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L-1735 Luxbg.-Gasperich
ISSN 0257-4373

Esprit Information Exchange System

iesnews

Issue No 28, June 1990

This Issue

The development of Open Network Provision (ONP) is intended to create open access to networks for innovative services, which will be crucial for the evolution of an open common market for telecommunications by 1992.

ONP conditions are a well defined set of definitions for access to and use of the telecommunications infrastructure on a Community-wide basis. These definitions include technical interfaces, usage and supply conditions and tariff principles. ONP conditions have been developed for leased lines and are in the process of development for public data networks.

The Commission of the European Communities (CEC) is launching studies into the following areas where the ONP concept may be applied: (a) Voice Telephony, (b) Integrated Services Digital Network (ISDN), (c) Intelligent Networks, (d) Co-existing Services on Local Cable Distribution Networks (Data over Voice - DOV) and (e) Broadband Networks.

Studies on the Application of Open Network Provision

In addition an accompanying study will be conducted that will evaluate and compare the developments of ONP and the US concept of Open Network Architecture (ONA). This will also include an analysis of the respective policies and their mutual impact.

Voice Telephony Services are generally considered to have significant potential for the development of a wide range of value added services. Moreover, the public voice telephony service is singled out in the Green Paper on Telecommunications as a service where member states may well wish to maintain monopoly rights for national public network operators. The CEC is therefore contracting an independent study on 'The application of the Open Network Provision (ONP) concept to Voice Telephony Services.'

(Continued overleaf)

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Information Industries
and Innovation

Late News

Launching of IXI

The Pilot International X.25 Infrastructure (IXI) Backbone Service was officially inaugurated on Friday, 8 June 1990 by the Commission of the European Communities (CEC) and PTT Telecom of the Netherlands at a ceremony held in the Hague. Other Telecommunication Administrations and European research networking organisations were also present.

The IXI pilot service will have a duration of twelve months and it is the first major activity of the EUREKA COSINE project implementation phase. The service provides packet switched data communications at an access speed of 64 Kbit/s. The ability to access the IXI service at such a speed and with consistent quality of service throughout the 20 COSINE countries makes the availability of the IXI service a major milestone in European research networking. From now on European researchers will have all the advantages that X.25 service provides and will no longer need to contend with the constraints and restrictions that were encountered when the public international service was being used.

PTT Telecom were awarded a contract last Autumn by the CEC for provision of a pilot Europe-wide interconnection of computer networks for researchers. The CEC is contributing the major portion of the funds on behalf of the Community and its Member States from the budget of the Esprit programme, while the other non-Community COSINE states are to provide the remainder.

Following RARE's specifications, IXI uses data communications protocols that conform to the CCITT X.25 (84) set of recommendations and allows connectivity to X.25 (80) subnetworks. Since November 1989, some 20 research networks and a number of public packet-switched data networks within the COSINE countries have been connected to the IXI Backbone via X.25 access points at a line speed of 64 Kbit/s. Public data networks have been connected via X.75 access points and the same line speed.

The IXI service can be accessed via the national research networks and some selected PDPDN's. Further information can be obtained from the national research networking organisations or the IXI Project Team at the RARE Secretariat.

Further details see page 15.

STUDIES ON THE APPLICATION OF OPEN NETWORK PROVISION

The Application of the ONP Concept to Voice Telephony Services.

The study now under way will devise a suitable framework for the definition of ONP conditions for voice telephony services. Key issues will be identified which are relevant to access, usage and supply conditions and tariff principles appropriate for voice telephony services in the Europe of the nineties.

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ISDN is expected to become a predominant network infrastructure in Europe during the 90s and in anticipation of its full-scale implementation, the CEC is sponsoring an independent study on "The application of the Open Network Provision Concept to ISDN".

This study outlines appropriate "open provision" scenarios and corresponding regulatory arrangements for ISDN services and particularly focuses on determining the technical access arrangements and the required supplementary service features to be considered in the context of ONP.

The Application of the Open Network Provision Concept to the Integrated Services Digital Network (ISDN).

On the basis of an open tender invitation OVUM Ltd. and the European Telecommunications Consultancy Organisation (ETCO) were selected to conduct the study which involved consultation with all interested parties of the twelve Member States. The results of the completed study will be presented at a workshop in Brussels on 10 July 1990.

The two selected companies have established expertise in respective areas essential for a balanced study, OVUM in market research and ETCO in telecommunications network development, ISDN plans and standardisation.

The work already undertaken by the International Telegraph and Telephone Consultative Committee (CCITT) and the European Telecommunications Standards Institute (ETSI) has been incorporated in the study.

A Workshop, in the context of the study, was also held on 6 February 1990 to examine the proposals developed by OVUM as a result of their market analysis. User organisations, telecommunications operators and other interested parties, who assisted OVUM in providing information for the study were invited. The event provided an opportunity for an exchange of views at this early stage of study development of ONP conditions for ISDN.

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Intelligent Networks are generally considered to have significant potential for the development of a wide range of value added services. Open Network provision has a role to play in this development and in the context of rapid development of the principles of ONP, the CEC is sponsoring an independent study on the interrelations between the "Open Network Provision Concepts and Intelligent Networks".

This study is intended to identify key issues relevant to current knowledge and possible future developments of Intelligent Networks and associated services. In particular the study will consider the scope of application and outline appropriate strategies for applying IN capabilities in the provision of ONP services.

The Interrelations between Open Network Provision Concepts and Intelligent Networks (IN)

As a result of the invitation to tender the European Telecommunications Consultancy Organisation (ETCO), together with Technology Investment Partners (TIP) as sub-contractors, were selected to conduct the study which will involve consultation with interested parties throughout the Member States and beyond. The study began during the first quarter of 1990 and is expected to be completed by the third quarter of 1990.

.....

The local distribution networks which at present are usually provided by the Telecommunications Administrations as part of the reserved public network infrastructure constitute a very expensive and generally underutilised resource. Data-Over-Voice (DOV) and other techniques now provide the means by which this resource can be exploited economically to support co-

Co-Existing Services on Local Cable Distribution Networks (Data over Voice - DOV) in the Context of Open Network Provision (ONP).

existing services on individual local two-wire or four-wire customers' circuits. The new capacity represented by this resource could well be used to deliver value added services and in this context ONP conditions for access may be developed. It is therefore considered opportune for the Commission to sponsor an independent study on "Co-existing Services on local cable distribution Networks (Data over Voice - DOV) in the context of ONP."

STUDIES ON THE APPLICATION OF OPEN NETWORK PROVISION

A study now underway will identify and evaluate key technical, regulatory and market harmonisation issues relevant to the introduction and development of value added services in the local distribution network. In particular the study will give special consideration to the issues relevant to the multi-vendor operations involving parallel (shared) use of local network resources between Telecommunications Administrations and Private Service Operators. The results should be known by the autumn of 1990.

.....

The broadband networks and services now being developed or proposed in accordance with national and international development projects and particularly in accordance with the RACE programme are anticipated to evolve into major integrated telecommunications resources. These resources will offer opportunities for value added

The Application of Open Network Provision Principles to the Broadband Networks.

services using the increased capabilities of broadband facilities. Early application of the concept of ONP to IBC has been recognised by the RACE Requirements Board as an important step in the regulatory environment towards a harmonised early implementation of IBC in Europe. The CEC has decided, therefore, to sponsor an independent study on "The application of the ONP principles in Broadband Networks, to determine the appropriate provision conditions and wider regulatory arrangements necessary to ensure open access to and use of broadband networks throughout the Community in accordance with ONP principles.

.....

The different regulatory environments that exist in the Community and the United States have resulted in different approaches to achieving a common goal - encouraging the growth of value added services. Both approaches have

Interrelations between Evolving Concepts of Open Network Provision and Open Network Architecture.

now resulted in proposals that are in an advanced stage of development. The CEC is to sponsor an independent study on "The Interrelations between the Evolving Concepts of ONP and ONA". The study will be a detailed evaluation of the developments of ONA and ONP together with an analysis of the respective policies and their mutual impact.The results of this study are due by the autumn of 1990.

A workshop, in the context of the study was held on 10 April 1990 with participants from Europe and the United States including telecommunications organisations, enhanced service providers, users, manufacturers, regulatory bodies and independent experts on the telecommunications industry and regulatory frameworks. The Workshop provided an opportunity for the participants to present their views and take part in open discussions on the two concepts - ONP and ONA - that are the cornerstone in the development of worldwide telecommunications.

For further information, contact:

J. TOSCANO
DG XIII D2
Brussels

Open Systems in Business

This is the title chosen by the National Computer Users Forum (U.K.) for their conference scheduled for 25 - 27 September 1990 at the University of Nottingham. The event is supported by the Department of Trade and Industry and is aimed to underline DTI's Open Systems Technology Transfer Programme which was launched in May 1989 to promote awareness of the need for, and benefits of, Open Systems to business enterprises.

The Conference will address the key issues facing IT professionals in planning and implementing their IT strategies for the 1990's and beyond with specific reference to the challenge and impact of Open Systems, which will not only affect the technical infrastructure of an organisation, but will strike at the core of operation and management of an enterprise.

Topics to be discussed at the Conference will not only deal with the business issues surrounding Open Systems and provide guidance in evaluation of Open Systems for application in enterprises, but also system security, product availability and OSI management.

Further details can be obtained from:

NATIONAL COMPUTER USERS FORUM
PO BOX 18
BEESTON
NOTTINGHAM NG9 3LT
Fax: +44 602 280823

The DTI supports a small number of Demonstrator projects to allow organisations to follow the progress of 'live' Open Systems implementation projects. Information on the DTI's Open Systems Technology Transfer Programme with practical guides and case study material can be obtained from:
DTI-Open Systems Information
Room 712, Kingsgate House
66 - 74 Victoria Street
LONDON SW1E 6SW

PARTIES INTERESTED IN OPEN SYSTEMS

In today's world there are a number of parties interested in Open Systems, which can be broadly grouped into:

Government Procurement Specifications:
GOSIP, EPHOS, IPSIT;
User Specifications:
MAP, TOP;
Vendor Associations:
SPAG, COS, POSI, OSI NMF, X/OPEN, Unix international, OSF;
Interoperability Demonstrators:
EurOSInet, OSIone;
Standards Bodies:
ISO, CEN/CENELEC/CEPT, BSI/AFNOR/UNI/DIN/ON/IBN/DS/SFS/ELOT/NSAI/NNI/NSF/IPQ/SIS/S/ON/IBN/DS/SFS/ELOT/NSAI/NNI/NSF/IPQ/SIS/SNV, ECMA, ANSI/IEEE;
Functional Standards Creation:
EWOS, ETSI, NIST, OIW;
Accreditation/Certification Arrangements:
ECITC, NIST, TITN, DANET, Idacom,
Consortia:
SPAG CCT;
Tool Developers:
Fraunhofer, NCC, TNC, SPAG;
Coordination Groups:
MLFF/TLFF, ITRSG, NMF/COS/SPAG, COS/SPAG, CPS Forum, COS/ITRC, RWS - CC

Many of these bodies have linkages with one another. (See below). The above demonstrates:

- The enormous complexity;

- the need to develop a strategy which reverses the trend and leads to a reduction in the numbers of relevant bodies;

- the need to understand the key players through which major leverage can be obtained.

