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Esprit
Information Exchange System

iesnews

Issue No 10, June 1987

Publication of the Commission's long-awaited Green Book on Telecommunications occured on June 11th, as this issue was passing through press. In view of the great interest, we consider it our duty to bring at least an outline of the most important points.

In 1985, the world earnings from telecommunication services were 300 thousand million ECUs, of which 62,5% were the income of public and private telecommunication administrations in the Community. The market for telecommunications equipment reached 90 thousand million ECUs in 1986, of which 17,5 thousand million ECUs were accounted for by the Community. An important factor is that whilst the US and Japan accounted for 35 and 17%, respectively, of the world telecommunication market, no single Member State had a share greater than 6%. Analysis of the available data clearly shows, that the Community has not yet reached its potential in this

The Telecommunications Green Book

area; thus the per capita expenditure on telecommunications equipment during the first half of the nineteeneighties was $ 32 compared with $ 80 in the US and $ 46 in Japan.

In the light of the measures introduced in the US and Japan to promote and further telecommunications in all its aspects, the Commission wishes to initiate discussion in this area which will extend and include not only governments, but also the European Parliament, the Economic and Social Councils, public and private telecommunication administrations, the data-handling industries, the service sector, users and trade unions.

The following are some of the major proposals:

- the phased complete opening of the market for terminal equipment to competition;
- the extensive opening of the market for telecommunication services to competition with the exception of a limited number of basic services which must be regarded as essential for safeguarding public service goals;

LATE NEWS

Telecommunications Study Commissioned

The likely technological and regulatory development in European-telecommunications over the next 5 years forms the subject of a study to be carried out by Cullen International, Belgium, on behalf of EUSIDIC. The aim is to see whether the limitless promise held out by telecommunication technology will be realised.

Travellers Access Problems Solved?

A Lausanne Company (Comco - Comp. de Communication S.A.) has developed and marketed a portable modem plus smartcard which currently stores seven national NUIs (including German, French, Swiss and Dutch ones) to allow travellers to access their mailboxes and other hosts through local nodes rather than dialling up home nodes. This should give users both greater freedom and substantial telecommunication cost savings.

Eurocontact on EuroKom

The Eurocontact data base is now available on EuroKom. Passwords have been issued to those who have completed the Eurocontact Data Entry Form. These can be obtained from the IES Help-Line (Tel. +352-45-30-30).

THIS ISSUE

Two major articles may require setting into context. Whilst at present no specific project on videophony is supported by the Commission, work under the Intergovernmental Videoproject with the Member States and the various PTTs will ultimately also cover this aspect of telecommunications.

As regards the work on Manufacturing Applications, this shows how techniques and protocols developed for "conventional" information exchange have been applied to "distributed" workshop practices. The effort of installing computer-aided manufacture at one location can now be utilised at other sites directly, a step which should make joint industrial projects more eocnomical. It is interesting to note that this project earned special praise from Mr. J.M. Cadiou, Director of ESPRIT, at the recent Annual CIM Europe Conference at Tatton Hall.

LATE NEWS

Strange Acronyms

The latest found is VERDICT – the Verification of Electronically Reproduced Documents in Court – a project initiated by the (U.K.) Central Computer and Telecommunications Agency.

- the right to offer transborder services within the Community;
- The retention of exclusive or special rights for providing and operating the network infrastructure of telecommunication administrations (public and private operators), as well as recognition of the central role of telecommunication administrations (public and private operators) in establishing future generations of network infrastructures;
- the clear separation of regulatory and operational functions of telecommunication administrations;
- the opening of the market for satellite aerial systems (ground station), in as much as these can be considered as end-user equipment rather than part of the infrastructure;
- the recognition of the fact that user charges should follow the development of costs;
- the promotion of a consensus between the social partners to facilitate the changes involved and to assist in the optimal exploitation of network developments and services in the creation of new jobs;
- the full application of telecommunications to improve ties and contribute to the economic development of the peripheral regions of the Community;
- the establishment of common positions of the Community in various international negotiations (GATT, ITU, etc.);
- finally, in the field of technical standardisation, the Commission supports the establishment of an European Institute of Telecommunication Standards. A small permanent team – with the participation of experts from public and private network operators as well as from industry – would allow of a considerable speeding up of the elaboration of standards and technical specifications which are essential for the opening up and development of the European telematics market and services.

European Space Agency (ESA) as network operator?

An analysis of requirements for exchange, access to and storage of data from past and future space missions performed on behalf on ESA has shown the need of a digital communications network, this solution being preferred to a single archive centre for data because of the greater flexibility and utility to the scientists involved. It is expected that implementation will take place over five years with management and coordination becoming the responsibility of ESA's research centre at Frascati (ESRIN). The network will make use of existing facilities at the ESA Operations Centre (ESOC) at Darmstadt.

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Council Reaches Consensus on PAN-European Mobile Phone System

The Council of the European Communities (Internal Market) has reached a consensus, which still has to be agreed by one delegation, on a recommendation and a directive which aim at facilitating the transition to a harmonised mobile telephone system in the Community.

The recommendation contains on one hand a calendar for the coordinated and progressive introduction of the new services into the Member States, and on the other hand common functional specifications.

The directive aims at the freeing in each of the member states of certain frequency bands so that they may be reserved for exclusive use by the new European System. This freeing of the bands will take place progressively over the next few years and it is foreseen that by 1991 two bands, each ten MHz wide (905-914 MHz and 950-959 MHz) will be allocated to the new service and that these bands will be widened to 25 MHz each (890-915 and 935-960 MHz) by 2001.

Mr. Karl-Heinz Narjes, Vice President of the Commission of the European Communities, has welcomed the decision and the speed with which it was reached. The original proposals had been made in February.

COMMUNICATIONS NETWORK FOR MANUFACTURING APPLICATIONS (CNMA)

Manufacturing Message Service (MMS)

The members of the ESPRIT project consortium (Figure 1) include five user companies, British Aerospace who act as the prime contractor and provide the project manager, BMW, Aeritalia, Peugeot and ELF. The vendor companies comprise Bull from France, GEC, Nixdorf, Olivetti, Siemens and ICL. Additionally there is TITN from France who are a systems enineering company, and the project's main subcontractor, the Fraunhofer IITB Institute, based in West Germany. Figure 2 shows the CNMA relationship with other organisations.

The application layer protocol for manufacturing (MMS) has been specified, implemented and validated by CNMA.

The first public demonstration of a protocol around which MAP (Manufacturing Automation Protocol) V3.0 will be based, was given at the 1987 Hanover Fair.

The following provides a summary of MMS and the use of it by CNMA.

The phase 1 CNMA Implementation Guide describes a 7 layer OSI protocol stack for use in the Industrial Environment. MAP V 2.1 is a protocol stack that is also intended for use in industrial environments and is based on ISO protocols according to the Open Systems Interconnection Basic Reference Model (OSI/RM). However, in the MAP V 2.1 profile international standards are not used for the protocols in the upper two layers of the OSI/RM; the reason for this is that such standards were not available at the time MAP V 2.1 was defined and an iterim, "proprietary", solution was specified called MMFS or "Memphis". During 1987 MAP is planning to migrate to version 3 which will, amongst other things, replace the "proprietary" upper layers with standard protocols. These upper layer protocols are not currently at international standard status.

An objective of CNMA is to work in advance of the formal MAP V3.0 work to encourage the development and acceptance of the relevant standards and contribute to the specification of MAP V3.0.

The following diagram illustrate the protocols specified in the CNMA Implementation Guide.

MMS – ISO DP 9506
FTAM – ISO DIS 8571
CASE – ISO DIS 8649, 8650

Presentation
– ISO DIS 8822, 8823 (kernel)

Session – ISO IS 8326, 8327 (Full duplex, kernel)

Transport
– ISO IS 8072, 8073 (class IV)

Network – ISO IS 8473

Logical Link Control – ISO DIS 8802/2 (class I, type I)

Medium Access Control + Physical

ISO DIS 8802/3 (10 base 5)
ISO DIS 8802/4 (10 Mbps broadband)
ISO DIS 8802/4 (5 Mbps carrierband)

The profile was selected to minimise the complexity of the implementations whilst maintaining the functionality required by real applications and retaining an OSI architecture. It has to be remembered that some implementations would be required to be provided on devices having limited bulk store, run-time memory and processing power e.g. numerical controllers and programmable logic controllers.

Options for implementation are provided at the top and bottom of the profile. These are the aspects which are of concern and apparent to users: What services do I get? What networks can I use?

