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# Esprit Information Exchange System

# iesnews

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Over recent decades, research and technology have played an ever-increasing social role and very little doubt obtains in forecasting that this development will have a significant impact on the economic and social cohesion, which is a prerequisite for the success of the Single Market.

At the same time, 1992 will have a direct bearing on both national and Community R & D policies and programs.

Enterprises, in particular smaller ones, will have to innovate at an accelerating pace in order to survive in the competitive environment of the Single Market. The rub here is that the costs of innovation are increasing constantly, so

### LATE NEWS

#### Telecommunication Tariffs Study Initiated by OEDC

The Organisation for Economic Cooperation and Development has just embarked on its first study of telecommunication tariffs.

OECD has always been strongly in favour of free trade and competition, and the main purpose of the project, which is under the auspices of the Information, Computer and Communications Policy committee of OECD, will be firstly to establish a common methodology for comparisons of the various national tariff structures and secondly to analyse the reasons for differences. OECD considers that an understanding of the reasons for different tariff policies is an essential prerequisite for creating a free market in telecommunications services.

## THE SINGLE MARKET: CHALLENGE AND OPPORTUNITY FOR THE SMALL COMMUNITY MEMBER STATES

that much Governmental action is required to maintain and create a climate in which innovation, and that implies research and development, can be sustained. The challenge to small countries with limited resources in highly trained manpower and facilities is great. Today, areas of high technology are multiplying rapidly, so that there is a considerable danger of these resources having to be spread progressively more thinly over the growing fields of interest. The critical mass for any one topic may therefore not always be achievable in a small country and research policy, already a difficult enough subject even in large countries, becomes critical in utilising available resources to the optimum benefit of the research needs of the national economy and academic excellence at the same time.

### Useful Telephone Numbers

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# Esprit

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# THE SINGLE MARKET: CHALLENGE AND OPPORTUNITY FOR THE SMALL COMMUNITY MEMBER STATES

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An added factor is the danger of brain drain from smaller countries: researcher satisfaction is often more probable in a large research community, and more difficult to achieve in a small country.

Since modern research is usually conducted in a "network" of collaborating institutions and scientists, provision of ready means of intercommunication is consequently a high priority. This was realised at an early stage of the Commission's ESPRIT and other research programs by setting up the IES services. Whilst the thrust here is on providing for the interlinking of differ-

ent computer installations and networks through a migration to common standards such as OSI, the links created or possible by this initiative will serve to bring researchers from different countries into closer contact. This will be of particular benefit to smaller countries, where adoption of a single standard or norm will greatly reduce the investments needed for cooperative research ventures which require such links. Access to large computer installations, not otherwise possible, will also be feasible.

It is a particular pleasure to note that Luxembourg is the home of one

of the major actors in the IES initiative – a small country playing a Pan-European role to some effect.

It is naturally not only IES services which benefit from harmonisation of standards and norms: small enterprises can enjoy the effects of an economy of scale in production costs in Single European-wide market. The returns of innovation will hence be derived from the ability to provide products and services which are accepted as conforming to European standards throughout the Member countries.

Thus the establishment of a truly European Research and Technology Community is an indispensable element of the Single Market, and its achievement will signify important changes in science policy and R & D attitudes, especially in small countries. Success for these will depend on their native innovative and creative talents being channelled to exploit their given capacities and strengths, using the interlinking made possible by standardised services such as IES.

Fernand BODEN  
Minister for Education and Youth  
LUXEMBOURG

## EUROSINET: Putting Theory into Practice

### Time for cooperation

It may not be exactly commonplace, but in today's information market it is no longer a rarity to see a group of normally fiercely competitive suppliers acting in support of each other. The common cause is of course Open Systems.

The phenomenon of cooperation among competitors in this environment, whilst sometimes amusing

and frequently fraught with a new form of commercial politics, should be neither alarming nor surprising to the rest of the industry. How else, in practice, can we hasten the process of standardisation, which by general consent is necessary to support the development of a free market in which users can choose what suits them rather than what suits the incumbent or dominant supplier? Well, one answer is that users can

rise up as one and demand that all products are built to incorporate at least the minimum standards required for communication between them. But it has proved difficult for users to act en masse and impossible, given their different commercial priorities, to exert sufficient pressure for rapid change even in this limited sphere.