GLOSSARY

AFNOR *Association Francaise de Normalisation* - non-governmental French standards organisation represented on ISO Technical Committee 97.

ANSI *American National Standards Institute* - US member of ISO

AOW *Asia Oceanic OSI Workshop* - regional workshop to coordinate the development of proposed draft International Standardised Profiles (pdISPs); AOW is currently reviewing OSI Profiles with EWOS and NIST

BSI *British Standards Institute* - national standards body which feeds into ISO

CEN/CENELEC *European Committee for Standardisation* - the European Counterpart of ISO/ European Committee for Electrotechnical Standardisation - the European counterpart of the IEC (International Electrotechnical Commission).

CEPT *European Conference of Posts and Telecommunications* - the European counterpart of CCITT.

CNMA-CCT *Communication Network for Manufacturing Applications - Conformance Testing.*

COS The US based corporation for Open Systems.

DIN *Deutsches Institut für Normung* - West German standards organisation which contributes to ISO

DS *Dansk Standardiseringsrad* - the Danish member of ISO

ECITC *European Committee for Information Technology/Testing Certification* - initiative to harmonise certification and accreditation in EC and EFTA countries.

ELOT *Hellenic Organisation for Standardisation* - the Greek contributor to CEN/CENELEC

ECMA *European Computer Manufacturers Association* - originally set up to develop standards for the computer industry and currently very active in upper layer protocols

EDIFACT *Electronic Data Interchange for Administration, Commerce and Transport*- a standard developed by Working Group 4 of UN/ece (United Nations Economic Commission of Europe), ratified by ISO, defining information type for international electronic trade interchange.

EPHOS *European Procurement Handbook for Open Systems* - France, Germany and the U.K. are currently working on the specification of a European GOSIP for which the CEC is funding the creation of EPHOS

EUROSINET Marketing association of IT systems and service suppliers whose collective mission is to promote the wider adoption of OSI in Europe. Links with similar networks in other regions of the world i.e.: OSIcom (Australia), INTAPnet (Japan), and OSNet (Singapore). Eurosinet is also collaborating with SPAG to ensure

convergence of conformance and interoperability testing, and other bodies such as OSITOP represent the needs of the users.

EWOS *European Workshop for Open Systems* - a European organisation for the development of functional standards.

ETSI *European Telecommunications Standards Institute.*

GOSIP *Government OSI Profile* - government defined functional standards to help government departments specify and purchase open systems equipment; the GOSIP programme exists in several countries in Europe, North America and the Pacific basin.

IBN *Institut Belge de Normalisation* - the Belgian national member of ISO

IEEE *Institute of Electrical and Electronic Engineers* - US technical and professional association for electrical engineers, which recommends and publishes standards in many areas of electrotechnology; it acts internationally through the US National Committee for the IEC and through ANSI for ISO.

INTAP *Interoperability Technology Association for Information Processing* - Japanese agency, partially funded by MITI, engaged primarily in providing conformance testing for OSI products

IPQ *Instituto Portugese Da Qualidade* - the Portugese national member

IPSIT *International Public Sector IT Group* - informal association of public sector organisations - from Australia, Canada, the US, Japan, Sweden, UK, France, Germany & CEC - responsible for the development of open systems procurement profiles.

PARTIES INTERESTED IN OPEN SYSTEMS

IROFA *International Robotics and Factory Automation Centre* - Japanese organisation founded in 1985 involved in R&D, Training for Engineers, MAP.

ISO *International Organisation for Standardisation.*

ISP *International Standardised Profile* - profiles or functional standards produced and issued under the authority of ISO.

ITRC I*nformation Technology Requirements Council* - parent organisation of the North American MAP/TOP Users Group.

ITRSG *Information Technology Resources Support Group* - comprising executives of ISO member bodies and IEC national committees to manage resources in order to progress and prioritise the standards process.

JSPMI *Japanese Society for the Promotion of Machine and Industry* - set up MAP 3.0 test centre in October 89, commercial conformance testing started in April 1990.

LASER Japanese Engineering Research Association of Flexible Manufacturing System Complex - established in 1978, conducts research into CIM and MAP IOP testing.

MAP *Manufacturing Automation Protocol* - a set of functional standards developed under the auspices of General Motors in the US.

FullMAP - covers all 7 layers of the OSI reference model (the Manufacturing Automation Protocol is based on 802.4 networking).

MiniMAP FullMAP 'reduced' to layers 1,2 and 7 of the OSI model.

MLFF *Management Level Feeders Forum.*

NCC *The National Computing Centre* in the U.K.

NIST *National Institute for Studies and Technology* (part of US Department of commerce) - formerly the domain of the National Bureau of Standards, NIST is developing standards for large computer networks, LANS and computer-based office systems based on OSI; NIST sponsors implementor groups dedicated to MAP, TOP, OSI, ISDN and OSInet.

NIST-OIW NIST OSI Implementors Workshop - publishes Implementation Agreements for OSI Interconnection Protocols in the form of Stable Agreements or Work in Progress; the latter form the basis of US GOSIP which is obligatory for all US government organisations for all procurements effective 2 years after publication, updated annually.

NNI *Nederlands Normalisatie-Instituut* - the national Netherlands member of ISO

NSAI *the National Standards Authority of Ireland* - the national Republic of Ireland contributor to CEN/CENELEC

NSF *Norges Standardiseringsforbund* - the Norwegian member of ISO

ODA *Office Document Architecture* - a recently ratified ISO standard for the open exchange of documents between different processing systems

PARTIES INTERESTED IN OPEN SYSTEMS

(e.g. graphics, word processing, desktop publishing and fax quality...)

ON *Oesterreichisches Normungsinstitut* - the national Austrian standardisation body

OSInet *A US version of Eurosinet organised in the US by NIST.*

OSIone *Open Systems Interconnection Organisation for Network Establishment* - a consortium of demonstration networks including OSInet and EurOSInet.

PODA-2 *Piloting ODA*-ESPRIT project currently in second phase demonstrating exchange of integrated text and graphics ODA documents via e-mail.

POSI *Promoting Conference for OSI.*

RWS-CC *Regional Workshop Coordination Committee:* established to coordinate the efforts of the AOW, EWOS and NIST workshops for the harmonisation of functional standards (AOW dealing with the Pacific Basin, EWOS for Europe and NIST for North America)

SFS *Suomen Standardisoimisliitto r.y.* - the national Finnish standards body

SIS *Standardiseringskommissionen i Sverige* - the national Swedish member of ISO

SNV *Schweizerische Normen-Vereinigung* - the national ISO member for Switzerland

STRI *Technological Institute of Iceland* - the Icelandic member of CEN/CENELEC

SPAG *Standards Promotion and Application Group* - a consortium of European suppliers developing functional standards. (See IES News issues no. 24 and 27.)

TLFF-CC *Conformance and Certification Group within the Technical Level Feeders Forum.*

TOP *Technical and Office Protocols* - a set of functional standards designed for the office environment, initiated by Boeing in the US.

UNI *Ente Nazionale Italiano de Unificazione* - Italian standards body which feeds into ISO.

X-Open Dedicated to the creation of an internationally supported, vendor-independent, Common Applications Environment based on industry standards.

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Brussels.

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Fax: +32-2-537-24-40

Publications Received for Review

Information Technology Atlas - Europe. Second Revised and Expanded Edition.
Amsterdam: IOS Press
London: C.G. Wedgewood & Co. Ltd., 1990, 451 pp.

Recent Decisions Taken by the Commercial Action Committee (CAC) of the Conference of European Postal and Telecommunications Administrations (CEPT)

1. New Structure.

CAC has adopted the principles for its restructuring, which will be implemented gradually over the coming 12 months.

The Committee agreed to adopt its structure and working methods to a changing environment and to changes of the Conference of European Postal and Telecommunications Administrations (CEPT) as such. The Committee shall in the future be a body of operators and the work shall be performed within project teams with a limited time frame for solving specific tasks. The day-to-day coordination of the work performed by the various project teams will be done by special coordination groups. The Committee and its working groups are undertaking a major review of its recommendations with regard to accounting and tariff principles in order to align the recommendations to the new situation. However, the review can not be finalised until guidelines concerning the balance between harmonisation and liberalisation of services are defined by the European Commission.

2. VSAT (Very Small Aperture Terminal)

New satellite services will be introduced as VSAT services in several European countries.

Recent Decisions Taken by the Commercial Action Committee (CAC) of the Conference of European Postal and Telecommunications Administrations

CAC sees VSAT services as a big potential market for large customers use of satellite services. VSAT has so far mostly been used for one-way transmission, but new techniques have made two-way use possible for the benefit of new business services by satellite.

3. Video Conferencing.

Improvement of the European Video conferencing Service and to the service operator with North America, Japan and extension of service to other countries.

The European Video Conferencing Services (EVS) will in the future concentrate on further technical and commercial improvements to this fast growing service.

Discussions are taking place with overseas carriers about the possibility of the service to North America and Japan to be also based on the one-stop-shopping principle.

4. One-Stop-Shopping.

One-Stop-Shopping for international Leased Circuits for private use has been established and a similar framework for International Packet switched services is being considered.

The Committee has coordinated the general activities in the field of One-Stop-Stopping (OSS) and has agreed on the framework for OSS on leased lines for private use. The work will subsequently be followed by similar frameworks for other services areas e.g. international X.25 services, VSAT services, videotex etc.

5. Quality of Service.

The Quality of the European Services will in the future be measured and published regularly on a common basis in Europe.

The work in the important area of QOS (quality of service) has been further strengthened by the Committee through the establishment of a special Project Team which will define a common set of QOS parameters for all international telecommunications services. Furthermore measurements of the quality of the actual service will be performed and the results published regularly.

Further information may be obtained from:

J.F. PEDERSEN
Copenhagen

Tel: +45-33-93-33-77
Fax: +45-33-93-77-95

DiagnOSIs

This network monitoring tool for the upper OSI layers has just been released. Details in the next issue of IES News.
Further information:
NCC
Oxford Road
Manchester M1 7ED

EUROPEAN OSI CONFORMANCE TESTING FOR LAN-BASED PROTOCOLS

A major step has just been taken towards the creation of a European System equivalent Conformance testing of OSI products over Local Area Networks (LAN). Manufacturers, vendors and users in the European Community and EFTA can all look forward to standardised and accredited OSI testing for communications and telecommunications products.

ETCOM (European Testing for Office Certification for Office Manufacturing), enjoys official approval by the European Committee for IT Testing and Certification (ECITC) which comprises representatives from Europe's national standardisation bodies.

The main objective of ETCOM is to harmonise test methods, test tools used and test reports in order to achieve - between ETCOM testing laboratories - technical equivalence and mutual recognition of test reports issued by each laboratory.

ETCOM's Members are:

ACERLI (Association Francaise des Centres d'Essais pour les Réseaux Locaux Industriels, France)
EMUG (European MAP Users Group)
FABIT (Fabrimetal's Belgian Information Technology and Telecommunications Manufacturers Association)
Fraunhofer Institut - IITB (West Germany)
KEMA (NV tot Keuring van Elektronische Materialen, Netherlands)
SPAG (Standards Promotion & Application Group, Belgium)
Swedish Telecom, Teletest (Sweden)
The Networking Centre (Great Britain).