CNMA currently uses Local Area Networks (LANs) as the means to link devices. Three types of LAN are allowed:

1) Carrier Sense Multiple Access with Collision Detection (CSMA/CD), operating at 10 Mbps with 500m cable segments.
2) Token-bus, operating at 10 Mbps modulated onto a carrier-band cable system.
3) Tokes-bus, operating at 5 Mbps modulated onto a carrier-band system.

Providing a range of networks in the profile, allows devices to be specified to use the network which most suits the user's implementation requirements. The requirements will include consideration of: the topology which has to be constructed; whether services have to share the same cable; the geographic area to be spanned; the installed base; cost and preferences, environment, etc.

In any application, CNMA allows any of its selected LANs to be combined to form a single logical network. This means that a device on one LAN can communicate with a device on any other LAN. Individual LANs are combined using

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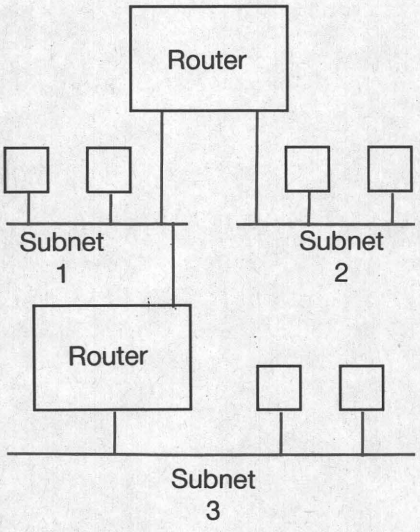
devices known as "network level relays" or routers. In this environment, the individual LANs are referred to as subnetworks and the "logical" networks as simply the network.

Routers have two, or more, ports, one on each subnet, and protocols up to layer 3. The layer 3 protocol is responsible for receiving data on one subnet, deciding if the data are needed on another and transmitting them to that subnet if necessary. The following diagram illustrates a possible network structure.



At layer 7 of the OSI/RM CNMA offers a choice of two application protocols: FTAM and MMS.

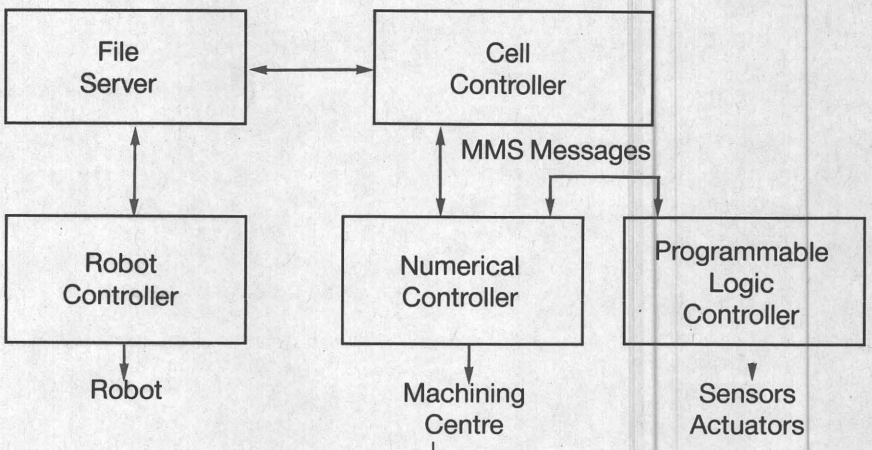
FTAM (File Transfer Access and Management) is a file transfer protocol suitable for manipulating files between computers.

MMS (Manufacturing Message Service) is a protocol for passing messages between programmable devices (such as numerical controllers or programmable logic controllers) and between programmable devices and computers. The purpose of this communication is to monitor and control the operation of the programmable devices and hence the manufacturing process.

It does not define a method for remotely generating the applications (remote programming). Features such as these may be added in future releases or defined in other protocols.

MMS defines:

1) the operations that can be performed on the models and the messages that need to be exchanged between systems to action the operations. E.g. for the operation "Read a Variable" two messages are required, one from system A to system B to request the value of the variable and the second for B to issue to A to enable it to respond with the actual variable value.
2) a protocol to control the transfer of messages between systems.
3) a notation for the abstract syntax of the protocol control information and messages that are exchanged between systems.



MMS assumes particular models of real world objects. For example there are models for: variables, files, events, semaphores and jobs. Each model can then be described by: a set of attributes; a set of operations which may be performed on the model; a collection of states the model may assume and the rules for moving between states.

Consider the simple model of a variable. Its attributes include: a name for the variable, its address, its data type, a security/protection parameter and its value. The operations which may be performed on the variable include operations to define a new variable, read the value and write to the value.

For the abstract syntax descriptions MMS makes use of the ISO document DIS 8824 – Specification of Abstract Syntax Notation one (ASN-1) for the description technique. Note that the presentation layer is responsible for converting this abstract syntax into a concrete syntax (byte encoding) for transmission.

MMS defines a peer to peer control, that is in any exchange of messages only two systems are involved and each have similar priority. The protocol is connection oriented, that is a logical association has to be established between the two systems before operations can be performed on objects. The protocol is respon-

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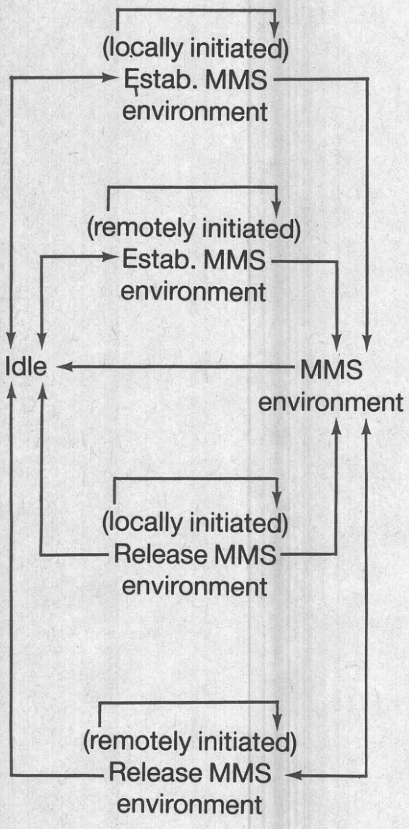
sible for establishing, maintaining and releasing the association and for controlling the exchange of messages between the systems. The following diagram illustrates the MMS protocol state-table:



A wide range of operations and supporting messages is defined in MMS. Simple operations include reading and writing to variables whereas complex operations include defining event conditions in remote systems. Not all systems will need to use all of the operations, hence subsets have got to be defined which are useful and can be implemented.

The operations and messages do not define how "real-world" functions are achieved, e.g. how a robot arm is raised. This is intentional: MMS is a generic standard equally applicable to robot, machine tool and process controllers etc. It does not define any device or application specific material.

A separate set of standards, called companion standards, is needed urgently to supplement MMS and "tune" it to specific devices. The companion standards would define: the meaning to be attached to data; how MMS messages should be used to achieve the real-world functions and relevant subsets of MMS to be supported by particular types of device. Companion standards will be defined for: robot controllers, numerical controllers, process controllers, programmable logic controllers, cell controllers etc. However, companion standards do not yet exist.

Part of the function of the CNMA Implementation Guide is to act as a companion standard for the devices to be used in the project pilots. MMS subsets and the way to use them, have been defined for NC's (numerical controllers), PLC's and computers to support the manufacturing processes. The functionality provided allows: application programs in controllers to be loaded and reached for execution; the running and halting of such programs to be controlled and monitored; and for data variables to be read or written to.

An interesting requirement for the CNMA applications is the ability to down-load piece part-programs to numerical controllers. The part-program could have been generated by a CAE or CAD/CAM system and exist as a file on one of the computers. Such programs can vary in size from a few kilo-bytes to several Mega-bytes. These programs have to be loaded into the NC and executed. Different NC's have differing memory sizes and so need to handle programs in a way to suit their capabilities. For example, an NC with a large memory executing small programs could have the program completely memory resident and when loaded, begin to execute the program. An alternative would be for the same NC to have to execute a very large program, which could not be completely memory resident. In this situation the program has to be loaded into memory whilst it is being executed and is referred to as dynamic down-loading. This second method of operation is similar to trying to fill a bath with the plug removed: many litres of water can be poured in but (with care) the bath never overflows.

