gusl.gmd.dbp.de. EARN users can, if they wish, be included in this directory and can also enquire for other user addresses, provided these are registered.

Based on information supplied by DFN. For more detailed information see "DFN Mitteilungen", Heft 7, March 1987, DFN Verein, Pariserstr. 44, D-1000 Berlin 15.

\*EARN is an X-400-like electronic mail messaging system provided by University of British Columbia, Canada



Companies participating in Docdel, the experimental electronic document delivery program sponsored by the CEC have declared their involvement a success after winning a 14.5 million ECU contract for high-technology services in Europe. This is the first major return on the CEC's 3.6 million ECU investment.

Transdoc was one of the CEC's ten electronic publishing experiments which ran from 1984 to 1986, each addressing a different aspect of document capturing, archiving, transmission and retrieval. The original concept and responsibility for Docdel and related projects have been assumed by the Commission's Directorate XIII-B "Information Market", located in Luxembourg.

To present the results of this and other Docdel experiments, Directorate XIII-B will be sponsoring a series of one-day seminars in several European countries in the coming months.

In France, the Transdoc experiment grouped together six organisations which have been testing document digitalisation, optical disc archiving and electronic delivery techniques derived from the Docdel guidelines. When the Transdoc experiment was concluded in 1985, the French companies introduced document-transmission applications based on their work, says a spokesman for the Groupement Transdoc, the project's co-ordinating centre.

Most of the Groupement Transdoc partners are presently developing commercial applications based on their work for Docdel. The French Patent Office (INPI) has established a centre which will assume management of computerised French patent information; the National Electricity Board (EDF) has created an archiving centre to store internal memoranda on optical disc; the National Scientific Documentation Centre (CNRS/CDST) is deve-

loping a centre for high-speed document delivery; and Télésystèmes is marketing the services of its scanning centre for document archiving on optical disc. Other Transdoc members – the Specialised Press Federation (FNPS), National Federation of Libraries (DBMIST), and the National Gas Board (GDF) – are also planning to introduce information services which have grown out of Docdel.

## **Docdel generates positive commercial results:**

## **Commission- sponsored seminars to examine Docdel experiment results**

Télésystèmes is also involved in a three-country project which aims to computerise European patent information, says the spokesman. "Together with the London-based company Microfiche Reprographics and SRZ of Berlin, we created Scaneurop, the first European optical scanning bureau."

As defined by the parent companies, Scaneurop's first task will be to

digitise the holdings of the European Patent Office recorded since 1920 – approximately 65 million pages. By using optical media, an entire patent document – both text and illustrations – can be captured, stored, exchanged and received with speed and flexibility.

These streamlined document search and archiving facilities will greatly benefit organisations whose operation formerly relied on enormous volumes of documentation and paper-based office procedures. Users can now locate and consult information stored on computer disc, tape, or optical disc in a matter of minutes, as opposed to hours using reference books and manual searching.

## **Docdel one-day seminars present project conclusions**

The result of Transdoc and other Docdel electronic publishing projects will be presented in several European locations this spring.

The first three of these will be in Frankfurt (May 11), London (June 8) and Paris (Sept. 15).

A special two-day seminar will also be organised in Rome on September 9-10 under the auspices of ISRDS, the Italian Institute for Research in Scientific Documentation. Plans to organise similar events in Spain and Ireland are also in hand.

Details of the Docdel seminars are available from Pergamon Infotech, Berkshire House, Queen Street, Maidenhead, GB-Berks 8L6 INF (tél: + 44-628-39101), contact Ms Carol Start.

Further information on the Commission's Docdel program can be obtained from Mr. F. Mastroddi, Batiment Jean Monnet, CEC, L-2920 Luxembourg, Kirchberg (Tel: + 352-4301-3020).

The first major international meeting on these new technologies and their applications to be held in Europe, has just finished in Amsterdam (April 14-16). Your editor is still reeling with the mass of data, exhibits and new developments he has encountered. Whole encyclopaedias on a disc equal in size and appearance to the familiar audio-CD, but fully searchable using newly developed memory-resident software, or one-hour of motion video, again searchable frame-by-

Judging by the throngs of eager visitors and full auditoria (with simultaneous sessions) a great success for a well-organised and -presented meeting, and our thanks are due to Learned Information for masterminding this event.