EUROPEAN OSI CONFORMANCE TESTING FOR LAN-BASED PROTOCOLS

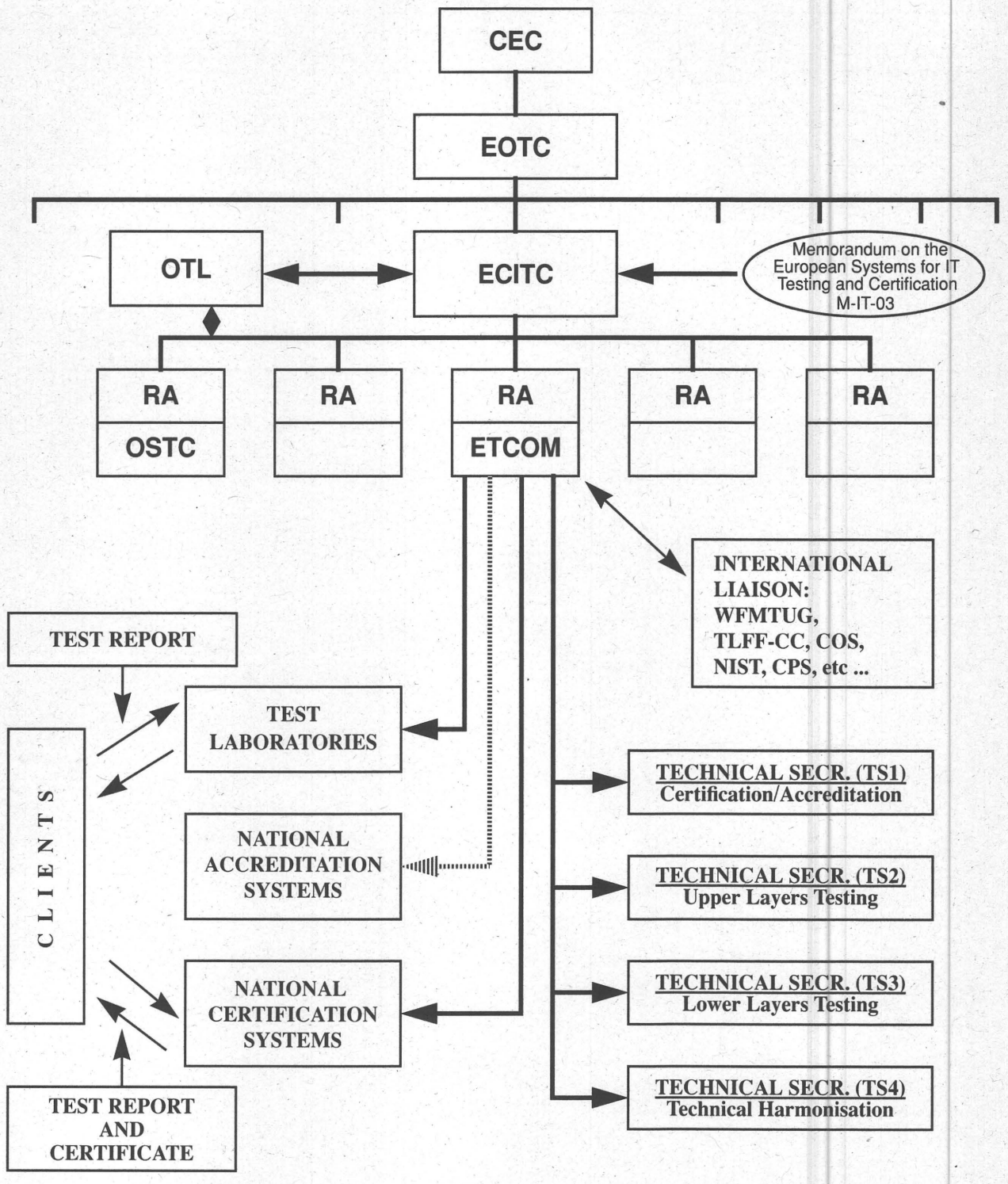

Fig.1: The European System for IT Testing and Certification and ETCOM Implementation

EUROPEAN OSI CONFORMANCE TESTING FOR LAN-BASED PROTOCOLS

Glossary of Terms used in Diagrams

CEN/CENELEC : European Committee for Standardisation / European Committee for Electrotechnical Standardisation
COS : Corporation for Open Systems International (US)
CPS : COS-POSI-SPAG Forum
ECITC : European Committee for Information Technology Testing & Certification
EOTC : European Organisation for Testing & Certification
NIST : National Institute for Science & Technology (US)
OSTC : Open Systems Testing Consortium
OTL : OSI Testing Liaison
POSI : Promoting Conference for OSI (Japan)
RA : Recognition Arrangement such as ETCOM, OSTC ...
TLFF-CC : Technical Level Feeders Forum Conformance & Certification Group
WFMTUG : World Federation of MAP/TOP User Groups

ETCOM's Eurolabs offer unique EN 45000 compliance:

Accredited test services provided by ETCOM's European laboratories are the first and sole accredited services that currently meet the EN 45001 & 45002 standard requirements. (The test reports provided by the various laboratories are not to be confused with Conformance Certificates.)

Three pilot test laboratories already provide fully European standard-compliant accredited services:- ACERLI which provides accredited test services for MMS (Manufacturing Message Specification), Internet, LLC1 (Logical Link Control Type 1) and Transport Class 4; SPAG which is accredited for MMS and DS and The Networking Centre which enjoys accredited status for MAC, LLC1 and Internet.

ETCOM's other Eurolabs are currently in the process of seeking accredited status. At present the Fraunhofer Institute - IITB in Germany offers customers a service for MMS, Kema in The Netherlands provides a Token Bus service as well as ACERLI in France and Teletest in Sweden has an Internet capability. All four hope to have attained status before the end of the year for these services.

The ETCOM agreement together with a similar arrangement for OSI testing of WAN-based protocols - promoted by the OSTC organisation (Open Systems Testing Consortium) - are a further demonstration of Europe's commitment to true open systems interconnectivity and that OSI products in the future will not only meet the international OSI standards but will be better placed to interwork with one another.

In Europe, ETCOM is represented on the newly established EWOS Expert Group on Conformance Testing (EWOS EGCT).

The diagrams show the logical links and various role players within the European IT Certification scheme as well as the ETCOM organisation and structure.

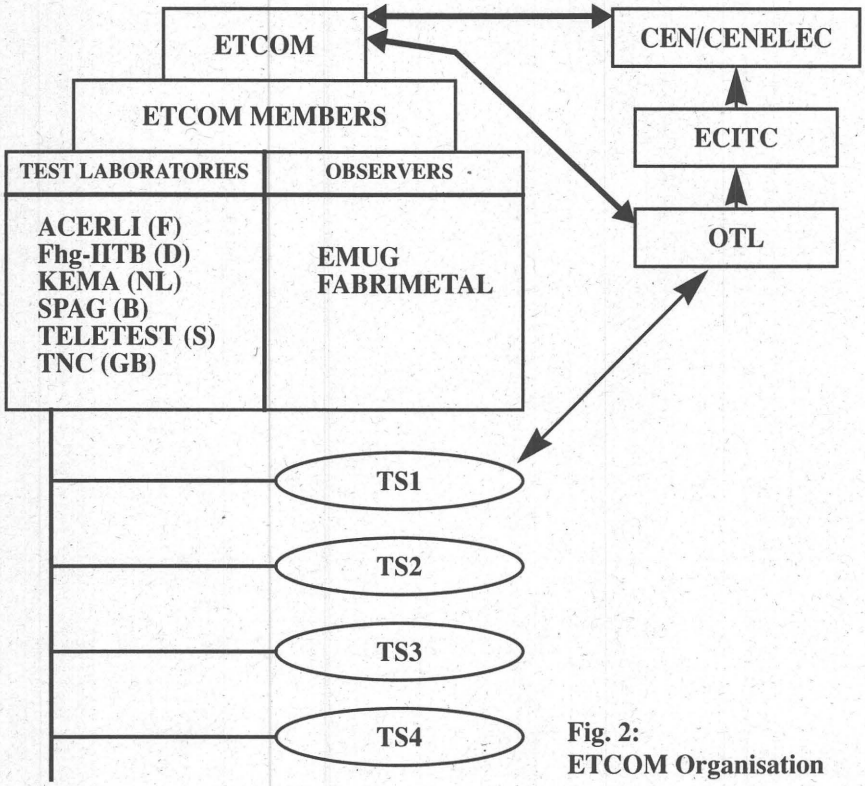

Fig. 2:
ETCOM Organisation

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149, Avenue Louise, Box 7
B-1050 Brussels

Tel: +32 2 535 0879
Fax: +32 2 537 2440

News from CEN/CENELEC

CEN Technical Committee on Medical Informatics.

The CEN Technical Board at its meeting on 23 March 1990, decided to create a new technical committee, TC 251, on medical informatics, to implement the mandate from the Commission and the European Free Trade Association (EFTA) on this topic. Additionally, a special project team has been set up to assess the standardisation needs, identify priorities and draft a plan for the work required. The deadline for the project team work is 15 December, 1990.

A second project team within the same framework, specifically on the 'Application of Open Systems Standards in the Medical Field', has been set up by the European Workshop for Open Systems (EWOS). The deadline is the 7th September 1990.

The secretariat of the Technical Committee (TC) was allocated to the Institut Belge de Normalisation (IBN), the Belgian CEN member. The first meeting took place in Brussels on 19 June 1990.

New CEN/CENELEC/European Telecommunications Standards Institute (ETSI) Memoranda.

The CEN/CENELEC/ETSI Information Technology Steering Committee (ITSTC) at its meeting in March adopted Memorandum M-IT-05, which is a Directory of Private Telecommunication Network Standards for working within an Integrated Services Digital Network (ISDN) environment.

At the same meeting, issue 2 of M-IT-04 was adopted, being the Directory of European standardisation requirements for Advance Manufacturing Technology and the programme for the development of standards.

CEN ad-hoc Meeting on Information Systems Engineering

On 2 October 1990, there will be an ad-hoc meeting in Brussels on the possible need for a European Forum for the standardisation of Information Systems Engineering (ISE). ISE includes the development and implementation of systems, the management of the development process, and the procurement of externally-supplied components for information systems. Activities are already in progress in the USA and Japan in this area: the meeting will discuss whether particular European needs (such as languages) makes activities within CEN desirable.

Requests for participation at the meeting should be passed through the CEN national members.

Project Team on Automatic Identification of Containers and Vehicles.

A CEN project team has been set up to help prepare a standardisation programme on the use of new technologies for automatic identification of containers and vehicles. The team is being asked to draft a work programme for the container part of the work and also to assist the CEN Central Secretariat in the preparation of a workshop on the whole programme, tentatively scheduled for 10-12 September 1990.

The deadline for the work of the project team is 16 July 1990.

Open Meeting on the Revision of Memoranda M-IT-01 and M-IT-02

As has been reported previously in IES News (see issue No. 24), the CEN/CENELEC/ETSI Memoranda M-IT-01 and 02 (being, respectively, the presentation of Functional Standards concept and the taxonomy and descriptions of the Functional Standards concept and the taxonomy and descriptions of the European OSI Functional Standards) are in the process of being aligned with the corresponding work in ISO/IEC, i.e. technical report TR 10000, to be published soon.