MMS provides three methods for loading programs into a controller from host computers:

1) If the program must be completely memory resident before it can be executed, MMS provides three operations: initiate down-load sequence, transmit down-load segment and terminate down-load sequence. These operations are issued by the host, which holds the program, to the controller. The first operation puts the controller in a state to receive the program, the second transfers the program and the third puts the controller in a state where it can be commanded to start execution.

2) If the program has to be dynamically down-loaded, three MMS

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operations are provided: set incremental execute mode, incremental execute and set program mode. Again these operations are issued by the host, which holds the program, to the controller. The first operation puts the controller in a state where it will immediately execute any program segment it receives, the second transfers a program segment (this segment is then executed and the operation repeated until the whole program has been executed) and the third takes the controller out of the dynamic down-load state.

CNMA Relationship with other Organisations

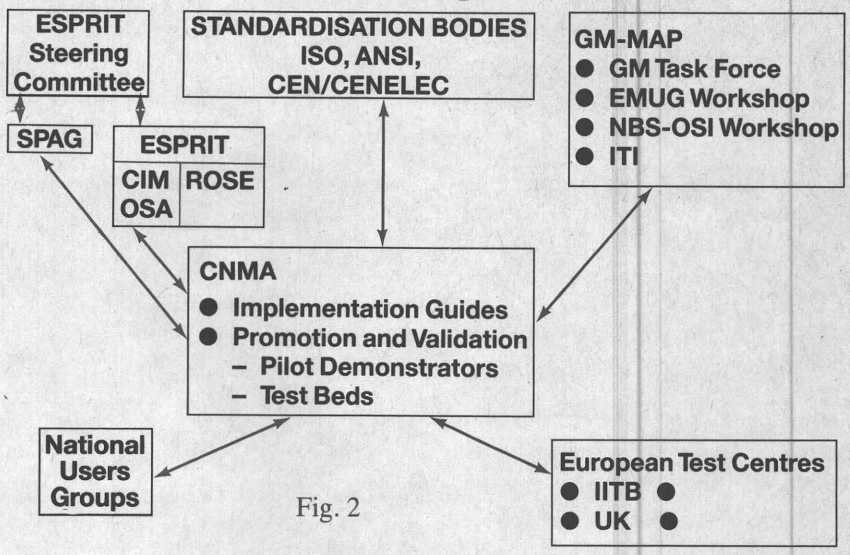

Fig. 2

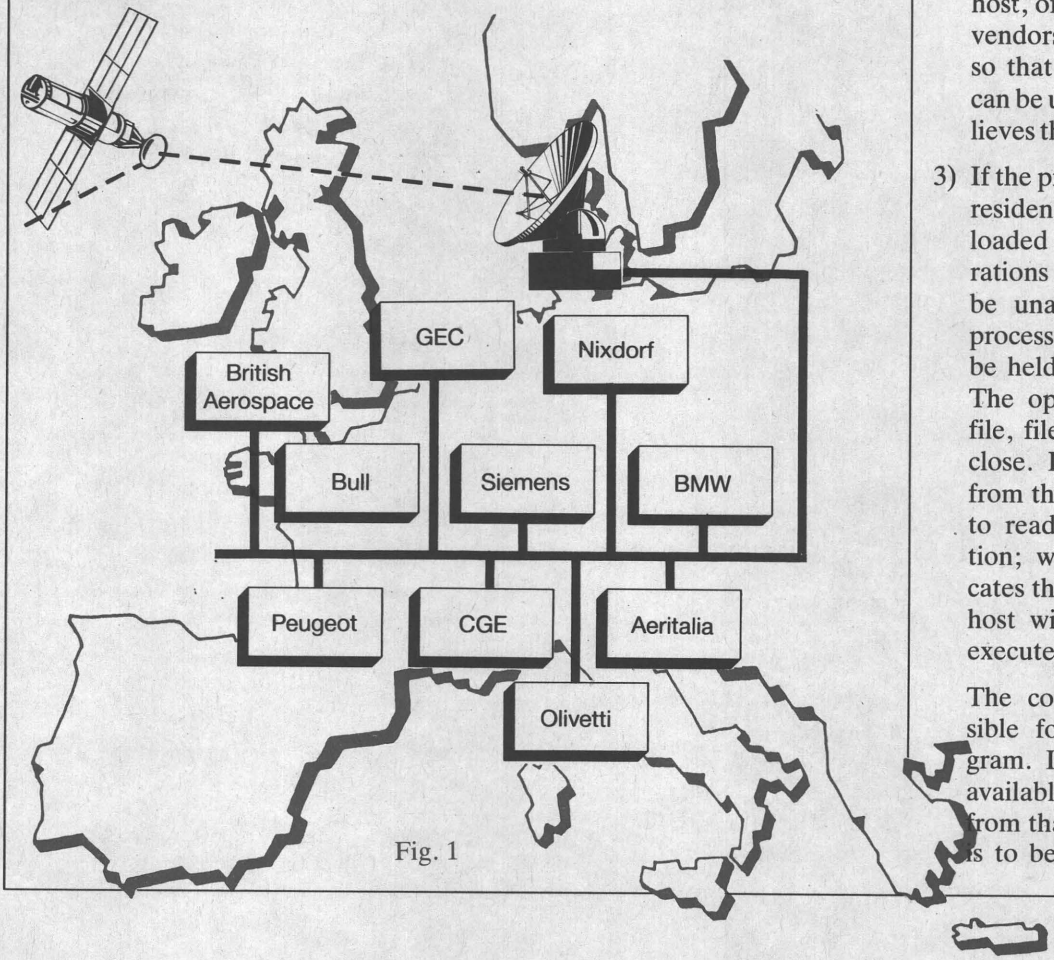

Fig. 1

The previous two methods of using MMS require the host computer to be in control of the down-load procedure and contain the program. Hence, some knowledge is required, by the host, of the characteristics of the vendors controller and program so that the appropriate method can be used. The third method relieves the host of these concerns.

3) If the program has to be memory resident or dynamically down-loaded there is a set of four operations which allows the host to be unaware of the down-load process and for the program to be held on any other computer. The operations are: load from file, file open, file read and file close. Load from file is issued from the host to instruct the NC to ready a program for execution; when the controller indicates that this has been done the host will command the NC to execute the program.

The controller is then responsible for loading its own program. If the program is locally available, then it will be loaded from that source. If the program is to be fetched from a remote

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machine the controller issues a file open to the machine, to access the file holding the program, followed by a number of file reads, to fetch the program, finishing with a file close to close the file, after the program has been accessed.

The load from file operation runs in parallel with the file reading. If the complete program is to be memory resident, the controller only indicates completion of the load from file after the file close has been issued. If the program has to be dynamically down-loaded, the controller indicates completion of the load from file operation when it has read sufficient of the program into memory for execution to start; reading the rest of the program then continues as the program is executed.

The last method is the technique preferred and used, by CNMA because the host is independent of the controller characteristics, program characteristics and program location.

Figure 3 shows the control architecture demonstrated at Hannover.

BASED ON INFORMATION SUPPLIED BY BRIT. AEROSPACE ON BEHALF OF THE PROJECT CONSORTIUM

CNMA Hanover Cell Control Architecture

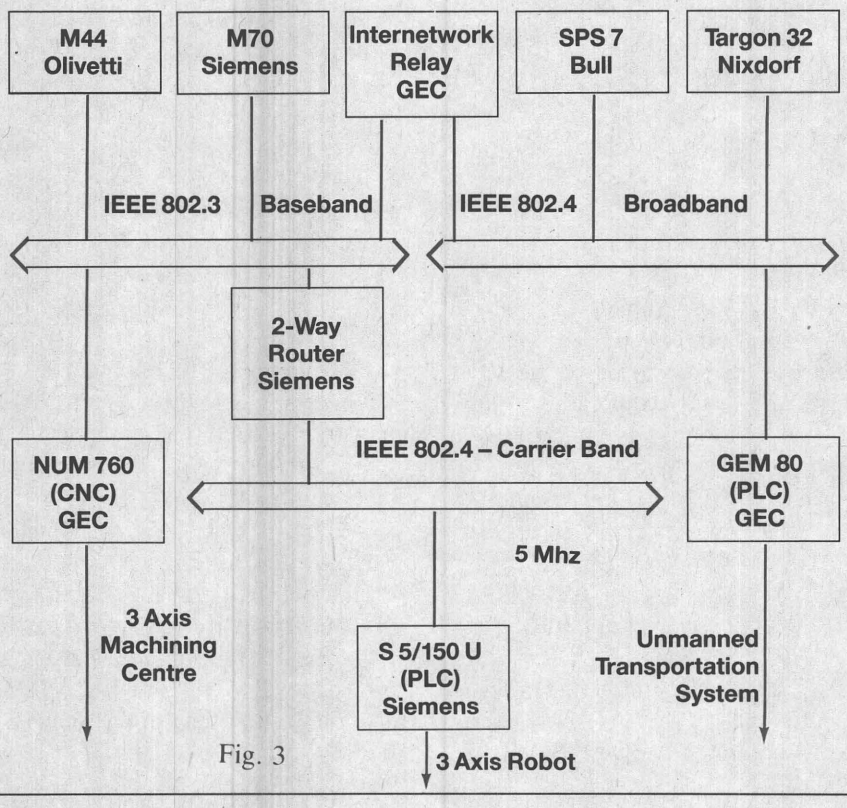

Fig. 3

Book Review

X-25 Explained: Protocols for Packet Switching Networks.
Dessington, R.J.
Chichester: Ellis Horwood Ltd, 1986, 131 pp.