But... there are doubts, not about the technology, but its market and market-penetration. The history of this sector of IT since World War II is studied with forecasts and predictions which were never fulfilled. First

of the end for the printed versions in the view of the apostles of the new age. Georges Anderla, who contributed in no small measure to such success as the online business has today, lamented only last month (March issue of 'Information World Review'), that indications were that with the eight-fold increase in number of data bases during the past ten years, their utilisation has been five times slower than forecast: Anderla estimates that the "worldwide number of users has not even reached the derisory total of 100.000." (This disregards some very active segments, such as the transactional and banking applications, or videotex, such as Minitel, the usage of which far outstrips the online trade in s.t.m. information).

Optical storage media have been hailed as bringing data bases and other information to the customer – is the market evolution going to follow the patterns set by microforms or online? I have no crystal ball and forecasting in this sector is a notoriously hazardous game, but I hope that my fears of a similar development are unfounded. The major advantage to the producer is that the income from his product is up front, and not in arrears and usage dependent.

Such market data as are available do not give rise to euphoric optimism. The players currently engaged in this technology are mostly experienced and successful in the field of information distribution, they cannot all be wrong. On the other hand some projects in this area have been just around the corner for many years, and other experienced players are withdrawing from the field.

What the future will bring is just guess work. What is sure, is that the technology will move ahead inexorably, certainly faster than its market, and that European ingenuity will hopefully play a major role. We can only wish it the success it deserves.

# Optica 87:

## Optical Publishing and Storage

frame, on the little silver disc. No longer is this medium a read-only device, it is slowly becoming a write-once disc and a fully erasable product will not be too long in coming on the market. Prices for players and other equipment required to exploit this information medium and other optical storage devices are also starting to show a healthy downward trend. Most major European publishers have entered the arena or are about to do so. The current state of development, both technical and applicational, is also due to the early help and leadership of DG XIII of the Commission.

there was the microform – film or fiche, which was going to replace the printed page (original or copy) for storage and transmission. The sad truth is that even when information was distributed in this form, it was nearly always reconverted to full size by the end user. With the introduction of computer-output-on-microform, banks and large concerns started distributing information to their branches in this manner, only to find that online access to the data overtook this development. On the other hand, when online access to data bases arrived, this was going to be in the beginning

# An introduction to the role of CECUA

## 1. What is CECUA?

CECUA, the Confederation of European Computer User Associations, is an independent body supported by, but operating independently from the European Commission. Its major aims are:

- to provide a forum for discussion of computing topics of mutual interest to European countries, and to establish a user consensus on such topics.
- to act as a consultative and advisory body to the Commission of European Communities – specifically to the Strategy Division headed by Christopher Wilkinson, which now forms part of DG XIII.
- to disseminate information back to constituent national user groups.

Constitutionally, CECUA is open to all European Community countries, and normally two representatives from each country attend the forum meetings which are held twice yearly.

The membership of CECUA varies from one Community country to another. The U.K. is represented by two officers of the National Computer Users' Forum – the collective U.K. body which links together twenty-four constituent member organisations ranging from the manufacturer-oriented user groups to the three major professional bodies active in computing: the BCS (British

Computer Society), the IDPM (Institute of Data Processing Managers), and the IEE (Institute of Electrical Engineers). Other countries are represented by officials from differing bodies – for example, Denmark is represented by one representative from the Danish government's National Computing Centre and another from the Danish Employers' Federation. Germany has one representative from the leading professional body (the ADI), as also has Portugal.

Greece is represented by an employee of the Greek National Productivity Centre, who is the current Vice-President of CECUA.

The wide range of backgrounds and skills of CECUA members contributes a great deal to its work – and adds to the synergy or collective energy which can be applied by CECUA to any particular issue or problem.

## 2. What CECUA does

CECUA's main role is to act as the user consultative arm of the European Commission. In this capacity it works in two ways as follows:

- in an *active* mode where it identifies matters which need to be considered – which can be purely technical matters, or, more usually matters involving financial / political / legal / technical elements in combination. It may simply raise a particu-

lar issue with the Commission, or it may recommend appropriate policies for consideration by the Commission officials.