A project team within EWOS is currently producing a proposal on such an alignment. The proposal will be sent to the CEN/CENELEC members in August and will be discussed at an Open Meeting in Brussels on 24 October, 1990. Participation at the meeting should be arranged through the CEN/CENELEC national members or EWOS and ETSI.

European Conference on IT & T Conformance Testing and Certification.

On 13-15 June 1990, a conference on conformance testing and certification in the field of information technology and telecommunications took place in Brussels, arranged by CEN/CENELEC and ETSI and sponsored by the Commission and the EFTA secretariat.

There were sessions on: Background statements [by CEC and EFTA, the National Institute for Studies and Technology (NIST) and the Public Procurement Group]; Certification and type approval; Standardisation of Conformance testing specifications; Achievements of the Conformance Testing Services (CTS) Programme (all second day); Issues for the near future; Open debate. The proceedings can be obtained from CEN/CENELEC.

News from CEN/CENELEC

European Organisation for Testing and Certification. (EOTC)

After a long gestation period, the Memorandum of Understanding on the creation of an organisation to coordinate European activities within the field of conformity testing and certification was signed on 25 April, 1990, by CEN/CENELEC, the Commission and EFTA. EOTC will consist of a Council, with mainly coordinating tasks, Sectoral committees to oversee activities in different technical sectors (the one for IT is already in existence, see notes on the European Committee for IT Testing and Certification, ECITC 'News from CEN/CENELEC' IES News issues, 24 and 25). Specialised discipline-oriented committees (e.g. for quality of assurance, where the European Committee for Quality System Assessment and Certification, EQS has been established), and Agreement Groups (in ECITC and ISO terminology 'recognition arrangements').

CEN/CENELEC will be instrumental in setting up the organisation. The EOTC Council will have its first meeting by the end of 1990, and by 1 January 1993 the organisation will operate in its definitive form. Meanwhile, for the IT sector, ECITC will continue its present activities, and at its meeting in Stockholm in June 1990, it accepted a recognition arrangement for EMC testing in the IT area.

Bar Coding Standardisation.

As previously announced, CEN has established a Technical Committee on Bar coding, TC 225. Its secretariat has now been appointed (Nederlands Normalisatie-Institut, NNI), and its first meeting will take place in Brussels on 19-20 September, 1990. For more details, please contact the secretary, Mr. Peter Bessems, NNI (telephone +31 15 69 03 90; telex 3 81 44).

Security Aspects on Open Systems.

An ITSTC ad-hoc group on security aspects on Open Systems met at the end of March 1990, to start drafting a taxonomy of the standardisation work needed (as its main task). It found that two more meetings are needed before a full report to ITSTC can be made, but after its next meeting (July, 1990), a first draft taxonomy will be presented publicly for comments. It was obvious from the meeting that this is an extremely complex (and all-pervasive) topic, and that much work is needed simply to create a better awareness of its scope, implications and - not least - of where work is going on.

Please contact CEN/CENELEC for more information. The July documentation will be distributed to the CEN and CENELEC members and can be obtained from them.

Machine-readable Cards.

CEN TC 224 (Machine-readable cards, related devise interfaces and operations) had its first meeting on 5-6 February, 1990, where among other things the beginnings of a work programme was agreed. The second meeting took place in Brussels on 5-6 June 1990. Contributions from areas such as transportation, health care, education, access control and pay-TV are invited. Contact the secretary, Georges Papaioannou, at the Association Francaise de Normalisation (AFNOR) for more information, telephone: +33 1 42 91 55 55, telex: 611974.

Common Applications Environment

What started as a proposal for CEN to adopt as a European Prestandard (ENV) the X/Open Portability Guide has evolved into a project for the development of Functional Standards for a Common Applications Environment. It was agreed in January, 1990, that such standards are desirable from the CEN point of view; it has also been agreed to ask EWOS to draft proposals for such standards; and at the EWOS workshop in April 1990 creation of an EWOS Expert Group was proposed. A more detailed work programme in the form of a taxonomy is to be drafted and submitted to CEN for approval.

EWOS Project Teams.

The project team form is a way to draft standards proposals or other documents found necessary for the process of standardisation very quickly. Both EWOS and ETSI uses that form of work for specific items. Currently the following project teams have been or are being set up by EWOS:

- Character repertoires and their coding
- Alignment with Memorandum M-IT-01 and 02 with ISO/IEC TR 10000
- Review of European Conformance test suites to determine applicability to ENV 41 102 (connection-mode transport service over connectionless-mode network service in Carrier Sense Multiple Access/Collision Detection/Local Area Networks - CSMA/CD/LAN end system).
- Framework for implementation of Open Systems
- OSI conformance testing methodology and procedures in Europe
- Investigation of the need for functional standardisation activity in the field of library applications

- Study and investigation of problems related to the standardisation and relevance of Open System standards in medical informatics, specifically medical data interchange.

Adopted new European Prestandards.

The following new ENVs have been adopted but have not yet been published:

- ENV 40 003, Information Processing in Automation - Computer Integrated Manufacturing (CIM) - CIM System Architecture Framework for Modelling.

- ENV 41 206, Information systems interconnection - File transfer, access and management - Positional file transfer (flat)

- ENV 41 207, Information systems interconnection - File transfer, access and management - Positional file access (flat)

- ENV 41 208, Information systems interconnection - Basic class virtual terminal (VT) - S-mode forms; parts 1-3 covering the VT service, the VT protocol check list, and the underlying layers check list.

- ENV 41 209, Information systems interconnection - Basic class virtual terminal (VT) - Common control objects.

- ENV 41 208 will be amended according to CEN/CENELEC member comments in July before publication.

European Prestandards proposed but unapproved.

The following prENVs did not receive enough support in the CEN/CENELEC formal vote to be adopted.

- prENV 41 111, Information systems interconnection - ISDN - Provision of OSI connection-mode transport service and OSI connection-mode network service by using an ISDN circuit-mode 64 kbit/s unrestricted bearer service - Permanent case.

- prENV 41 112, Information systems interconnection - ISDN - Provision of OSI connection-mode transport service and OSI connection-mode network service by using an ISDN circuit-mode 64 kbit/s unrestricted bearer service - Demand case.

ETSI - who elaborated the standards proposals - has been asked to arrange a resolution and voting meeting to try to overcome the objections raised.

News from CEN/CENELEC

Published new European Prestandards.

The following new ENVs have been published:

- ENV 41 509, Information systems interconnection - Office Document Architecture (ODA) - Document Application Profile - Processable and formatted documents - Basic character content.

- ENV 41 510, Information systems interconnection - Office Document Architecture (ODA) - Document Application Profile - Processable and formatted documents - Extended mixed mode.

ENV 41 511, Information systems interconnection - Office Document Architecture (ODA) - Document Application Profile - Layout independent documents - Simple messaging profile.

ENV transformed to EN

The following European Prestandard was adopted as a European Standard (EN) after some revision.

- EN 41 102, Information systems interconnection - Local Area Networks (LAN) - Provision of the OSI connection-mode transport service using the OSI connectionless-mode network service in an end system attached to a CSMA/CD LAN.

The standard will be amended in July according to CEN/CENELEC member comments before publication.

Proposed new European Prestandards.

The following proposals will be voted upon at a meeting of the CEN/CENELEC working group on Character sets and their coding, on 13-15 June:

- prENV 41 503, Information systems interconnection - European graphic character repertoires and their coding (revision of existing ENV).

- prENV 41 504, Information systems interconnection - Character repertoire and coding for interworking with Telex services.

- prENV 41 508, Information systems interconnection - East European graphic character repertoires and their coding.

In addition, prENV 41 505 (Information systems interconnection - Graphic character repertoire and coding for line drawing) is under ballot (deadline 25 July) in a revised form. It was already adopted but its publication was held up - meanwhile developments in ISO made this revision appropriate.

Further information from:

CEN/CENELEC
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COSINE NEWS

Cooperation for Open systems Interconnection Networking in Europe.

COSINE News intends to cover viewpoints of all parties with interest in COSINE.

EARN/RARE Joint Networking Conference 1990

EARN (the European Academic Research Network and RARE (Réseaux Associés pour la Recherche Européenne) held a three day Joint Networking Conference (JNC) on computer networking for research in Europe on 15- 17 May 1990 in Killarney, Ireland.

The JNC took place at an important and crucial time in the development of research networking in Europe because the COSINE implementation phase had started on 1 January 1990 and the Pilot IXI (International X.25 Infrastructure) Backbone Service began operation on 20 April 1990 (Inaugurated 8 June, see p 1). Furthermore, RIPE (Réseaux IP Européene) was coordinating the development of TCP/IP networking in Europe and the first results of the EARN OSI Transition Programme were becoming available.

The JNC provided a forum where policies underlying these developments were discussed and reviewed giving networking specialists an opportunity to update their knowledge on technical developments, as well as allowing network service providers to outline their future plans.

The plenary session

The initial morning session was the conference's most important event and was attended by all 380 participants. It provided a very good overview of the state-of-mind of European networkers. Topics such as how Research networking in Europe was influenced by many competing interests, including the needs of researchers; the use of standards; industrial development; CEC policies; national policy interests and the telecommunications regulatory environment as well as failures and achievements were also discussed. It was recognised that former approaches had been mostly technology driven and that the current thinking was to be more user oriented by adopting a marketing approach and looking at the user as a customer. Future networking would have to pay greater attention to user training, together with the provision of documentation and user support. Competition in this field should be encouraged, avoiding conflict between standards and networks. It was observed that there existed a significant number of redundancies of installed network links in Europe and that pooling all lines used by the research networking organisations would instantaneously increase the bandwidth available in Europe to the benefit of all.

Towards a European Backbone

Nearly all the existing national and international research networks were planning or implementing some level of transition to the use of ISO/OSI protocols. The RARE community already used packet switched networks conforming mainly to the X.25 standard and EARN used a private network of leased lines running the EARN specific communication protocols. Subsequent to an initiative by the Commission, the IXI project (International X.25 Infrastructure) within COSINE provided Europe-wide X.25 connectivity based on leased-lines, whilst also interworking with public data networks.

The use of TCP/IP protocols to support workstations based networking on campuses had resulted in increasing pressure for the development of national and international TCP/IP networks. Many universities had already installed local area networks (LANs) based on the TCP/IP standards of which many were interconnected by leased lines on a bilateral basis. The RIPE initiative was especially created to coordinate these activities and

technically speaking, EARN could run its protocols over TCP/IP or X.25 lines, while TCP/IP could run over X.25 protocols. However, there was agreement that the most desirable outcome would be to have a single backbone allowing the use of different protocols in parallel. There was also a growing feeling that TCP/IP would coexist for some time with the OSI protocols, even if it did not conform to ISO standards. This would not however, invalidate commitment to OSI: the RARE community already used OSI conformant products and EARN was committed to the OSI transition.

The CEC, Eastern Europe and the US

Two unequal partners for European academic networking were also a focus of great interest: the US and Eastern European countries. There were speakers and a substantial audience from both areas reflecting the mutual interests of the three communities. In the US, plans for a National Research and Education Network (NREN) providing gigabit performance to researchers across the US had been endorsed by the Bush Administration, and legislation introduced in both Houses of Congress. US speakers reported on the existing network structures and the huge financial efforts to create a high performance backbone, as well as on the important policy and organisational issues. Participants from the US defended the TCP/IP point of view and invited Europeans to join the IETF (Internet Engineering Task Force). Their principal concern was to create a global TCP/IP connectivity rather than connectivity between the two continents. The discussion concerning "transatlantic fatpipes" focused on strategies on transatlantic cooperation and listed existing or planned efforts to provide cost effective channels by pooling resources without making the choice of protocols an issue.