The appearance of a second edition of this valuable book only eighteen months after the first is an indication of the rapid changes and progress made in the field of telecommunication standards.

In the first edition the author introduced the ISO seven layer model for Open System Interconnection in general and specifically covered the four lower layers which can be considered to provide the communications subsystem, with the upper three being increasingly oriented towards applications.

The major changes in the new edition comprise firstly the addition of the revised version of X-25 produced in 1984 by CCITT which incorporates some extensions required for support of the OSI network layer. The other change is the network layer service definition which provides the formal method by which the transport layer accesses the facilities provided by X-25 at the network layer. In describing the lower four layers, the author stresses that these are not yet fully defined, the missing parts being those which deal with the complete definition of the operations and services provided by a "connectionless" class of services or the convergence protocols required to run a connection oriented transport protocol over such a network.

The small volume is a mine of usefull information, well-presented and documented. For those involved with X-25 and related aspects the price of £ 16,50 should prove well worthwile.

EUROPEAN ELECTRONIC MAIL ASSOCIATION (EEMA)

A Bridge between Standardisation and interest Groups

Standardisation, harmonisation of administrative regulations and promotion of public awareness are the three main concerns of the newly established European Electronic Mail Association (EEMA). At the Telecom '87 Meeting of the International Telecommunications Union (ITU) in Geneva next October, EEMA intends to stage a working session to evaluate the X-400 series of standards for Message-Handling Services and its differents interpretations.

Electronic mail and message-handling systems are poised to become the fastest growing aspects of telecommunications. In order to optimise the efficiency and growth of these technologies, it is considered necessary to resolve the problems of using isolated and separate messaging systems. Large corporations will continue to make use of proprietary network systems, but supplier and customer relations will rely more and more on gateways. Therefore, a small group fo firms and institutions took the initiative to found the European Electronic Mail Association last year, as an independent forum to promote electronic mail and message-handling services. This group consists of Air Call, Digital Equipment Corp., Geomail GmbH, ICL, The Irish PTT, One-to-One, Philips International BV, the Rotterdam School of Management, Softlab, Sydney, Telecom Gold (British Telecom) and Wang. After several months of preparatory work, an inaugural meeting of the EEMA was held in Paris on March 24, 1987 (See n° 9, pg 4). A short-term program of activities will be worked out during the coming months.

Single Administrative Document

EEMA recognises the importance of an open EDI (electronic data interchange) infrastructure, as an instrument for leapfrogging into a future of economies of scale in the European marketplace. In particular small and medium range organisations are expected to benefit from a standardised EDI-interface, based on the OSI interconnectivity model. EEMA's chairman, Mr Ids Zandleven, singled out the "Single Administrative Document" (SAD) as a presently available vehicle for EDI that has an enormous market potential. The European Commission is already pushing for its widespread acceptance throughout the Community. This way, electronic recording of transportation of goods will become the first step towards fully electronic and increasingly integrated tracking of production, ordering and transportation of goods.

Acute Problems

In Europe, problems due to variations in PTT regulations, complex and time consuming procedures at national borders, and various parallel decision-making initiatives in standardisation are very acute, according to EEMA. The Association will seek interaction with international bodies such as CCITT, CEC, ECMA, INTUG, CEPT and SPAG. However, it will avoid operating as a pressure group on organisations like CEPT or SPAG. It will instead contribute to bridging the gap between such organisations as these two, that happen to maintain different methods and procedures in their approach to standardisation issues. The idea is to function as a common platform for users of electronic mail and message handling services in the first place, as well as for vendors, service providers, public or private carriers, universities, governments and special interest groups. In this respect, EEMA is different from the International Telecommunications User Group (INTUG), which faces PTT administrations and vendors as an interest group. In order to achieve its goals regarding interconnectivity and market harmonisation, EEMA resorted to an advisory council in which vendors and Telecom authorities participate.

The leverage of EEMA will depend largely on its membership. One month after the inaugural meeting, 24 organisations from various countries were listed as contributing members. As it turned out, EEMA has made special efforts to enlist PTT organisations. Among its members are five common carriers. Typical users, however, still have to discover the new association. They are represented through some consultancy firms instead of directly. As EEMA considers support by small and medium size organisations of importance to the growth of EDI usage, the executive board aims to vary membership tariffs for 1988 in order to attract these particular groups. Some attendees at the inaugural meeting in Paris voiced an interest in action programs on a national scale. However, these have not been defined as yet by EEMA; this also applies to educational and promotional activities.

X-400 without Competition

According to EEMA's chairman the Association has not committed itself formally to the X-400 series of standards for electronic message-handling services, but considers these as a matter of fact since no other competing standards exist. In the opinion of Mr. Zandleven, the chances for X-400 support throughout the telecommunications and computer systems industry look bright because it leaves definition of user agents free to each individual vendor. In principle, EEMA advocates open standards. In terms of activities, its American counterpart and example, the Electronic Mail Association (EMA, 1919 Pennsylvania Ave. Suite 300, 20006 Washington D.C., USA, ph. + 1.202.293.7808) led the way. Last year, the American EMA published an implementation guide for the X-400 standard series. The organisation noted that, whereas X-400 is endorsed by many vendors, the various ways in which the standard is implemented causes new problems. The American Association also sends a delegate to the CCITT Message-Handling Services working group meetings on standardisation issues. The foremost achievement of the Association is considered to pertain to legislation. The EMA became a leading force in landmark legislation regarding electronic mail, which resulted in a Privacy Act in the fall of 1986. Since then, electronic messages are protected againt interception without permission in the same way as is traditional mail through postal services. Like the European Association, EMA started out with more members from the telecommunications and computer systems industry than first-hand users. After four years of operation, however, a considerable growth of the number of users as new members is reported.

Harmonisation

Standardisation is not the only issue for the new Association. Harmonisation is another one. The EEMA sees PTT organisations as one of the key forces to carry electronic communications, but at the same time it realises how difficult it is to harmonise PTT services internationally. EEMA spokesmen have pointed at varying service provisions of national PTT authorities that strained data communications services to date. International X-25 connections have proved to be difficult to realise due to different interpretations of service elements. International PVCs (permanent virtual circuits) are still unavailable through common carriers. Through its coordinating work, EEMA hopes to prevent such carriers form operating in electronic mail and message-handling services.

Membership includes Televerket, Italcable, Philips, British Telecom, Directoire General des Telecommunications.

For further information, contact
EEMA Services
Mr Jan Mul
Rotterdam School of Management
Erasmus University
P.O. Box 1738
1000 DR Rotterdam
The Netherlands
Tel. +31.10.40 82 030

MARCEL WERNER
(WERNER & THOOLEN)
AMSTERDAM

Compatible Telecommunications Help the Small Customer

Many small retailers are increasingly facing difficulties in meeting customer demands quickly and efficiently, especially where the stock involved is expensive and comprises possibly thousands of items coming from hundreds of suppliers. A typical example is the local bookshop. With several hundred thousand titles in print in anyone of the major languages, how can the retailer either hold everything on his shelves or indeed afford the overhead of sending individual orders to the various publishers. The universality of the problem is shown by the virtual simultaneous development and implementation of similar systems in the U.K. and the FRG.

The basis was the availability of a data base covering the respective language publications, available online, in microform and as a print product – British Books in Print and Verzeichnis lieferbarer Bücher. Since most retailers use a PC for housekeeping routines, it merely required a little ingenuity and publicity to suggest that this could be exploited in a different manner: the retailer can easily adapt his PC to intercommunicate with the local national packet-switched network. He then has several options: he can interconnect to the respective national data base, look for the record he requires, down-load this into a prepared "order form" which carries his particulars and is left in a mailbox on the host; a different approach is to key in his order into his PC which will be called up once every twenty-four hours by a central computer to collect the day's orders; a recent variant is the use by the retailer of a CD-Rom inhouse version of the data base to cut either telecommunication costs or keyboarding labour.