- in *response* mode CECUA receives various inputs from the Commission, considers them, and responds verbally during the meetings with the Commission and/or via written submissions as appropriate.

In two specific areas, CECUA working groups have been invited by the Commission to carry out specific work in the form of CEC projects. They are as follows:

- the area of IT contacts, where a CECUA working group headed by Herr Tilo Steinbrink of Germany has considered the various supplier contracts in use within Europe, and with some emphasis on prior work in the U.K. has produced model conditions of contract for the procurement of hardware and basic systems software. This work is shortly to be extended to cover contracts for software products and for hardware maintenance. The results of this group's previous work in the area of hardware contracts has culminated in publication of the CECUA Model Conditions of Contract for Hardware Purchase, which have been harmonised so that they are suitable for use in all European Community countries.

- in the area of standards a great deal has been achieved by the CECUA Working Group on Standards

headed by Mr. Gordon Cunningham of the United Kingdom. The WGS is concentrating especially on the establishment of an open-systems environment. Recent topics addressed include: –

- Selection of International base standards for ENVs
- 'Userview' report on user requirements from IT
- Standardisation of user access codes to IT services
- Functional standards
- Reaching a consensus on user priorities from IT.

The WGS is also lobbying to make good deficiencies in open systems implementations as seen from the user point of view. These currently include conformance certification, software quality and portability, and standard user interfaces and access codes.

CECUA also provides an open forum for exploration of matters of mutual interest. Topics explored during recent meetings have included, but have not been restricted to, the following:

- the need for harmonisation in the implementation of integrated services digital networks, including the physical connectors.
- the need for harmonising value-added network legislation across Europe so that value-added network providers will be able to provide a user service across all Community countries.
- the pricing policies pursued by two or three significant vendors – which in some European countries are at variance with inflation and the reasons for this were explored.
- the possibility of accrediting a Trans-European Approval Certificate which would effectively provide an approval for certain tested and innovative products.

In the area of technology transfer back to its constituent bodies, CE-

CUA works in differing ways, some of which are as follows

– outputs from CECUA work often form the basis of national seminars – for example a seminar based on an exposition of the CECUA Model Conditions of Contract for Hardware Purchase held in Greece recently attracted more than 250 participants.

– elsewhere, topics and issues explored within CECUA are fed back to end users by the national bodies in differing ways – for example by issuing press releases on all matters of outstanding importance for publication by the national computer press, and additionally disseminating more detailed articles and features to its constituent user associations for inclusion in their house journals. Similar and differing technology transfer channels are used within each Community country.

Elsewhere, in association with the CEC officials participating in its work, CECUA contributes to other trans-European initiatives. CECUA representatives took part in the recent series of workshops aimed at seeking views on the proposed ESPRIT II Work Program. CECUA is also actively interested in the results of ESPRIT I Work Program, and in other newer initiatives such as the RACE telecommunications program, the COMETT education program, and the DELTA educational technology program.

Now that IT is emerging from standards for the manufacturer to standards for the user, the user voice is even more important. Technology and its products are recognised as the tools. CECUA members are determined to use them well through education, standardisation of common procedures, and by procurement. CECUA represents the greatest procurement power in Europe.

Dr. F.E. TAYLOR  
PRESIDENT, CECUA

# HELP

## Needed Urgently

Abstract Syntax Notation One or ASN. is a CCITT X-409 standard designed to be a neutral data format for MHS (Message Handling Services) directories, and is important to the work of RARE Working Group III. ASN.1 requires a compiler to create the format from raw data.

Any person who is aware of the existence of such a compiler or organisations who have been involved with related developments is kindly requested to provide such information to

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We have repeatedly announced that IES NEWS is **your** newsletter and that we look forward to hearing your views, suggestions and gripes. To stimulate your writing urge, we are offering three surprises to be collected at the IES Stand during the Technical Week for the best and most stimulating letters or contributions (unsolicited). We want to know of your experiences and thoughts on such subjects as ISDN, standardisation, transborder data flow, privacy, public versus private lines, new research directions, to mention but a few topics.