A special discussion session called "Communicating with Eastern Europe" noted that there were almost no data networks in existence, but where some experimental networks existed, they were incompatible from country to country. Restrictions on exports were deemed to be the root cause why Eastern European countries had invested unnecessarily in the redundant development of software-and-hardware technologies.

West Germany's DFN was providing assistance for the construction of an X.25 network in East Germany. Czechoslovakia (a recent member of RARE) had managed to interconnect their network with Eunet, and EARN, with its contacts to many different sites in Eastern Europe, was also hoping to have links in the very near future. Hungary, a long standing member of RARE, would soon be followed by Poland. The debate concluded that Western Europe should support an easy integration into existing structures.

The future role of network interworking in Europe.

The conference topics in Killarney focused mainly on the existing or planned European infrastructures for the academic world. The CEC project for the support of libraries illustrated another theme that could become one of the important driving forces for computer networks in the area of open systems applications for the non-research domain. The discussion covered plans for ordering commercial goods via X.400 using the EDIFACT standard which could result in millions of messages transported across Europe. Structures to support these high volume applications with the required level of quality did not yet exist. The CEC intended to build on the efforts and experiences of the research community. The actual academic network services were very promising, but they would have to show that they could be enhanced to the degree of volume and complexity required.

Other topics

There were other sessions of important interest. FDDI (Fibre Distributed Data Interface), was a new emerging international standard for high speed networks. Other interesting pilot projects such as X.500, IXI and COSINE information services were also presented and a tutorial on lower layer problems was also held. Much work was still to be done on the upper layers. Security was one example. Another was new methods for distributed communication to support groups of people to work together even when geographically separated. Standards and profiles in general (and governmental strategies in their promotion) would play an important role. GOSIP (Governmental OSI Profile), in both the US and the UK, was the subject of another presentation.

Conclusion

Joining two large conferences was a difficult task. It resulted in a conference which was markedly different than RARE's 1989 conference and the same applies to EARN. The mix of subjects and the introduction of parallel streams was regarded as successful.

Provision of X.25 Infrastructure (IXI) COSINE S1

In the autumn of 1988, the COSINE Policy Group requested RARE to draw up a plan to establish a pilot X.25 backbone network to interconnect the public packet switching networks and the private research networks across Europe. The corresponding Pilot IXI (International X.25 Infrastructure) Service is established by PTT Telecom (the Netherlands PTT) under contract to the CEC who are handling this activity through the Esprit programme on behalf of the COSINE participants.

The requirements can be summarised as the provision of X.25 network services for the interconnection of private research networks and public data networks (PSPDN) in the COSINE countries. The CCITT recommendations for X.25 packet switching of 1980 and 1984 had to be supported at the interfaces to the connecting networks operating according to these different versions.

Following successful acceptance testing, which included performance tests and tests of conformance to CCITT recommendations, the IXI Pilot operation started in late April 1990.

The following private research networks are currently connected:

ACONET (Austria)
RES-ULB (Belgium)
CEC (Belgium)
CIRCE (France)
ARIADNE (Greece)
DFN (Germany)
HEANET (Ireland)
GARR (Italy)
JRC/Ispra (Italy)
EARN (Netherlands)
NIKHEF/HEPNET (Netherlands)
SURFnet (Netherlands)
RCCN (Portugal)
ARTIX (Spain)
SWITCH (Switzerland)
JANET (UK)
NORDUNET (Denmark, Finland, Iceland, Norway and Sweden)
CERN (Switzerland)

as well as the Public Networks:

DATAPAC (Denmark)
DCS (Belgium)
DN1 (Netherlands)
Telepac (Portugal)

Performance

There is an ongoing project to evaluate the analysed IXI Service. This can be subdivided into three categories of measurements that are being analysed. First, the availability of the service is monitored by establishing X.25 connections from test equipment located in several networks to Echo Points within the IXI Network, and via IXI to other test equipment in other networks.

Second, the performance of the network is monitored. Measurements of call set-up and breakdown times are made in conjunction with the availability monitoring.

Third, traffic statistics are collected for the purpose of network capacity planning.

Accessibility and use

Use of the Pilot IXI Service is restricted to the COSINE community of researchers, including industrial research departments as well as governmental agencies for their programmes concerned with research and development. The traffic carried by the IXI networks is by contract non-commercial.

The long-term aim for the IXI Pilot Project is to provide a high-bandwidth cost-effective communications path between all users.

Steps will be taken to make sure that an IXI service continues for the full duration of the COSINE Implementation Phase and beyond.

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The IMPACT (Information Market Policy Actions) Programme

Much effort has been expended by the Commission over many years to stimulate and support the European database sector. Expanding from the classical scientific, technical and medical subject areas, the IMPACT Programme now covers a wide range of topics, and some 20 large-scale demonstration projects are now under way in Phase I of this programme. At a recent meeting of the Senior Officials Advisory Committee (SOAC) it was noted that there was insufficient awareness among the Community at large of Commission activities in relation to the information market. As many of the projects are of interest to readers of IES News, we present below some details of the most pertinent items.

CARTE INFO - *A network of intelligent multimedia access points for information services for European enterprises*

The project will develop in two countries (France and the Netherlands) the concept of central multimedia information access points. These access points will offer SMEs and the professions an on-line catalogue of relevant information services, an intelligent interface and a centralised means of payment. They will offer both ASCII and videotex modes of access and gateways to different hosts, either directly or combined with assistance in formulating queries, in the choice of databases and in the strategy of searching. A number of ancillary functions are foreseen, such as electronic mail (X.400), document ordering, a reservations service for conferences, etc., connection to intermediary or consultancy services, a detailed statistical and billing service.

MITI - *Intelligent Multilingual Interface Systems to European Databases*

The MITI project will develop an intelligent multilingual (English, French, German, Spanish) interface which can be installed on a personal computer. It will enable untrained users to have access to different databases on a number of hosts in a uniform way, using natural language. The interface design will offer various levels of help, including guidance on database selection, automatic construction of Boolean search statements, transparent connection to hosts, and search guidance through knowledge-based rules. The interface will be able to handle queries about any subject but will provide its most intelligent help on environmental and technological queries.

The development will be carried out in a UNIX environment, the final environment to be decided at a later stage in the project.

DISNET - *Domain-independent Intelligent Information Services Network Interface*

DISNET will provide an intelligent interface for access to electronic information through a number of related modules of which some will be implemented locally, e.g. on a PC and others on a host or network node. It will run DOS, OS 2 and UNIX and will provide a graphics interface using WIMPS. Domain specific knowledge bases will be built by the partners around a central interface offering common functions. Through the interconnection of the networks and hosts using the DISNET software the result will be to offer both a wide range of services via a single access point and also integrated artificial intelligence applicable to each of the specialised information services made available. The applications covered during the pilot project will be agriculture and microbiology.

ATIS - *AIT Touring Information System*

The central idea of ATIS, proposed in cooperation with AIT, an association of large automobile clubs in Europe, is to overcome current barriers to effective information exchange (language, organisational, standards, legal and commercial) by the use of electronic media. The project therefore has as its principal objective a contribution towards the creation of common standards for tourist information and its exchange.

In the course of the project, information content and format are defined in a phase of data modelling. Message development for the exchange of this data is addressed in a further phase. Throughout these phases active participation and cooperation with international standardisation organisations, such as ISO TC154 SC5 and EDIFACT BOARD MD5 Tourism and Leisure committees are envisaged.

During the initial phase of the project data collection is focussed on France to test the design for the data structure and the applied technologies. In the course of the project geographic coverage is to be extended to at least six further European countries.

ATIS is a neutral information system covering the whole spectrum of tourist

The IMPACT (Information Market Policy Actions) Programme

information needs. Information is language independent, structured, encoded and distributed using EDIFACT syntax. Open Systems Interconnection (OSI) standards using X.400 are utilised for transmission of information between parties.

Active cooperation between ATIS and the ULYSSES project is agreed to avoid duplication of effort.

ITDNS - *Integrated Tour Operating Digital Network Service*

The purpose of the project is to demonstrate advanced technical facilities for the production and use of electronic catalogues composed by Tour Operators and disseminated to travel agents through the emerging ISDN network.

These catalogues will replace or complement current paper catalogues and will contain product descriptions, rates and photographs of tourist spots, hotels, various available services or activities and means of transport.

The ITDNS project provides a communication tool between Tour Operators and their distributors. It will also offer training facilities for travel agencies' staff.

The data will include digitised colour images linked to recorded voice commentaries. They will be directly captured, digitised and recorded locally on a microcomputer with a hard disk and downloaded to the ITDNS central database.

To achieve effective interoperability throughout Europe, international accepted standards such as EDIFACT for data structuring, STUTEL for file transfer, and ADCT/ISO for image coding and storage will be employed.

Due to the current limited availability of ISDN services the pilot implementation of the system will cover France, Germany and the United Kingdom. The service will involve 6 Tour Operators and 60 distributors with a representative cover throughout the three Member States.

ULYSSES

The objective of the Ulysses project is to combine different national tourist information projects into a European system. The service will gather information from a variety of sources and deliver it to professionals and the public in an electronic form.

The three nationally based projects aim at different market needs. In Portugal emphasis is placed on data collection and creation of infrastructure for the delivery of tourist information. The Irish component of the project involves the development of reservation facilities and public access terminals, whilst the French contribution will concern standards for data presentation and interfaces to other systems.

Standards play an important role in the project. Active cooperation and participation in the development and application of ISO/EDIFACT standards for tourism and leisure are envisaged. To this end collaboration with the ATIS project has been established to realise the possibilities of synergy.

Access to existing information and reservation facilities will be offered through the development of a switching facility.

European Standards - *Harmonisation and Structure*

The project will develop a Document Type Definition (DTD) for use in publishing standards data in bibliographic and/or full text form. It will use Standard Generalised Markup Language and be based on the existing DTD already published by ISO, enhanced by the ability to mix text, mathematical formulae, tables, graphics, images, etc. the development, using a test file of standards in the construction field, will require the cooperation of ISO and all National Standards Bodies concerned. The resulting definition will enable data to be exchanged between different producers and distributors as well as facilitating the economic production of a range of information products from the same source. It will also prepare the way towards a future integrated standards database management system.

OSI Pilot Demonstration Project between Library Networks in Europe for Interlending Services

The three interlending networks of the partners (PICA, Foundation Centre for Library Automation of The Netherlands, LASER of the U.K. and the Ministere de l'Education Nationale of France) will be linked via the international X.25 service and will provide international loan message and identification services. The international loan message service will be based on the OSI interlibrary loan (ILL) and X.400 message handling protocols. This message service will be interfaced to the existing national ILL services. Identification services to enable the user to search computerised union catalogues with different searching

The IMPACT (Information Market Policy Actions) Programme

mechanisms and which provide information on the ILL services, and sources of materials within the U.K., the Netherlands and France, are also planned ultimately.

In addition, a practical technical objective will be realisation of an operational Front-End processor (FEP) consisting of hardware and software which takes care of communication and messaging between different networks using OSI communication protocols. This FEP will exchange data with the own network using a simple proprietary protocol, which will be described and specified in such a way that other networks may interface their computer systems to the FEP and in doing so may easily become part of the international interlibrary lending network.