The orders collected by the central computer are further processed and distributed to the publishers, again every twenty-four hours. The reverse mechanism then comes into play with the publisher informing the retailer of availability, date of despatch and invoicing at the same time – ultimately bank transfers may be incorporated into the final integrated system. The U.K. system has already extented to Continental Europe, thanks largely to the compatibility of a wide range of hardware and software, with the associated telecommuniation protocols. Teleordering Ltd, the U.K. firm involved in conjunction with the publishers of British Books in Print, have currently nearly 1000 participants and the orders processed amount to nearly half the British book trade – some 14 million orders annually.

In the FRG, it is Bertelsmann who have evolved the system, which, once some copyright problems have been resolved, should also find wide use and acclaim.

Customer satisfaction with the U.K. system is high, with times for filling orders having been more than halved and much tedious and expensive paperwork being eliminated. Both the U.K. and FRG system also allow use via Videotex. Perhaps some enterprising supermarket operator may develop an analogous system for his customers, who could place their orders in this manner against the daily availability and price list, and then merely come and collect their goods, which have already been paid for by automatic bank transfer.

P.S.: Your Editor believes that while this does not represent a major breakthrough or indeed new technology, it is an example of intelligent exploitation of the facilities offered by standardised products in information exchange, which is of benefit to a wide range of users and has much potential still left unexplored.

Further details can be obtained from:

Teleordering Ltd.
Wellington House
61-73 Staines Rd West
Sunbury-on-Thames
Middlesex TW16 7AH

or

Bertelsmann Computer
Beratungsdienst GmbH
Heidenkampsweg 44
D-2000 Hamburg 1

CEBIT 1987

Some of the major developments displayed at this year's CEBIT fair in Hanover are only now becoming more widely known to those who were not there.

Thus a group of 14 major administrations and entreprises in data transmission and telecommunications areas jointly presented their plans to achieve a real breakthrough in Electronic Message Transmission. The members of the group, Deutsche Bundespost, British Telecom, Bull, Data General, DEC, Hewlett Packard, ICL, Nixdorf, NTT, Olivetti, Philips, Siemens, Sydney and Xerox, are all intent on focussing attention on the commercial use of electronic mail for their activities. Use will be made of electronic mail for their and their clients interworking activities. The significance of their initiative in twofold; firstly, in their recognition of the importance of the European CEN/CENELEC/CEPT standardisation prestandards ENV 41201 and 41202 and secondly, in their agreement to base the demonstration on implementations that are or will be commercial during 1987.

A further novelty shown was document exchange between systems of different producers, Bull, ICL, Olivetti and Siemens. The demonstration was based on the standardisation efforts of ECMA on document interchange. The International Standards Organisation (ISO) has taken up the concept of Office Document Architecture (ODA) in the framework of the seven-layer model for Open Systems Interconnection (OSI) and is elaborating a new standard, ISO-8613, for this application. This will supplement the existing electronic mail standardisation (X-400) in the area of document transmission and storage. The rapid progress in this field is attributed to the role of the ESPRIT program of the Commission.

In this context it is also interesting to note that DEC has announced that it plans to implement a revisable compound – text, graphics and images – document interchange format for its VAX computers.

The new DDIF Digital Document Interchange Format will conform to the Office Document Architecture guidelines being developed by the International Standards Organisation (ISO), and will enable the exchange of documents between DEC office and publishing products, as well as being made available to developers of publishing products.

DDIF is being based on existing CCITT X-409 and ASN-1 recommendations, and will enable DEC users to swap compound documents with users of any equipement that conforms to Office Document Architecture standards.

COST 11ter Seminar at the Gesellschaft für Mathematik und Datenverarbeitung (GMD) in Bonn/ St-Augustin

On 16 and 17 March 1987 COST 11ter organised a large seminar at the GMD. The seminar in which about 60 delegates from the actually ongoing activities in COST 11ter (projects and working groups) participated mainly aimed at

- information exchange between the researchers in the various projects and
- discussion of topics of common interest between projects in small ad-hoc groups for exchanging technical views.

According to these two main targets the seminar was structured as follows: on the first day project representatives explained the technical content of the work, while on the second day interproject ad-hoc groups were conducted discussing specific topics.

The seminar was opened by Mr. Friedrich Winkelhage, board of directors of GMD. Presentations on the first day were given as follows:

MANDIS:
by Alwyn Langsford (Aere Harwell), Otto Anshus (University of Tromsö);

SECURITY MECHANISMS:
by Seat Muftic (Sarajevo/Jugoslavia);

OSIS:
by Ekhard Raubold (GMD), Siegfried Herda (GMD), Collin Boyd (BT), H. Burkert (GMD).

FDT/ABM:
by Bjorn Pehrson (SICS)

HUMAN FACTORS
IN TELEMATIC SYSTEMS:
by Gerrit van der Veer (University of Amsterdam), Peter Innocent (Leicester Polytechnic), Steve Guest (Loughborough University)

AMIGO:
by Juan Sarras (Politechnical University of Madrid), Uta Pankoke-Babatz (GMD)

SATINE-2:
by Mervin Hine (CERN)

DAISY: byWithold Litwin (INRIA)

In preparation for the seminar, project descriptions and technical papers from the various projects had been distributed to seminar participants in advance to the meeting.

On the second day, working groups were formed to discuss the following items:

- Is there a need for a new architectural reference model?
  Chaired by Fritz Vogt (University of Hamburg)
- Architectural issues related to security and management;
  Chaired by Seat Muftic (Sarajevo, Yugoslavia)
- Agent concept;
  Chaired by Paul-André Pays (Ecole des Mines / St. Etienne)
- Name servers and addressing issues;
  Chaired by Jane Hall (Hatfield Polytechnic)
- High speed network applications (what medium to use to innerconnect LAN);
  Chaired by Mervyn Hine (CERN)
- Multimedia exchange and multi service transitions (from the user as well as from the network point of view);
  Chaired by Kjell Äge Bringsrud (University of Oslo)
- Secure communication (including aspects of user identification, authentication and authorisation);
  Chaired by Jan Ekberg (Technical Research Centre, Helsinki)
- Mail user interfaces and etiquettes in communication;
  Chaired by Uta Pankoke-Babatz (GMD).

After the end of these parallel adhoc groups a joint meeting was held. The chairpersons gave a short summary on the discussions and conclusion from the group work. A collection of papers, reports from the adhoc groups and of the transparencies shown on the first day are available from:

R. SPETH
200 Rue de la Loi
1049 BRUXELLES

Report on the IFIP Conference on Message-Handling Systems

Between the 27th and the 29th of April 1987 an IFIP conference on "Message Handling Systems" took place at the Technical University of Munich organised by IFIP Working Group 6.5 in cooperation with the German Society for Informatics. It was to give an overview on state of the art and to present and discuss work into new areas in message-handling systems. About 250 specialists from Europe and many overseas countries (U.S.A., Canada, Japan etc.) took part.

The IFIP Working Group 6.5 was established in 1978 by the Technical Committee 6 of the International Federation of Information Processing (IFIP TC 6 – Data Communication) to study international message-handling systems. The group set out to define a model for message-handling. In 1980, the model reached a mature state. At this time also the CCITT started its work on Message-Handling Systems and many scientists who originally worked on the IFIP Working Group joined the respective CCITT Rapporteurs Group. The work from IFIP was in this informal manner imported into the CCITT where the model was further refined. In addition to the model, CCITT defined in the time until 1984 a complete set of service descriptions and a set of protocols. All this work was published in 1984 as the X-400 series of recommendations in the "Red Book".

In order to carry out its work the IFIP 6.5 Working Group has, over the last few years, held a series of conferences on the subject of Message-Handling Systems (MHS). In 1981 the venue was Ottawa, in 1984 it was Nottingham, England, in 1985 it was Washington D.C. This year the venue was the Technical University, Munich.

In the three days of the conference 31 papers were presented during eight sessions: MHS Interconnection and Interworking, and Directory Systems, Directory Services, Group Communication, Message Management, Access Protocols, Workstations and Security, Impacts of MHS, and Tools and Conformance Testing, in addition to the opening and closing sessions. A set of parallel working groups on the following topics was also conducted: document structures and multimedia managing; MHS interconnection; access protocols; directories; group communication and office procedures, message storage and retrieval, generic user agents and human interface. The reports on these groups were presented in an additional session.