So in effect standardisation is left to the suppliers to progress. Over the last few years we have seen a number of constructive initiatives towards this end and a few regrettably, which seem more calculated to frustrate progress than to promote it. Most of these initiatives have been of a technical nature: concerned with the definition, selection and te-



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sting of standards. While these are legitimate and necessary concerns, there has been a tendency to introversion amongst the standards community, to the pursuit of standards for their own sake.

EurOSInet is quite a different sort of initiative - and different in a number of important respects. First, it is primarily not a technical, but a marketing, collaboration. In fact it is the only suppliers' association with a marketing role in Open Systems, focussing on the needs of users and the promotion of practical solutions to those needs based on the capabilities offered by currently available standards. Also, and in our view most importantly, EurOSInet is unique in concentrating on the business benefits associated with Open Systems, rather than the technicalities of the solution, or the elegance or purity of the standards themselves. It is about putting standards into usable products.

A complementary role in open systems promotion is played by X/Open, which has focussed on the selection and packaging of a mix of industry (de facto) and international standards under a brand identity. The X/Open Portability Guide, which references standards for a UNIX-based Common Applications Environment (CAE), commands substantial support among users of departmental systems and independent application builders.

The process of standardisation is inevitably a slow business, depending as it does on consensus at every stage. Fortunately, this has not held EurOSInet back, since our activities have not been geared to the for-

mal passage of standards through the maze of international committees. On the contrary, EurOSInet has made substantial progress in areas of immediate concern to users and has certainly outgrown expectations of it when it was formed less than three years ago.

The origins of EurOSInet can be found in a shared perception, amongst four or five suppliers, of a need for practical demonstration of Open Systems Interconnection to be made available more or less at the drop of a hat, thus avoiding the wasteful building and dismantling of temporary demonstrations which is characteristic of IT trade exhibitions. So the original goal was to create a continually available demonstration of OSI which could be maintained and updated in line with the maturing standards and known requirements of the marketplace.

The name EurOSInet, though like many such compound constructions hardly a thing of beauty in itself, remains usefully indicative of its purpose. It is a network in two senses, of people and computer systems, the latter based on international standards as defined within the OSI architectural model, the former concerned with international standards harmonisation focussed primarily on the needs of Europe.

## Change and Growth

While the fundamental *raison d'être* of EurOSInet has not really changed, the nature and scope of the activity is now very different from its first manifestation as a demonstration of an intercept of ISO file trans-

fer by five wary competitors. From those modest beginnings, the association has grown to the point where it includes nearly all the major, and quite a few of the not so major, computer suppliers and systems houses operating in Europe. Over thirty member companies now subscribe and most are active participants who make a resource commitment well in excess of the annual subscription itself.

Along with this growth in the membership, there has been a corresponding expansion of the network. Many members have established multiple nodes and most are available throughout the working week, with some on permanent, twenty four hours per day, seven days per week, availability. The network is still essentially a demonstration facility, though there are plans to use it more routinely for live communication between members.

Demonstrations are performed over a wide area network, nationally and internationally, using standards public X-25 services supplied by the packet switching data networks of the world. Application services which are currently demonstrated include the X-400 range of Message Handling Services and the recently ratified international standard for File Transfer, Access and Management (FTAM). The precise implementations of these standards and the rules for testing interoperability between members' systems are specified in a set of Technical Agreements which are the property of EurOSInet. These agreements ensure conformance to European standards as published by CEN/CENELEC, whilst allowing for additional functionality which may be required outside Europe.

The permanent nature of these arrangements means that demonstrations of multi-vendor interworking can be mounted at minimal notice, or none at all, for customers visiting

# EUROSINET: Putting Theory into Practice

a member's own premises. Equally it enables suppliers to cooperate in demonstrations of multilateral interworking at public exhibitions with a minimum of special preparation.