Other projects make use of CD-ROM and other optical storage media for the dissemination of information to a restricted number of users, but some of these may be networked at a later stage.

Further details of these demonstration projects with names and addresses of contact points etc. can be obtained from:

CEC, DG XIII-B
Jean Monnet Building
L-2920 Luxembourg

Pan-European Interconnection: the Role of the European Electronic Mail Association (EEMA).

Existing European electronic messaging suffers from a lack of connectivity between different networks and different services. It is not unusual for companies to use one internal network, and to use a separate network, for external messaging.

More often than not, the internal and external networks are incompatible, which means that the individual user will often have to store and edit a message received via one network before he can forward it via the other.

Furthermore, most of the available public messaging services tend to be limited, for historical reasons, to national boundaries. To make matters worse, these individual national services are rarely interconnected: whenever one user needs to deal on an international basis with other users in different countries, it is not usual to require mailboxes with three, four, or more, different 'national' messaging systems.

Such problems have lessened the attraction of electronic messaging as a universal means of business communication. Lacking a realistic critical mass of users, email has languished, despite its obvious potential. All that is missing, however, is connectivity between the different service providers, connectivity between the internal networks of large corporations, and connectivity between the local area networks and the messaging services.

Problems.

Physical interconnecting between the different networks is, however only half of the solution; and, indeed, the simpler half - we already have the required physical mechanisms held within the CCITT X.400 Message Handling recommendations. The larger problem will be in the commercial integration of the different networks. For example, if a message from one side of Europe passes through several service provider networks on route to the other side of Europe, how is the charge to the user to be calculated? And if the message fails to reach its destination, how can the user possibly be expected to know which of the service providers is responsible?

Another interesting question is what will happen to the existing service providers if users are theoretically able to connect direct to their destinations? Does pan-European interconnection spell the end for the existing service providers? The answer is emphatically no - indeed, the services available from service providers are most likely to increase dramatically with the increased use of email. One obvious example is the international mailshot. If a Spanish company wishes to mailshot 500 outlets in Sweden, it would, without the service providers, be faced with 500 international distribution bills. With the service providers, however, it can send a single message to Sweden for the intermediary to distribute at national rather than international rates.

Another service would be a form of security preverification. If external access to the company network is limited to entry from a service provider, then the very store-and-forward nature of such electronic messaging would enable the intermediary to use automatic utilities to seek and find any bombs or

viruses hidden within the message before they can get to the recipient's internal network.

A final example could be a financial clearing service between large companies doing frequent trade between themselves. In current banking practices, if one company owes money to, and is owed money by, another company, then each company sends a cheque for the relevant amount through their banks - and both companies lose interest on revenues during the banks' cheque clearing process. An intermediary service provider, however, could simply monitor the accounts of both companies and settle the difference between the two at the end of each month.

The role of EEMA.

EEMA has produced a Declaration of Support (DoS) for the pan-European Interconnection of Electronic Messaging Handling Systems and Service based on CCITT recommendations X.400, X.500 and F.400.

EEMA has also prepared a document entitled Concept for a Memorandum of Understanding for the Specification, Development and Implementation of pan-European Interconnection of Electronic Message Handling Systems and Services. This Concept document has been drawn up because not all those who are invited to sign the Declaration of Support will be familiar with either the term Memorandum of Understanding, nor the typical content or structure of such a document.

The Concept document is modelled on other MoUs, and has been deliberately drafted to be relevant to the present topic. Nevertheless, it must be clearly understood that the Concept document is merely for illustration. In particular, signature of the Declaration of Support does not imply that the signatory supports or agrees with any matters set out in the Concept document.

Pan-European Interconnection: the Role of the European Electronic Mail Association (EEMA).

The DoS sets out the case for the interconnection of European messaging systems, pointing out that a cohesive approach will attract the critical mass of users required for a truly effective pan-European integrated system. It then goes on to specify seven guiding principles that should be embodied as the primary methodology for the implementation of interconnection. These are:

- Service aspects and functionality (to be based on CCITT F.400)

- Access conditions and interconnection arrangements (including the universal right, subject to national laws, to connect to the integrated service).

- Functional standards and conformance testing (so that all implementations conform to a single set of functional standards).

- Accounting and charging (so that users receive a single understandable bill regardless of the number of intermediary service providers used)

- Quality of Service (so that a user may have a single point of reference for any problems).

- Directory services (to provide a readily accessible and easily used directory of users)

- Security, authentication and privacy (to ensure that security in existing systems is not compromised by interconnection).

Further Information:

Copies of the Declaration of Support, and the concept document for a Memorandum of Understanding for the Specification, Development and Implementation of pan-European Interconnection of Electronic Message Handling Systems and Services, as well as further information on EEMA itself may be obtained from:

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IMPORTANT REMINDER

Please do not forget to reserve 12 - 15 November 1990 for the ESPRIT Technical Week, which will be held in Brussels as usual.

Details will be published in the next issue of IES News.

TELECOMMUNICATIONS AND METEOROLOGY

THE GLOBAL TELECOMMUNICATION SYSTEM (GTS) OF THE WORLD WEATHER WATCH SYSTEM OF THE WORLD METEOROLOGICAL ORGANISATION (WMO)

Introduction

The weather has a profound influence on man and affects many of the activities, his safety, and often, his survival. Each nation of the world, therefore, shares a common interest in monitoring weather phenomena and, moreover, in forecasting weather conditions. It is, therefore, not surprising that the development of operational meteorology has gone hand in hand with the development of telecommunications.

The World Weather Watch

The World Weather Watch (WWW) is an integrated global system established by the World Meteorlogical Organisation (WMO) and operated by Member countries for the collection, analysis and distribution of weather patterns and other environmental information. WWW pays particular attention to the standardisation of collecting and measuring methods and techniques, the development of common telecommunication procedures, and the presentation of collected data and processed information in a manner which is easily understood by all, regardless of language.

The WWW is made up of three basic components:

a. the Global Observing System (GOS) comprises facilities for the observation and measurement on land, sea, air and in outer space.
b. Global Telecommunications System (GTS) rapidly exchanges the collected information as well as analysed and processed information, including forecasts, produced by the third main component;
c. Global Data-processing System (GDS) a network of world and regional computerised data-processing centres.

The Global Telecommunication System

All GTS components must operate well if the WWW collections and products are to be processed and disseminated to national Services in forms suitable for application. At present, GTS conveys over 15 million characters of alpha numeric data and 2,000 weather charts daily, operating with a degree of speed, and efficiency not thought possible by its developers in the early 1960s.

Structure of the GTS

GTS is an integrated system of point-to-point circuits, meteorological communication centres, radio broadcast and satellite-based communication systems, organised in three levels:

- The Main Telecommunication Network (MTN);
- The Regional Meteorological Telecommunication networks;(RTMNS)
- The national meteorological telecommunication networks; (NMTN)

GTS was developed, in compliance with the open systems interconnection (OSI) architecture and by use of the related standard techniques and protocols developed by ISO and CCITT, to ensure the optimum and cost-effective use of improved new technology and the flexible and effecient operation of the system.

The traffic exchanged on the GTS can be broadly divided into two groups:

- Collected data, from over 9,000 land stations, 7,000 Weatherships some 3,000 commercial aircraft and several hundred buoys, and also from meteorological radar stations and geostationary and polar-orbiting meteorological satellites. Although the WMO secretariat has no statistics on the volume of data exchanged over GTS circuits, it is considered that all the circuits are used at full capacity to exchange data.

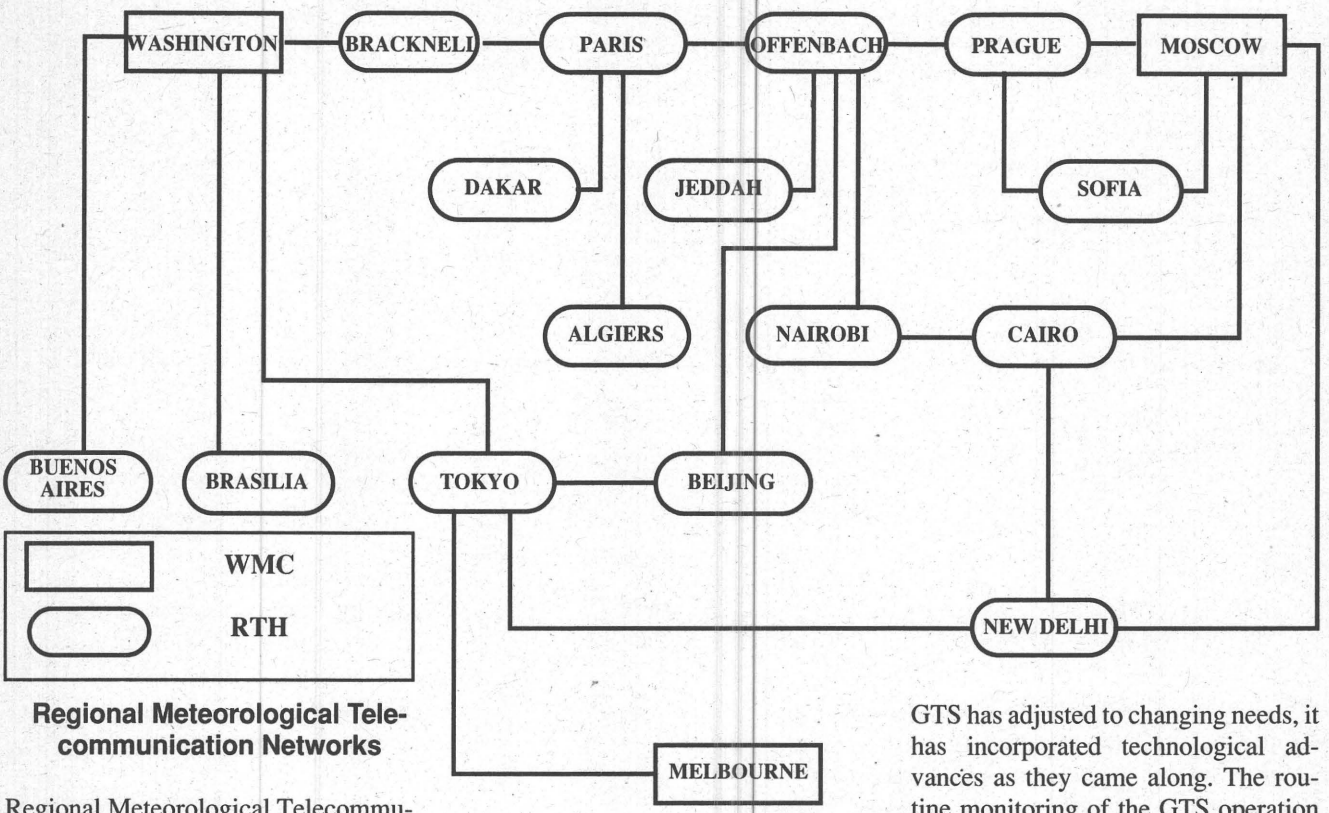
- Processed information produced by World and Regional/Specialised Meteorological Centres responsible for weather analysis and forecasting at the global and regional level.