The state of the art is dominated by X-400 discussion, especially on X-400 developments, interconnection of X-400 systems of various manufacturers etc. but there was also much emphasis on interconnection with existing networks and services. An overview on the interconnection issue was, for example, given by M. Tschicholz et al., from the Hahn-Meitner Institut, Berlin. In another paper by P. Godelaine et al. from the University of Liege a gateway between COM and X-400 was presented. (Note: the COM system is used under the name EuroKom within IES).

A prominent role in operating X-400 systems and in interworking is given to directory services. Directory services are not yet at the development level of X-400. There are rather unstable directory draft standards at present which may reach a stable state within the next year. However there were already some reports on implementation models of standard directory service systems. Among the papers that dealt with this subject was "The ISO/CCITT Directory as a Distributed Database: Data Models" by T. Lenggenhager et al. of ETH Zurich. This paper considered a directory service not – as usually done – in the context of communications systems architecture, but in the context of data-base theory. A distributed directory therefore becomes a distributed data base.

The gap between Directory Services and Group Communication was bridged by two papers, each dealing with distribution lists. The first paper "Pilot Distribution Lists – Agents and Directories" by S. Benford and J. Onions of the University of Nottingham which was given during the Third Session, presented a model and a protocol for the handling of distribution lists within X-400. The AMIGO project, see below, will implement pilot distribution lists based on that protocol. The second paper presented as the opening paper of the following session by J.A. Saras and C. Huitema on "The Use of Distribution Lists in MHS" discussed various concepts for distribution list expansion.

Another area of discussion, with emphasis on future directions, was on message management which addresses message structuring principles and filing and retrieval of messages or documents. The "Use

of SQL for Message Storage and Retrieval" was reported by F. Delgado et al. from Barcelona.

There were also reports on problems of accessing message systems with suitable access protocols and aspects of distributed user agents and security. A set of "Enhancements to X-400 for Personal Computer Communication" was proposed by M. Normura, NTT (Japan).

There is a prominent larger area under investigation as future work: group communication, i.e. extending the scope of interpersonal messaging standards to communication of whole groups. This includes modelling of groups with applications of the modelling concepts to, e.g. distributed computer conferencing, agenda planning etc. In the paper "CRMM – A Distributed Bulletin Board" by A. Pays et al. from St. Etienne such modelling concepts as developed in the AMIGO project have been used for this special application. It may be noted that several papers on group communication (and also on message storage and retrieval and on distribution lists) stemmed from the AMIGO project (already mentioned above) which combines leading European research institutions in the area of message handling and which is financed under the CEC COST 11ter action.

Two papers tried to connect group communication to office procedure which may be seen as an interesting perspective for future work: T. Kreifelts et al. with "Addressing in an Office Procedure System" and W. Prinz et al. with "Group Communication and Related Aspects in Office Automation", both from GMD, Germany.

Finally two reports were on the issue of X-400 conformance testing, with an overview of actual developments by U. Beyschlag from Munich.

The parallel working groups (for list see above) which were run during the afternoon of the second day, aimed at discussing the relevance of the respective topic for future activities and possibly identifying issues to be considered. In a session on the following day the group chairmen (names in bracket below) reported on the outcome. Future emphasis should be on theoretical and practical aspects of group communications (U. Pankoke), on multi-media/multi-mode conferencing (H. Santo/H. Smith), message storage and retrieval (C. Huitema) and on generic user agent modelling (E. Stefferud). Although still of interest, issues such an access protocols (C.U. Manros), MHS interconnection (B. Hilpert), directories (S. Kille) and human interface (K. Thompson) seem to have second priority compared to the first areas. A written summary of the various groups will be included with the proceedings of the conference.

Full copies of the proceedings can be obtained from:
North Holland
P.O. Box 1991
NL 1000 BZ Amsterdam

The next IFIP conference on message handling is planned to take place in Carlifornia in 1988.

DAVID STEWART with
the help of R. SPETH and
R. SANDERSON
DG XII, BRUSSELS

Ada Europe Annual Conference in Stockholm

The Ada-Europe Annual Conference took place in Stockholm from May 26 to 28. Approximately 300 people took part, 150 of them from outside Europe.

The theme of this year conference was "Ada Components: Libraries and Tools. There were 24 technical presentations together with statements from AJPO (Ada Joint Program Office, which, for the American Department of Defence, is THE authority on Ada) on the European contribution to the development of Ada and Ada at work, and from the Commission, represented by John Elmore, on Commission support for Information Technology in general and Ada in particular. Of the 24 presentations several reported on projects supported by the Commission or by national administrations.

There were also, as is usual at such meetings, many opportunities for informal meetings and discussions. For many people this aspect is the main attraction of such conferences.

The Annual General Meeting of Ada-Europe also took place to conduct business of the association and to elect officers.

The proceedings of the conference are now available and are published by the Cambridge University Press in their Ada Companion Series. Copies may be ordered through your bookshop or from:

Cambridge University Press
The Pitt Building
Trumpington Street
Cambridge CB2 1RP
Great Britain

The ESPRIT Projects CARLOS and CACTUS

CARLOS (Communication Architecture for Layered Open Systems) is a project in the Information Exchange Systems area of ESPRIT. It has already been described in detail in an earlier edition of the IES NEWS (no 2, pg 6).

The project is carried out by RC Computer (prime contractor), CASE Communications, SYSWARE, and Fischer & Lorenz in cooperation with the two Danish Telephone companies – Copenhagen Telephone and Jutland Telephone.

The CARLOS project involves the development of a series of modular components which provide building blocks to construct OSI systems of varying sizes and sophistication to suit the diverse requirements and budgets of a large spectrum of potential users of OSI systems. The basic principle is to enable existing, common, de facto standard equipment (terminals and PC) to enter the OSI arena.

The project consists of the production of a number of components supporting the Virtual Terminal protocol and the File Transfer access and Management protocol at level 7. The OSI-BOX, the OSI-PAD and OSI-PC all support levels 6 and 7 of the OSI Model and the OSI-BOX provides the levels 1 to 5 support for the OSI-PAD and the OSI-PC. The CARLOS link layer exists between the OSI PAD/PC and the OSI-BOX. In addition there are all layer versions of both the OSI-PAD and OSI-PC.

The Network Management System is an integral part of the project and is based on emerging OSI principles and they will therefore have Entity Managers in all components. The complex mass of information that is required to be presented to a Network Supervisor can be simplified by means of the graphical Presentation System.

The CACTUS project (CARLOS Addition for Clustered Terminal User Agents) is an extension of the CARLOS project which has included new partners from Spanish Universities. CACTUS builds on the base of software and experience of CARLOS to implement the CCITT X-400 series of Recommendations. In the terms of the standards, such a device is a shared-resource user agent for clusters of terminals.

A CACTUS consists of VME-bus based hardware which supports personal computers which are primarily used as the user interface to a CACTUS. By means of an X-25 packet-switched network, the CACTUS is connected to either one or both of Private Interpersonal Messaging Systems, which includes more of itself and Public Message Transfer Services. The system is managed from a simple local terminal.

The user will utilise the PC for other functions and at intervals will log into the mailbox server which has been holding any incoming messages. These are then transferred to the PC's disc for perusal by the user. The user can also transfer messages prepared on the PC (probably using a standard PC word-processor package) into the Mailbox System Agent for onward routing via the MTA.

Simple terminals, such as those supported by CARLOS, can be supported in limited numbers via a user interface module within the CACTUS interfacing to the Mailbox Server.

By maintaining a path for existing devices to interface to the newer technologies, which is evolutionary and not revolutionary, we can make the migration as painless as possible. This encourages users to migrate earlier than they otherwise might have done.

For further information on CARLOS and/or CACTUS, please contact:

KELD STURUP
PROJECT CONSULTANTS
SKOVLYTOFTEN 4
DK-2840 HOLTE
DENMARK

Letters to the Editor

Dear Sir,

ISDN is so much in the news these days that there is danger of telecommunications policy getting out of perspective. Recent announcements of new pilot experiments to augment those already in progress; the onrush of advertisements put out by manufacturers anxious to emphasise their place in the forefront of technology; the promise of the exhibits to be seen at major telecommunications exhibitions; the speculative articles in trade journals that understandably need major topics to support their frequency of publication... all these together with the need of every country to promote technological modernisation to improve its posture in world markets, combine to create a public impression that just around the corner lies there waiting a new era of marvellous, cheap intercommunication.