The Editor

# TEDIS – Trade Electronic Data Interchange Systems

Commercial operations today, whether national or international, involve numerous exchanges of trade data or information between business partners. The volume of data exchanged in this way is vast, firstly because the data are transferred to separate documents at each stage and for each operation in a commercial transaction from the request for a quotation up to invoicing and payment, and secondly because there are so many different business partners: manufacturers, suppliers, customers, insurers, bankers, carriers, forwarding agents, etc.

The operations involved in the processing and transmission of trade information are often far more time-consuming than the manufacture or delivery of the goods (or provision of services). This applies in particular whenever a business transaction involves operators or partners in different countries, even if those countries are members of the Community.

The ability to process and exchange trade data as quickly as possible allows stocks to be reduced, helps to cut financial costs and gives companies an additional competitive edge by improving the service offered to their customers: flexibility, speed and a greater ability to respond to their changing needs and desires.

One way of achieving these aims is to use EDI or Electronic Data Interchange. The advantages of trade electronic data interchange include:

- Abolition of data re-encoding thereby cutting down on paperwork and reducing administrative tasks;
- Improvement of customer service, mainly through faster processing of orders, more accurate order chasing and better and faster information for customers;
- Better stock management because trade electronic data interchange allows more accurate prediction, shorter delivery periods and reduction of buffer stocks;
- Acceleration of the sale/invoice/payment cycle since trade electronic data interchange cuts out postal delays.

Already in the USA, an EDI system between a few large supermarkets and some of the major suppliers has saved the parties involved an estimated \$ 300 million in one year.

In recent years a few private efforts to establish EDI have been made in Europe. While these spontaneous ventures have been useful, it is clear that duplication is frequent and costly, the approaches and solutions found for similar problems differ widely and sometimes lead to conflicting national or international positions on the general approach and on the solving of problems common to all EDI systems.

Ease of circulation of information between the Member States and the business world is an essential condition for the movement of goods and services within the Community and thus for the completion of the internal market by 1992. The circulation of information between business partners calls for the adoption of common standards and protocols and the harmonising of charging policies.

The Community is the right place to tackle the joint legal and technical problems because of the consistency, synergy and economies of scale it can offer. This is particularly true in the context of the increase in cross-frontier commercial transactions and the completion of the internal market.

The Community coordination urgently desired by current or potential users of trade electronic data interchange is necessary in order to:

- Avoid the emergence of a number of incompatible national approaches
- restrict the implementation of hermetic systems that cannot communicate with each other,
- prevent or limit the danger of the European IT market becoming fragmented as a result of the diversity of the systems and approaches adopted,
- help to promote market unity and the achievement of the necessary economies of scale.

The Community has already taken measure which have established the basis for the setting up of EDI systems between business users. These can be divided into two groups:

1. Activities and initiatives of a general nature which include work on Community standardisation policy, on telecommunications, on data security and on the development of the specialised information market.
2. Specific pilot projects for EDI between certain categories of users including the INSIS program, the CADDIA program for exchange of data relevant to customs, agriculture and statistics, the Mercator project designed to test the UN guidelines for trade data interchange in a European operational environment, the European ODETTE group which deals

# TEDIS – Trade Electronic Data Interchange Systems

with data exchange between car manufacturers and the COST 306 project concerning automatic transfer of transport data.

These activities have shown that the main obstacles to the setting up of operational trade electronic data interchange systems lie in problems of a transverse nature, e.g. lack of standardisation and the unsuitability of the conventional telephone system. In order to solve these problems, these activities have to be expanded and adapted to the needs of the business world for EDI. The objectives are:

- to put a stop to the proliferation of hermetic EDI systems and the widespread incompatibility that would result;
- to promote the design and installation of trade electronic data interchange systems meeting requirements of users, especially of small businesses.
- to stimulate the European telecommunications and IT equipment and services industry so that it can meet user demand;
- to support the common use of international and European standards where they exist and in particular the recommendations

of the UN/ECE in the field of International Trade Procedures.

To attain these objectives it is necessary:

- to make use of the results obtained in earlier or current activities
- to establish close consultations with the capital goods industry and the user industries or services
- to ensure constant interaction between horizontal and vertical activities.