An ever increasing volume of observational data and processed information is transmitted on the GTS in special coded formats according to a system of character oriented codes and bit oriented codes developed by WMO.

The Main Telecommunication Network

The Main Telecommunication Network (MTN), see diagram, is the GTS core network comprising 22 point-to-point dedicated circuits leased to National Telecommunications Authorities connecting the three World Meteorological Centres (WMCs) and 15 designated Regional Telecommunication Hubs (RTHs). MTN is a system of computer-based nodes interconnected by medium/high-speed data links using advanced communication techniques and protocols standardised by ISO and CCITT. Seventeen circuits are used for the exchange of data at speeds higher than 1200 bits/s (mainly 9600 bit/s) and/or facsimile. The remainder operate at low speed.

TELECOMMUNICATIONS AND METEOROLOGY



Regional Meteorological Telecommunication Networks

Regional Meteorological Telecommunication Networks are based in six WMO Regions (i.e. Africa, Asia, South America, North and Central America, South West Pacific and Europe) consist of an integrated system of communication means interconnecting RTH's, Regional/Specialised Meteorological Centres and National Meteorological Centres in each Region. The present plan of the networks comprise 259 circuits interconnecting 30 RTHs and 150 National Meteorological Centres or centres with similar functions. The RMTNs also include 21 radio teleprinter broadcasts and 26 radio facsimile broadcasts to disseminate meteorological information as shown in the diagram. National Meteorological Telecommunication Networks

The National Meteorological Telecommunication Networks (NMTN) enable National Meteorological Centres to collect data receive and distribute meteorological information on a national level. Several types of telecommunication means are implemented for this purpose, depending on national requirements and possibilities. They cover a broad spectrum of technologies, from radio communication in Higher Frequency (HF) to advanced computerised data communications.

Special satellite-based data collection and dissemination systems with global and multi-regional coverage are playing an increasing role within WWW at the global, regional and national levels of the GTS. This is particularly true in those geographical areas where conventional telecommunications cannot provide the cost-effective services required.

Conclusion

1988 marked the twenty-fifth anniversary of the WWW. Since 1963, significant advances have been made in its evolution and implementation, and GTS has adjusted to changing needs, it has incorporated technological advances as they came along. The routine monitoring of the GTS operation revealed that the level of implementation of the GTS is not evenly distributed around the world. There is still a considerable way to go in realising the full potential of the system and in fully meeting the requirements for exchanging the ever increasing volume of observational data from satellite and processed information from highly sophisticated numerical analysis and prediction models run on super computers. But it is clear that there have been astounding developments in the past quarter century and as there is no reason to believe that we are near the limits of improvement in the system, WMO Member countries stand ready and willing to co-operate to the greatest possible extent, for the good of all.

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World Meteorological Organisation
Geneva
Switzerland

A CRITICAL ASSESSMENT OF TELEMATICS: TECHNOLOGIES, PROMISES, AND REALITY.

We bring below some excerpts from a paper presented at the Eighth Conference of the International Telecommunications Society, Venice, March 1990. The full text can be obtained from the author and will be published in the Proceedings of the Conference in due course.

In the history of technology, the world has seldom had such high expectations, but encountered so many difficulties as in the case of telematics. This was welcomed as the second - or was it the third wave - of the "new information age". The full array of new techniques and social consequences of the information revolution had not yet been absorbed, when there was a further shock, produced by the interlinking of telecommunications with data processing and data services industries, giving rise to telematics.

The financial sector, car and travel industries, followed by telecommunication and other public administrations and private information services, as well as industries both large and small, rapidly adopted the new technology. Telematics penetrated the office and home, linked up with existing telephone and television facilities, and taking advantage of the personal computer which had just become widely used, telematics invaded the world.

Inspite of some undeniable achievements, an objective analysis discloses a number of pitfalls and problems which should be put into perspective. These are related to technology and market trends and fashions, to commercial and political struggle related to strategies which have nothing to do with IT, and to the simple evidence that effective communications need standards, which means worldwide agreements - a difficult thing in itself.

Recognising this reality, and in view of our role - or rather our new role - as teachers in these matters at the university level, we have created a new curriculum which specifically addresses the problems of technology and its acceptance or mastering by homo sapiens in the field of telematics. Called "Telematics and Organisation", this one-year postgraduate course is specially designed for adults who are in charge of the new information and communication technologies, in the public or private sectors: This new curriculum builds upon the experience we have gained over the last ten years while conducting courses in the very successful "Informatics and Human Sciences" program at the University of Brussels.

It may be suggested that a common European Standards Institute, grouping all interested parties under one roof - and with one work programme - might be a more effective answer to the European problems in those areas.

"LICENCE SPECIALE EN TELEMATIQUE ET ORGANISATION"

The University of Brussels ("Université Libre de Bruxelles") took a decisive and challenging new step about ten years ago, when it created an interdisciplinary curriculum under the name "Informatique et Sciences Humaines"; this 2 or 4 year curriculum is specially aimed at adults, the lectures being given in the evenings and Saturday mornings. It has turned out to be a very successful experience, and remains today quite an original one*.

Based on this approach, and in view of the set of complex new situations created by the development of telematics, as described above, it was decided to create a new curriculum, in the same spirit as the one presented above, under the name "Telematique et Organisation." This is a one-year post-graduate programme, which is again specifically organised for adults, the aim being to address those persons who are in charge of information processing, organisation communication and data communication, in the various public and private sectors of activity. It was felt in this particular case that the interdisciplinary approach would be of specially great value, in view of the numerous aspects which we feel are hindering the harmonious development of telematics techniques and systems. We have tried to show that the large number of standards, organisations, initiatives and products is creating a situation where more bad than good may be done, if the people involved are not fully aware of - and possibly able to influence - all the elements which constitute the telematics revolution.

** Reference 1. L. WILKIN, P. VAN BINST, Informatics and Human Sciences: A Working Synergy. Information Processing 89, Proceedings of the IFIP World Computer Congress, G.X. Ritter (Editor), Amsterdam: Elsevier Science Publishers, p415 et seq.*

Paul VAN BINST
Université Libre de Bruxelles
Belgium.

EuroKom News

Personal Computer Utility (PCU) - A New Utility for EuroKom Users.

A new software, PCU, was formally introduced during May and has provoked very favourable reaction from users. PCU is further evidence of EuroKom's continuing commitment to improving services. Up to the present, access using a PC necessitated the choice between public domain packages, such as Kermit, or commercial products such as Crosstalk. The former have the advantage of being free, but they are generally poorly documented and supported. The latter are better documented and supported, but are relatively expensive. In both cases the packages are multipurpose: the user still needs to configure them for communicating with EuroKom and to 'train' them to make the connection. They were developed without any reference to, or knowledge of the EuroKom environment.

The user thus has to study the technical requirements posed by the communications environment of EuroKom, and then has to examine the facilities provided with his local software, and attempt to match the two.

The user also has to struggle with two different sets of command structures and menus. It was to deal with these problems - and the inconvenience - that EuroKom developed the PCU. The software supplements the facilities offered by the Communications Package - apart from automating the log-on procedures, it offers a friendly, menu-driven interface to EuroKom Mail/Conferencing, provides a smooth and effortless method of file transfer, and enables text editing either online or offline. When used with the EuroKom service, PCU offers many advantages over other packages.

PCU is distributed free of charge to EuroKom users and is currently available for use with Kermit communications software package running on a stand alone PC. Special versions of the software are also available for users in the CEC.

For further information on PCU, contact EuroKom at either address below.

The Too Long Line Problem.

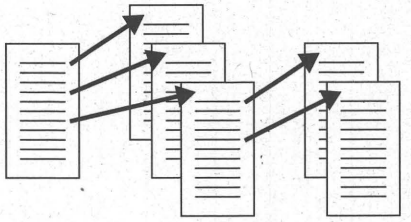
The "Warning: too long line" which has caused many user problems has now been resolved. The default setting for the Mail/Conferencing service has been reset to local-echo. This will not automatically effect your own settings, so, if you now want to use local-echo mode for this service, you should ensure that your setup selection is set to local-echo. If you do not use the menu system, your echo mode will default to local-echo.

Introducing UNIX NEWS

NEWS is a bulletin board service that allows you to keep in touch with the worldwide community of Unix users. You can share information, discuss problems, and keep yourself abreast of developing issues in the area of Information Technology.

You can make your own contributions (called newsitems) to NEWS, and you can read and comment on the contributions made by other users.

Newsitems with similar topics are grouped together in categories called newsgroups. Once you access NEWS, you can select the newsgroup you want, and then browse through the newsitems in that newsgroup. You can move between different newsgroups in much the same way that you can move from one section of a newspaper to another. NEWS is a public service, so all



The Structure of News

items posted into it can be read by all users of the system.

At any one time in a NEWS session you are either at the newsgroup context level (for example, when you are browsing through the list of newsgroups) or at the newsitem context level (for example, when you are reading an individual newsitem). A number of NEWS commands work in different ways depending on which context level; and it gives a list if the newsitems in a particular newsgroup when you are at the newsitem context level.

Abbreviating Commands

You can abbreviate all NEWS commands to their least ambiguous elements: for example, directory can be abbreviated to dir, and select can be abbreviated to sel. Below, they are written in full.

newsgroups	last
directory	next
top	answer
select	mail
topic	post
read	help
close	exit
back	quit

Step-by-Step through NEWS

The best way to get used to using NEWS is to take some time to browse through it, finding the categories of NEWS (newsgroups) that interest you and then reading and perhaps contributing newsitems. The step-by-step guide that follows is designed to help you get accustomed to the NEWS environment. It takes you through a typical NEWS session and introduces the most important commands.

Step 1: Starting

To start a NEWS session, select **Unix News** from the Eurokom IES Service main menu. The connection to NEWS takes a few seconds and while it is taking place you see this message:

***** Connecting to Unix News *****

The point at which you enter a NEWS session is usually the same as the point at which you left off in your last NEWS session. So, if you exited from NEWS while the list of newsitems in a particular newsgroup was displayed, then you will be returned to that list the next time you sign on.

If you like, you can continue from the point at which you left off, or you can return to the newsgroups. For the first-time users in particular, it is a good idea to do the latter: first type **newsgroups** to return to the newsgroup context level, and then type **directory.**

NEWS>newsgroups
NEWS>directory

Step 2: Selecting a Newsgroup

As you can see from the sample screen below, newsgroups cover a wide range of topics. The currently selected newsgroup is indicated by an arrow in the left margin. In the right margin you can see how many newsitems each newsgroup contains (Count) and also how many of these you have not yet seen. Press RETURN to page down through the list of newsgroups; enter **top** to return to the first page.

```
NEWS - Directory of All Newsgroups

 1 comp.ai                  10    19
 2 comp.ai cog-eng           1     1
 3 comp.ai.edu               2     2
 4 comp.ai.neural-nets      15    15
 5 comp.ai.shells            3     3
 6 comp.ai.vision            8     0
 7 comp.arch                90    90
 8 comp.archives             0     0

<RETURN for more>
NEWS> select comp.ai.cog-eng
```

Screen Display The Newsgroup List

To open the currently selected newsgroup (in the example above this is comp.ai), enter **select**. Or, if you want to select another group, type **select**, followed by the name of the newsgroup. For example, to open comp.ai. cog-eng, here is the command you would enter:

NEWS> select comp.ai.cog-eng

Step 3: Selecting a Newsitem

Once you have selected the newsgroup you want, you are presented with a list of the newsitems in that newsgroup. These are sorted in date order, and the oldest newsitems appear first. Each newsitem is identified by a number (in the left margin) and by a subject. The currently selected newsitem is indicated by an arrow. In the right margin you are told how long each newsitem is, who posted it and when it was posted.