This impression is not necessarily erroneous, but it is a simplistic picture which without some necessary provisos may result in serious misunderstandings. At the USERCOM Conference held in London at the end of March both the Secretary-General of the ITU and the Director of CCITT put things in a truer perspective. Mr. Butler stressed that it would be many years before even a majority of the 162 member countries of the ITU would be in a position to contemplate participation in an ISDN: many indeed still face the basic problem of providing easy access to plain old telephones. Mr. Irmer in turn underlined the point that ISDN is a concept, not a system ready to be taken from the shelf for quick installation, not something which can happen "between breakfast-time and lunch". Major users, for their part, also made it clear that whilst in favour of agreeing international standards and not opposed to public carriers' deployment of ISDNs, they had serious reservations at this stage as to the extent of their own participation.

Those speaking on behalf of the International Telecommunications Users Group do not see ISDN replacing private networks in the foreseeable future. The ISDN concept in the present state of development does not answer major users' wishes for facilities differentiated to meet their own individual needs. Its potential benefits are uncertain. Its technology could easily be superseded in the medium term by further research. And bearing in mind that internal communication in corporations may amount to between 60 and 80 per cent of overall communications, public ISDN appears in many important respects less suited to the business requirements of major users than their existing sophisticated, tailor-made systems carried on private circuits. They were concerned that the implementation of ISDN(s) will call for huge public capital investment, which traditionally falls on the business user who may not wish to put more than a fraction of his traffic on to such networks.

It is often said these days that the voice of customers should be heard and that users have a responsibility to define what services they want. I therefore make no apology for repeating what I have said elsewhere: the overwhelming requirement of major users is for good, basic fixed-price leased circuits, narrow and broadband, analogue and digital, transparent, of good quality, provided quickly and well maintained, to which a wide variety of equipment can be attached without long type-approval exercises or constraints on the nationality of the suppliers. The attractions of such private circuits are many. They are cost-effective, flexible in design, secure, manageable and adaptable for innovation. Their fixed costs facilitate budgeting. On those highways users wish to put traffic highly geared to their individual requirements and to obtain value-added services of their choice.

INTUG recognises that public digital networks and related services have a future role and should in due course be a desirable facility especially for residential users and small businesses. It certainly has no interest in seeking in any way to impede wise international communications planning, nor in denying that in some national environments big business may reasonably be expected to make an appropriate contribution towards universal service. The major users it represents, however, are properly determined not to

be forced (possibly through tariff juggling) into an as yet unproven, undefinded, uncosted network system that is none of their choosing. There is a precedent in some countries, where users are forced to use inefficient and expensive public data networks when other facilities are preferable. Similarly, residential users will not wish to be obliged to transfer to more expensive services.

The transition to ISDN will be gradual and take place over many years. What is important to establish now is that any political and investment decisions taken should be consistent with the principle of voluntary migration. In a highly competitive world businesses have to move with the times to survive, and consequently need no prodding to take advantage of any new facility that offers better service at cheaper costs. But the time has passed when users allowed the administrations to decide what they should have and when. They feel it is entirely reasonable to insist on the right to decide for themselves when change is opportune and then to move in good order.

This is not to ask society for special favours. At the end of the day business users are community wealth creators, and in the field of telecommunications their organisations underpin financially the whole worldwide telecommunications infrastructure.

G.G. MCKENDRICK
CHAIRMAN
INTUG, LONDON

May 11, 1987

P.S. Views expressed in reader's letters are not necessarily those of the Commission or of the Editor. The "Green Book" addresses many of the points made here.

Technological Rivalry on Launching of Commercial Videophone

The technical and economical barries behind the 'old dream', personal videophone, have now been crossed. A totally new communication industry may soon be born for applications of visual two-way telecommunication. All this is thanks to only one minor-looking technological breakthrough concerning the problem of how to digitally compress TV signals onto telephone line.

The technological breakthrough of videophone was originally achieved by a small hi-tech company in California in 1984. Since then, many R&D groups around the world have reported the same result, using varying methods.

Here is an insider's view of this new technology. The author of this article, Mr. Harry Santamäki, after working for several years in a technical research organisation and being involved in joint European COST projects, is now a new entrepreneur in the videophone business.

The Market Need for Visual Telephony

Nearly all the telecommunication services a citizen of modern society thinks he needs already seem to exist. Using a radio or TV set, one can listen and watch remote happenings, and using an audio or video tape recorder one can delay this operation in time. Access to remote data can be managed by data transmission services. Person-to-person services provide a possibility to transmit text and image information, like telex and telefax, and of course, to orginate an ordinary telephone call. Thanks to the latest cellular technology, this capability of speaking to other people can be expanded geographically, too.

However, what is lacking, is the capability to transmit motion video signals from anywhere to anywhere, i.e. low cost videophony using existing telephone lines. This would bring the power of meeting and seeing people right to one's own desk.

Market forecasts for videophone products are speculative, but, e.g. CEPT has expectations that 5% of the existing phone sets will be substituted by videophones within the next 17 years. The number of phones is now about 500 million sets worldwide (e.g. 1 in 10 of the population).

Motion Video in a Single Digital Telephone Line

Until now there has been a common thought that videophone services must wait for optical fibres and related wide-band services to become available. But this is not the case any more. The new coding technology and the video coding/decoding equipment, video codecs, have changed the situation totally.

While a standard TV signal needs around 100 Mbits transmission capacity, which equals 1500 parallel telephone lines, the new compression methods permits transmission motion colour video signals at a 64

kbits data rate, which means a 1:1500 compression ratio.

These methods utilise the high internal redundancy of video signals and the properties of the human eye. Using the latest semiconductor chips it is now also possible to build a fast enough digital processor for these methods, i.e. to calculate interframe differences of successive video frames, to detect the motion parts of each frame, process those segments for transmission and to receive and decode simultaneously incoming data for the display monitor. All this must be done at very high speed, i.e. up to 50 fields per second.

Table 1 gives a list of the first commercially available video codecs. The sizes and complexities of these products may be considered according to the power consumption figures.

Year of introduction	Company	Product complexity (power consumption)
1984	Widcom Inc, USA	800Watts
1986	Vistacom Oy, Finland	50Watts
	Pictel Inc, USA	1400Watts
	Mitsubishi, Japan	700Watts
1987	Avelex Inc, USA	200Watts
	Concept Inc, USA	
	GEC Ltd, UK	
	NEC, Japan	
	KDD, Japan	

Table 1. List of commercially available video codecs of single line videophone

Question of Picture Quality

This is a most complicated and subjective question. What is the picture quality really needed for operative use of a videophone. And what is actually meant by picture quality?

Picture resolution, i.e. number of picture elements or "pixels", is perhaps the most evident parameter of quality. The resolution of the codecs listed in Table 1 varies from 128 pixels per line, which may considered as the lowest acceptable, to 256 pixels per line, the highest necessary. The exeption on the list is the GEC codec with only 64 pixels per line.

Another key parameter is the capability to tolerate motion on the image. As the nominal field rate varies from 5 to 30 Hz, full motion of facial expression can be produced during normal situations. Odd things like field dropping, jerkyness and "dirty window" effects can be seen, when there is relatively much movement of the image.

In the existing communication products there can be found two quality classes for audio; that of HIFI equipment and that of the standard telephone set. Nobody has required the same quality level for both products, e.g. HIFI sound for the telephone.

In the same way, it can be assumed that there will be accepted a new quality class for video, person-to-person communication video quality.

Future Trends

Videophone will be used for business use only for a long time to come. The investment costs of a videophone equipment presently range from $ 12.000 to $ 80.000 per unit.

When cumultative production quantities will go up, prices will come down to some extent. My personal estimate is that when the markets have developed to the same level as mobile telephones or cellular networks are at today, the prices of the terminals will approach the same level. This means production quantities of 100.000 units per year and price level under $ 5.000 per unit.

But when this will happen is another story. Many problems still exist before videophon can become widely accepted. One of the problems, and perhaps not the smallest, is whose coding method is going to be accepted as a global standard? – Who is going to be the winner?

For the time being, it is assumed that CCITT could set a standard for videophony at the earliest is 1992. But it is not yet clear what is going to happen.

A Lesson on Global R&D Rivalry of Videophone R&D

In general, it can be said that only two alternative strategies are succesfull for introducing new technology in the marketplace.