Just as the size of the association and the extent of its active network have expanded, so the range of its activities has broadened. The overall aim, in line with the Commission's goals, is to accelerate the adoption and practical implementation of Open Systems solutions in the European IT market. In this context EurOSInet is becoming rapidly the leading organisation for the promotion of the application of Open Systems, certainly in Europe and arguably world-wide. In part this is due to the powerful influence of many individual member companies, but it is also a reflection of the unprecedented levels of cooperation between members. This has led to a flood of requests for EurOSInet to participate in industry conferences and exhibitions, where the fruits of collaboration can be shown, as confirmation of the suppliers' seriousness of intent, as evidence of the practical achievements in interworking and in terms of the increasing availability to customers of OSI based products from a wide range of sources.

In furtherance of its goals, EurOSInet has developed a set of marketing and promotional materials to explain the business case for Open Systems and to support the actual demonstrations. These materials reflect a common commitment by suppliers and an agreed position on the important role of Open Systems in the evolution of the IT market. They include brochures, informa-

tion sheets, presentation aids, audio tapes and business application models.

## Current and Future Directions

As the association has grown, so the management structure and working methods have been adapted to meet the evolving needs of the market and of the membership. EurOSInet is currently an unincorporated group whose income is derived entirely from members' subscriptions. Each member company nominates a representative to the Steering Committee, which is the ultimate guardian of the group's Charter. The day-to-day operation of the association is entrusted to a Management Committee elected from the membership (as individuals not companies) with an appointed Secretariat and Treasurer. This committee is in turn supported by Strategy, Marketing, Technical and External Relations sub-groups, where much of the detailed work is done by staff volunteered by member companies.

EurOSInet's growth has not been limited to "organic" expansion. The group has also been particularly influential in the establishment of like-minded initiatives in other parts of what is commonly termed the global market. Groups with the declared aim of raising awareness of the practical business benefits of Open Systems in their own geographic markets now exist in the USA, Australia and the Far East. To a large extent these groups have aligned their charters with that of EurOSInet and are using common implementations of OSI standards in their

demonstrations of interoperability. In this way EurOSInet is making a significant contribution to the global harmonisation of the use of standards, a goal which is becoming increasingly vital as trading boundaries are made obsolete by the spread of computing and communications technologies into all markets.

Looking to the future, EurOSInet can be expected to continue its role in the promotion of Open Systems, with high visibility in Europe. The next milestone at which users can check progress will be at CeBIT '89 in Hannover, where a number of impressive multi-vendor demonstrations, including the use of X-400, FTAM, X-500 and EDI, will be featured on a stand under the joint management of EurOSInet and OSITOP. In addition to the twentyfour suppliers and systems houses involved, several major user organisations in OSITOP will be actively participating and this offers a further pointer to the direction in which EurOSInet is moving.

We believe that one way to cause a real acceleration in the adoption of Open Standards by the commercial and industrial markets at large is to forge a much stronger relationship between suppliers and users collectively. EurOSInet has already started discussions with user communities towards this end and we expect in 1989 to see major progress based on services to these communities which we are well placed to provide. In this we have the support of the Commission whose sponsorship of EurOSInet's presence at CeBIT '89 is just the encouragement needed to give added impetus to a program which is central to the achievement of an open market in Europe by 1992.

Peter KNIGHT  
Chairman  
EurOSInet



# The Role of the European Commission in the Electronic Information Market

## The Internal Market

A few months ago the Commission published the results of a broad study on the advantages of the Common Market in 1992. This study was undertaken at the request of the European Commission by Mr Cecchini. A large number of independent economic experts, consultants and research institutes contributed to the project; one of the bases is a survey of the opinion of 11.000 industrialists, covering all countries and branches of industry and trade.

The study not only quantifies the heavy cost that we now pay because of the many barriers which fragment the Community's economy into twelve separate markets; it also calculates the value of the immense opportunities which the completion of the internal market will open up: opportunities for growth, for job creation, for economies of scale, for improved productivity and business mobility, for stable prices and for consumer choice.

The total potential economic gain to the Community as a whole is estimated to be in the region of 200 billion ECU per year or more expressed in 1988 prices. This would add about 5% to the Community's gross domestic product. To this we must add the cost savings which businesses can achieve through exploiting more fully the potential economies of scale which a single market offers. This will be especially important for the expected growth of the services economy in the coming decade.