Notice that some of the newsitems have subjects that begin with Re:- this indicates that they are followup newsitems (or answers) that readers have written in response to original newsitems. For example, if you answer a newsitem with the subject A1 Bibliography, then your entry will appear in the list with the subject Re: A1 Bibliography. When you are reading a followup newsitem (that is one with a subject beginning Re:) you can use the topic command to see the original newsitem (if this is still current).

The procedures for moving up and down through the list are much the same as for the newsgroup list: press RETURN to page down through the newsitem list and type **top** to return to the first page. To read a particular newsitem, type **read** followed by its number.

Step 4: Reading a Newsitem.

Each newsitem contains a header that tells you who sent it, what newsgroup it belongs to, its subject and the date it was sent. the example below shows a typical newsitem in the comp.ai.neural-nets newsgroup.

```
  531   'Simple backup code wanted   13  4 Dec 89
  532   ' Neural Net Bibliography     5  4 Dec 89
  533   ' Re: MUSIC and Neural Nets  28  4 Dec 89

News> read 532

Group: Comp.ai.neural-nets, item 532 (Current Item Range #516-533)
Subject: Neural Net Bibliography
From: PSKCQ@CUNYVM.CUNY.END, The City University of New York, NY
Date: 1 Dec 89 22:57-53 GMT
?I am looking for a bibliography on neural networks. I am wondering if anybody knows about
a source of compiled bibliography. I would appreciate a response.. I can be reached at the
following email address: pskcq@cunyvm.cuny.end
NEWS>
```

Screen Display - Reading a newsitem

When you have finished reading a newsitem, you can enter close to return to the list of newsitems, or you can move automatically to another newsitem:

- Press RETURN to read the next newsitem in the list.

- Enter **back** to read the previous newsitem on the list.

- Enter **last** to move to the last newsitem in the list.

In cases where the newsitem takes up more than one screen page, you can enter any of these commands at the bottom of the page. At this stage, however, enter next if you want to move to the next newsitem (press RETURN to read the next page of the current newsitem).

Step 5: Using the Online Help

Enter **help** at the NEWS> prompt for a list of the topics on which you can get online help information. You can then choose the topic that interests you. In most cases, you then have the opportunity to get help on a range of subtopics associated with the topic you have chosen. The example below shows the help you get on the search command.

```
NEWS> help search
SEARCH

 This command directs NEWS to locate a newsitem which contains a specified text string...
(more text follows)

Format:
SEARCH (target)
This operation may tie up your terminal for long periods, particularly if you have specified ***
as the newsgroup to search ..... (more text follows)

Additional information available:
Parameters/Qualifiers
/NEWSGROUP /EDIT /TPU /HEADER /DISPLAY

SEARCH Subtopic?
```

Step 6: Exiting from NEWS

At this stage you can continue to read the newsitems in the newsgroup you have opened, or you can select another newsgroup. When you want to leave NEWS, type **exit** at any NEWS > prompt. You are then returned to the Eurokom IES menu.

You can also use the **quit** command to leave NEWS; the main difference between exit and quit is that quit does not update your context file : in other words, the next time you access NEWS, it does not remember where you left off, and it does not save any markings or registration details you have changed.

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Screen Display - Posting a newsitem

Communications for Manufacturing

Open Communications, essential for cost effective Computer Integrated Manufacturing (CIM) will be the subject of a CEC sponsored Congress at Stuttgart's Annual Machine Tool Fair, 4 - 8 September 1990. Experts from Europe, North America and Japan will address the industrial needs for open systems for manufacturing and explain the technological solutions enabling a multi-vendor environment and the full integration from design to manufacture.

The work of ESPRIT Project 2617, Communications Network for Manufacturing Applications (CNMA), will be highlighted and explained. CNMA aims at furthering the development and adoption of industrial communication standards for CIM.

The first day aims at policy makers. Users will explain the relevance of Open Systems in their competitive business position. Vendors will describe their response in terms of current products and development strategy. The second day aims at those responsible for applying the technologies. Pilot implementation, overviews of the most important communications protocols and services, Manufacturing Message Specification (MMS) and Network Management (NMT) will be described.

Tutorial sessions on the third day will address the areas of MMS and NMT. A workshop on the fourth day will allow experts to discuss specific technical issues concerning NMT.

Further information from:

CIM-EUROPE Secretariat
CEC, B-1049 BRUSSELS
Tel: +32 2 236 0797
Fax: +32 2 236 3023

ESPRIT: NEW PROJECTS LAUNCHED FOR A TOTAL COST OF 690 MILLION ECU

One hundred and seven new projects have been selected by the Commission for launching within the European Strategic Programme for Research and Development in Information Technology (ESPRIT). This is the result of a thorough evaluation by over 200 independent experts of the 450 submissions entered during Esprit's latest general call for proposals. Also included are three projects forming part of the 18th-month start-up phase of JESSI (Joint European Sub-Micron Silicon). JESSI is a Eureka initiative designed to strengthen Europe's international competitiveness in the design, manufacture and application of a new generation of standard and customised microchips. In addition to the 107 new projects, 43 exploratory actions, comprising workshops, demonstrations and studies will be initiated, to further increase the involvement of SMEs in the Esprit programme.

Negotiations are now starting with the companies, research institutes and universities involved, with the objective that work can start on most projects before the summer recess. Most of the project are scheduled to be completed in three years or less, showing the dynamic European response to the accelerated pace of the international technology race. The total cost of the projects likely to result is about 690 million ECU, half of which will be financed by the European Communities.

Aside from the JESSI projects, 40% of the selected projects concern the area of Information Processing Systems (IPS), 33% Computer Integrated Manufacturing (CIM) and 27% Office and Business Systems (OBS). Participation by Small and Medium sized Enterprises (SMEs) has intensified, both in number and in the amount of R&D work done - more than one third of all the work in the projects will be carried out by SMEs.

As expected, there is a strong participation from everywhere in the Community: industries, universities and research institutes from all member states have joined in the consortia making the original 450 proposals entered during the call. The growing response to Esprit reconfirms that the European Information Technology (IT) sector is facing up to the challenge of the international competition.

As a result of the response to this call, all the work foreseen in Esprit's second phase will now have been launched. Overall, some 6,000 engineers, scientists and researchers will be working full time on Esprit projects, once this new wave is launched. In addition, the Basic Research Actions started in 1989 established a strong network of leading academics and scientists, including several Nobel Prize winners. They are now working throughout Europe on key topics related to Esprit's goals on the theoretical level and have already made significant progress in different areas.

Since the beginning of Esprit, almost 500 projects and actions have now been launched, including those of the latest call. At the end of 1989, 163 of these had generated 320 major results,

ESPRIT: NEW PROJECTS LAUNCHED FOR A TOTAL COST OF 690 MILLION ECU

129 of which helped to put specific products or services to the market, 36 enabled substantial progress towards internationally recognised standards and 155 (mainly software methods and tools) have been put to use by participating organisations.

Esprit is well on the way to reaching its three objectives: to provide the European IT industry with the basic technologies to meet the competitive requirements of the 1990s, to promote European industrial cooperation in IT and to pave the way for standards. The programme started in 1984. The total cost to date of Esprit amounts to ECU 4.7 billion, 50% of which was borne by the Community budget, and the rest by participants in the projects. Each project consortium contains at least two independent industrial partners from different member states in order to assure the application of the results of the R&D efforts.

A comprehensive independent review of the Esprit programme recently concluded that, in the vast majority of projects, trans-European cooperation has been a success. It has resulted in significant benefits both for the participants and for Europe's technological base. Technologies, facilities and human resources have all been improved and significant successes achieved on international standards. Links between industry and universities have been strengthened, managerial awareness of the strategic importance of IT heightened, and confidence and optimism about the future increased.

CEC - DG XIII
B - 1049 Brussels

Renewal of free Subscription to IES-News

I wish to continue receiving IES-News

Last Name

First Name

Organisation

Street

City

Country

Please detach and send to: IES-News
European Institute for Information Management
13, rue de Bragance
L - 1255 Luxembourg

Esprit
Information Exchange System

IES NEWS

Issue No 28, June 1990

FUTURE EVENTS

Telecommunications amd the European Business Consumer. Financial Times. London, 11 - 12 July, 1990.

UK UNIX User Group. UKUUG. London, 13 July, 1990.

Optical Information Systems. Cimtech. London, 17 - 19 July, 1990.

European Conference on Artificial Intelligence. ECCAI. Stockholm, 6 - 10 August, 1990.

Computational Linguistics. Helsinki University. Helsinki, 20 - 25 August, 1990.

Human - Computer Interaction. IFIP. Cambridge, 27 - 31 August, 1990.

Optical Disc Storage. Optical Disc Technology. Lund, Sweden, 4 - 6 Sept.,1990.

Communication Satellites and Fibre Optical Communication. CEI - Elsevier. Davos, Switzerland. 10 - 14 Sept. 1990.

Growing Small Firms - the Role of Technology. Irish Management Inst. Dublin, 11- 14 Sept., 1990.

We would like to thank all our readers for the rapid and positive response to the "Renewal Letter" sent out in April. Replies started coming in within 2 days of posting and at the time of writing a grand total of 5557 "please-continue" forms has been received.

Some renewals were also sent by E-mail, with fax messages coming in from Japan and the U.S., as well as many European addresses. There also were many bouquets and no brickbats; the single "complaint" was a wish for a translated version of IES News.

The response rates for individual countries ranged from 30% to 83%. The number of replies received from the many countries to whom IES News is sent regularly is given below.

EDITOR'S CORNER

The good response rate has been an encouragement to all who are involved in getting IES News to you. One final point: If you have not yet posted your response or have mislaid our letter, please use the form on page 27. You may otherwise no longer receive your free copy.

The Editor

Austria	28	Luxembourg	106
Belgium	512	The Netherlands	431
Denmark	370	Norway	73
Finland	39	Portugal	92
France	544	Spain	280
Germany	818	Sweden	78
Greece	131	Switzerland	74
Ireland	140	The United Kingdom	1354
Italy	355	Others	132

Esprit
DGXIII
Telecommunications
Information Industries
and Innovation

FUTURE EVENTS

International Communications. International Institute for Communications. Dublin, 12 -14 Sept. 1990.

Computers in Medical Education. Bristol Univ. Bristol, 16 - 18 Sept., 1990.

OSI for Users. Omnicom. London, 17 - 19 Sept., 1990.

Euroinfo 90: Information Industry 90. SEAT. Rome, 18 - 20 Sept.., 1990.

Industrial and Trade Policy for the 90s. Netherlands International Institute for Management. Maastricht, 19 - 21 Sept., 1990.

European Quality Systems Standards: A Route to the CE Mark after1992. CEN/CENELEC. Nice, 24 - 26 Sept., 1990.

Expert Systems. Learned Information. London, 25 - 27 Sept., 1990.

Computer Security. Elsevier. London, 10 - 12 Oct., 1990.

EDI 90. Blenheim. London, 30 Oct. - 1 Nov., 1990.