The first, which is typical of American companies, is to go to the market as quickly as possible after basic innovation and to get a good market share. This is just what the US companies in the videophone business have done. E.g. Concept Communications Inc, has already sold in advance some 100 units, but the development work is not yet finished and nothing has been shipped. However, their market penetration cannot be neglected.

The second market strategy, typical of Japanese companies, is to be early with R&D but to wait for the market to develop and grow and then, to come to the market with enough production and marketing power. This is what they will do in the videophone business, too. But perhaps not before there exist homogenous and wide markets for well specified and standardised products.

No successful strategy exists between these two alternatives strategies; especially in the case of videophone rivalry. Here we have something to think about as European manufacturers and as promoters of a new technology.

ARRY J. SANTAMÄKI
VISTACOM INDUSTRIES OY
INC
FINLAND

Book Review

Directory on
Online Data Banks 1987.
Association Nationale de la
Recherche Technique
Paris: Division Lavoisier, 1987,
10th Edition, 371 pp. (370 FF)

This welcome tenth edition of the French data base guide for the first time lists more than 1000 data bases. The information provided is clear, well arranged and up-to-date. It is particularly useful for users who are concerned with costs – details are included of the host charges allowing comparisons to be made where a file is available from different sources. The printed indexes provided should satisfy most users, and there is also reference to available front-end programs to facilitate searching.

Milestones in Community Standardisation Policy

In December of 1986 the Council of Ministers adopted a decision on standardisation in the field of Information Technologies and Telecommunications. This decision was the latest in a series which has defined the course of Community Policy on standardisation applicable to Information Technologies and Telecommunications.

Standardisation has always been implicitly present in the policies of the European Communities. The Treaty of Rome stated that restrictions on imports between member states shall be prohibited. The lack of common standards applicable throughout the Community has however impeded the free movement of goods so while standardisation was not explicitly mentioned it certainly was justified.

From the time of the signing of the Treaty of Rome until 1976 there was little action on standards but in that year the Council adopted a Directive coordinating procedures for the award of public supply contracts (76/62/EEC).

This directive introduced standards into the public procurement activities of the member states. The technical specifications which figured in any public procurement contract should now be defined in terms of recognised standards.

In descending order of preference these were:

1. Community standards which are binding by virtue of an act of the Communities;
2. other Community or European standards accepted by the country of the contracting authority;
3. international standards accepted by the country of the contracting authority;
4. the national standards of the country of the contracting authority;
5. any other standard.

It was not until 1979, however, that the full effect of this directive could be brough to bear. In that year the Council made a decision (79/783/EEC) adopting a multiannual program (1979-1983) in the field of data processing. Standardisation policy was mentioned specifically and more importantly money was available for the development of a Community policy.

The aims of the standardisation policy were to define priority sectors after consulting users and industry, to promote research designed to foster a Community contribution towards international standards, to ensure that member states applied standards approved at Community level and to disseminate Community information in the field of standardisation. In public procurement the aims of the policy were to determine the most efficient methods of applying agreed standards in the public procurement sector and to examine measures required in that sector to assist European industry in preparing for the full application of the relevant Community rules.

In that same year, 1979, the Court of Justice reached a very important decision. The Commission reported to the Council on the consequences of the case in the Official Journal of 3/10/80. The case in question concerned "Cassis de Dijon", a blackcurrant liquor. The decision of the court, however, had wide ramifications. The court ruled that any product exported from a member state must, in principle, be admitted to the territory of the importing member state if it has been lawfully produced, i.e. if it conforms to the rules and processes of manufacture which are accepted in the exporting country, and if it is marketed in the territory of the exporting country. This ruling meant that standards in force in one member state had to be recognised in every other state.

The broad outlines of standardisation policy now began to narrow. In 1983, directive 83/189/EEC was adopted by the Council. This directive laid down a procedure for the provision of information in the field of technical standards and regulations. No longer could member states pursue their own standards programs ignoring what was going on elsewhere. Each Member State was now obliged to inform the Commission and other international standards authorities, on a yearly basis, of the standards programs drawn up by their national standards institutions; they in turn informed every other Member State so that everybody knew what was going on. Each Member State was also obliged to ensure that their national standards institutions did not draw up or introduce standards for areas where European standards were being drafted. And any draft technical regulation, which was not a direct transcription of an International or European standard, drawn up by a member state, had to be communicated immediately to the Commission and the regulation had to be justified.

Similar measures, though not as strong, were introduced for telecommunications in 1984 when the Council adopted a recommendation (84/549/EEC) concerning the implementation of harmonisation in the field of telecommunications. This recommended to member states, without putting any obligation on them, that the telecommunications administrations consult each other before introducing a new service, ensure that all new services introduced from 1985 onwards are on the basis on a common harmonised approach and that from 1986 onwards when they order digital transmission and switching systems, they take full account of recognised standards in the Community.

The next step was the publication of a Communication from the Commission of the Council and Parliament (COM (85) 19 Final) on "Technical Harmonisation and Standards: A New Approach." This document set down the aims of a Community Standardisation policy as helping to create a market and remove barriers to the functioning of the market, helping to bring about more efficient exchanges of information which are essential to the proper functioning of economic life and helping to save individual users and companies from pointless conversion costs owing to incompatibility.

The Commission justified its actions in standardisation by stating: "The growing importance on standards in this field and in particular the role they play in ensuring the exchange of information on the basis of agreed conventions and the compatible working of systems processing and communicating that step up the activities already under way and to supplement them by more precise action."

In June 1985 the Commission communicated to the Council two proposals for directives. One on standardisation in IT and Telecommunications and another on the first phase of the establishment of mutual recognition of type approval for telecommunications terminal equipment. These proposals were published together in COM (85) 230 Final.

The second of these proposals was adopted and became Council Directive 86/361/EEC of 24 July 1986. This directive opened the market in terminal equipment and removed the obligation for manufacturers to have their products tested in every country they were selling to. This directive comes into effect one year after its publication in the Official Journal of the European Communities.

The first of these proposals, on standardisation in IT and Telecommunications was the subject of much discussion by the Council of Ministers but was eventually adopted, as a decision and in a modified form, on 22 December 1986. This latest decision has now been published in the Official Journal (7th February 1987), and will take effect one year from this date.

Esprit
Information Exchange System

IES NEWS

Issue No 10, June 1987

As an IES NEWS reader you will be confronted from next issue onwards with regular news on the COSINE Project and on general networking activities in Europe in relation to COSINE.

I am sure it will increase the information value of IES NEWS and, of course, as the Chairman of the COSINE Policy Group I am very happy to have found such an excellent medium to disseminate news about COSINE and its environment.

COSINE is a EUREKA Project and commits the European governments (hopefully all 19 EUREKA countries will participate) and the CEC to bring their best efforts to the task of

Announcement on COSINE-News in IES Newsletter

getting the present computer networks for Europe's research community interworking on the basis of OSI principles. Europe's ITindustry, committed as it is to OSI, will then get a major boost to increase its competitiveness on world markets because a real and very advanced European home market will be open for Europe's companies. Therefore you will find information on the progress of COSINE which relies in a decisive way on the RARE organisation familiar to the IES NEWS readers. You will find information on industry, as a user of computer networks and as manufacturers. There will be information on national governments and PTT's policies to support OSI. News about the non-OSI world migrating to OSI will be dealt with. Since COSINE, in relation to all that is going on the CEC environment and in the various coun-

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P. TINDEMANNS
CHAIRMAN, COSINE POLICY GROUP

FUTURE EVENTS

Text and Image Processing.
IEPRC Würzburg, July 8 - 10, 1987.

Tenth Internat. Conf. on Artificial Intelligence.
Associazone Italiana per l'Informatica ed il Calcolo Automatico.
Milan, Aug. 23-28, 1987.

Artificial Intelligence for Natural Sciences. Institute for Scientific Interchange.
Turin, Aug. 31 - Sept. 5, 1987.

Infodial-Videotex.
GFFIL, ACSF, AFTEL and SICOB.
Paris, Sept. 15 - 18, 1987.

Machine Translation SUMMIT.
J.I.C.S.T.
Tokyo, Sept. 17 - 19, 1987

FUTURE EVENTS

The Electronic Customer.
EUSIDIC.
Montreux, Oct. 12 - 15, 1987.

Electronic Information Distribution. Online.
London, Oct. 20 - 22, 1987.

Translating and the Computer.
Aslib.
London, Nov. 12 - 13, 1987.

Expert Systems 87. Brit Computer Soc.,
Brighton, Dec. 14 - 17, 1987.