The horizontal activities are as follows:

- coordination at Community level of the work going on in the Member States on the development of EDI systems;
- alerting potential users, in particular by preparation and dissemination of general information, organisation of seminars, and preparation and dissemination of the technical documentation needed for the setting up of trade EDI systems;
- alerting European hardware and software manufacturers to the opportunities offered by the development of EDI systems and the problems that have to be overcome;
- logistic support for European sectoral groups to facilitate the preparation and launching of trade EDI systems;
- preparatory work on standardisation and telecommunications;
- study of security requirements to guarantee message confidentiality;
- examination of the possible use of the results obtained under existing machine translation programs;
- study of advisability of promoting the development of specialised software;
- assistance in setting up conformance testing centres and
- consideration of legal aspects.

The vertical activities include:

- the drawing up of a list of existing

- or sectoral projects on trade EDI
- identification of specific requirements of trade EDI systems
- study of possible assistance for small businesses
- consideration of possible support for pilot projects.

The above activities will be carried out under the preparatory phase of the TEDIS program. A proposal for this preparatory phase was recently sent to the Council for approval (Document No. COM. (86) 662 Final). The preparatory phase will last two years and will have a proposed budget of 6 million ECU. The preparatory phase will be followed by a pilot project phase. The duration and funding of this pilot project phase still have to be decided upon.

E. PEETERS  
CEC DG XIII  
BRUSSELS

P.S. (Based on views of H.M. CUSTOMS and Exise)

It is only natural, that whilst all major future participants in TEDIS welcome the Commission initiative and the savings EDI will bring, there are some concerns, especially on legal issues.

Thus for example:

The UK Customs administration is considering the legal implications of the development of its computer systems through the various stages of development, namely:

(a) the current system whereby UK importers and/or their agents can make customs declarations directly on the Customs computer system but are required to submit supporting documentation;

(b) the medium term system in which UK importers and/or their agents can make customs declarations on to the Customs computer but *without* a requirement to submit supporting documentation, i.e. a paperless entry system; and

# TEDIS – Trade Electronic Data Interchange Systems

(c) a longer term system in which the Commission and other Member States might have direct access and also traders within other Member States for the purposes of making customs declarations without supporting documentation.

The legal issues so far identified arising from the concept of paperless entries relate to:

(a) The delivery of legally acceptable documentation to the customs administration by means of electronic data transmission within the meaning of current UK legislation.

(b) The admissibility as evidence of computer readable data in both civil and criminal proceedings.

(c) Customs powers of access to traders records including computer files (i) in the UK, (ii) in other Member States or (iii) a third country.

(d) Customs control procedures, eg. requirement for Direct Trader Input traders to retain duplicate records of entered data, powers of access to documents and to the data base from which the information contained therein is derived.

(e) Security aspects, eg. Data Protection including confidentially and physical security.

(f) Need for changes in UK and Community legislation.

It is apparent that to ensure conformity within the Community, the Commission will need to seek legislation converging:

- (1) *The Data Protection Act.*
- (2) Powers of access to importers' records within the Community.
- (3) Uniform requirements to record-keeping and production.
- (4) International agreements to gain access to third countries.

## Two Special Dates for your Diaries

The European Camac Association is holding a Symposium on Standards and Interfaces in Personal Computing at the Flemish Free University in Brussels on May 21 and 22. The meeting, which is sponsored and supported by the Commission, has as its aim the promotion of a discussion and awareness of standards and common practices in the field of personal computers and personal workstations within the European

environment. An attempt will be made to focus on the expensive personal computer and the low-cost personal workstation. Further details can be obtained from the Secretariat, Frau Helene Pilwat, KFA Jülich, Tel: 02461 61 6521.

The dates for the Technical Week have also been announced by the Commission: this will start on Monday, September 28, in Brussels.

## New newsletter: IT STANDARD NEWS gives latest news on CEN/CENELEC/CEPT standardisation

Just out now is the trial issue of **IT Standards News**, a newsletter intended for those who are interested in European standardisation in the information technology field. The newsletter will be published four times a year and will contain news on the latest development of the standardisation projects undertaken by CEN/CENELEC in cooperation with CEPT. It will not – or at least only seldom – go into technical detail: the technically advanced readers will anyway look elsewhere for that material. Neither will it explain the basic workings of the CEN/CENELEC/CEPT standardisation: the readers are expected to be familiar with that.

What you **will** find in the **IT Standards News** are mainly brief notes on new projects, new working groups and committees, meetings held recently and with what results, European standards published, drafts and proposals out for balloting, a meeting calendar, and topical thematic overviews. (Plus an open mind for suggestion.)

**IT Standards News** is published on behalf of CEN/CENELEC and CEPT by the Electro-Technical Council of Ireland, P.O. Box 33, Blackrock, County Dublin, Republic of Ireland. Write to them for a copy of the trial issue.

Figures are strange things and lend themselves to a wide variety of interpretations. Take for example the average daily (week-day) traffic data for October 1986 of JANET, published in "Network News" - 1.054 Mbytes sent and received. What does this really imply? One byte, that is one keyboard stroke (unless it is computer-generated, but let us assume that it is the former). One full A4 page of typescript is about 3.000 characters or keyboard strokes. So our 1.054 Mbytes represents 350.000 pages of A4 typescript. An average typist takes about 15 minutes for one page, and most computer keyboard operators probably work at that rate. The daily output of one typist can be estimated therefore at 35-40 pages - lets take 35 for ease of calculation. We arrive therefore at 10.000 keyboard operators who keep JANET fed (Are we still talking about the "chip" destroying workplaces?). I know - most of the traffic is machine-generated or travels along the network more than once, but even so it is a nice dream, this figure of 10.000.

#### FUTURE EVENTS

KOMM-TECH 87 (CAD-CAM-CIM).  
Online GmbH.  
Essen, May 12-15, 1987.

Eight Symposium on Computer  
Arithmetic. I.E.E.E. and I.F.I.P.  
Como, May 19 - 21, 1987.

Computer Integrated Manufacturing  
ESPRIT. CEC.  
Tatton Hall, U.K.,  
May 19 - May 20, 1987.

Managing Telemarketing Operations.  
A.M.A.  
Brussels, May 20 - 22, 1987.

Technology and Experience:  
Expert Systems. Learned Information,  
London, June 2 - 4, 1987.

Advanced Data and Knowledge  
Base Systems.  
CRAI, Capri, June 8 - 12, 1987.

International ISDN Conference.  
Online, London, June 16 - 18, 1987.  
Networks 1987.  
Online, London, June 16 - 18, 1987.

### Editor's Corner

There is another way of looking at the figure of 1.054 Mbytes. Assume that everything is printed out at least once - 350.000 pages of computer printout. The normal box of paper holds 2.000 pages and is 15 cm high. The daily consumption is therefore 175 boxes, which when stacked in one column would have a height of 26.25 meters, giving a monthly column of 525 meters. For comparison, London's Nelson column is only 44 meters and St. Paul's is 111 meters. Have we really started to move towards the paperless society?

Finally, we can convert this into the wood required to produce this quantity of paper. It takes about 3 tons of fresh wood to make one ton of paper, and the average tree used for this purpose yields about one ton of wood. Our 175 boxes of paper weigh close to 2 tons, so that six trees had to be cut down to be converted into the daily paper consumption. In the course of one year this means that for the 250 working days 1.500 trees are needed - with an average of 4 sq. meters of forest per tree, an area of 6.000 sq. meters of woodland, that is more than Berkeley Square in London or an average size football pitch. Maybe investing in woodland or paper-makers shares might be a safer bet than Silicon Valley.

#### FUTURE EVENTS

Applications of Supercomputers  
in Engineering. Computational  
Mechanics Inst., Aachen,  
July 19 - 21, 1987.

Computational Mechanics.  
Computation Mechanics Inst.,  
Cambridge, U.S., August 4 - 7, 1987.

Very Large Data Bases.  
Brit. Computer Society, Brighton,  
September 1 - 4, 1987.

Software Engineering. AFCET, AICA,  
BCS and GI, Strasburg, September  
8 - 11, 1987.

Software Engineering for Real Time  
Systems. Instn. of Electronic and  
Radio Engineers, Cirencester,  
September 28 - 30, 1987.

Training for Change: the Revolution  
in Commerce and Industry.  
I.E.E., London, December 1 - 2, 1987.