These figures reflect the direct cost

of identifiable market barriers. The total gains that are to be expected from competitive integration of the product markets are much greater. In particular, industries and service sector branches, at present subject to market entry restrictions, could experience considerably bigger percentage cost and price reductions.

The study confirms that if Europe is to get the most out of its large home market the internal frontiers must truly disappear and be free of administrative complications between member states.

The challenge is political and social as well as economic. To succeed, the program requires changes which will affect protected positions: those of regions as well as nations, of companies and industries and of their workforce. The road to market integration, however paved with good intentions, leads to 1992 by way of hard decisions rather than easy options.

The main conclusion of the study states that today's fragmentation of the European economy and its weak competitiveness in many markets mean that there is a large potential for the rationalisation of production and distribution structures, and reductions in cost and prices.

The outcomes of the study will be set out in a book by Mr Paolo-Cecchini and his colleagues. The book is appearing in all Community languages, distributed by private publishers; the first editions have already been released.

Let us hope that a large circulation makes it a self-fulfilling prophecy!

## Information

The Commission is fully aware of the importance of this subject and has initiated during the past decade a multitude of actions aiming at supporting our industries to obtain a strong European position in this area. The advent of the information society of tomorrow and its overwhelming influence on *Service Industry* is reinforcing our further actions.

These actions are concentrated within the Directorate General XIII and concern:

- the electronics industry
- telecommunications
- the information market

I am sure that I do not have to convince you of the importance of information for our economy. We all know also that the problem of today is not the lack of information, but the way in which it is handled.

Some experts recently calculated that the amount of information that is produced per year now is equal to the total quantity of information that existed in the whole world just before World War One.

Adequate information handling without the help of new information technology has almost become an utopia.

To illustrate this with some figures:

The electronics and telecommunications sectors - by which is meant the whole field of information technology, its application in industry and telecommunications - already represents a turnover of nearly 800 billion ECU at world level.

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By the end of the century (less than 12 years away) 60% of the workforce will be engaged in, or dependent on, these developments.

For electronic information services for professional users alone macro-economic estimates predict a turnover of 60 to 120 billion ECU worldwide in the year 2000.

A study a few years ago showed that of the 2 million jobs recently created in the US, some 80% were in information related activities.

In this respect Europe's position gives reason for concern. The technology gap between Europe on the one hand, US, Japan and more and more the south-east Asian countries on the other hand is constantly increasing.

Take the trade figures. Over the last ten years, our slight trade surplus in electronics has become a trade deficit of 14 billion ECU. In 1986 the electronics and telecommunications trade between Europe and the US was 2 to 1 in favour of the US; with Japan, 17 to 1 in favour of Japan.

So far as R & D is concerned, total expenditure (private and public) in the information technology field represents per capita 101 ECU in the US, 59 ECU in Japan and only 40 ECU in Western Europe.

If that is what the statistics say, what is to be done? While one should not deny the importance of those figures for a moment, one can also detect at the present stage a certain regain in confidence in European industry. The recently undertaken intensive consultations with business leaders in this sector and the Eur-

opean Commission show a growing feeling that we in Europe can, despite the slippage that has occurred, make a go of things, that we have strengths and capacities. How and why does this sense of confidence come about, and is it justified?

We think it is based on a mixture of reasons:

America has not been as successful as appeared probable a few years ago. The size of the Community market, and the promise of 1992, offers a strong possibility for industry to enjoy framework conditions which are crucial for our competitiveness.

And a reason is also to be found in the efforts the Community has made in this sector - efforts which all parties concerned, industry, research bodies, governments, national administrations and the European Commission, have identified themselves.

How did it happen that in *this* area the Community symbiosis has started working so well? This can be explained by summing up the Commission's approach along seven main action lines.

1. Through precompetitive R & D programs such as ESPRIT and RACE the EC is seeking to raise the technological level of European industry. This is done not only through the actual scientific and industrial work undertaken, but also through "joint ventures" between firms and universities from different European countries which are created as part of the process.

2. We are making a reality of the potential European market in electronics, telecommunications and information services. Standardisation is of fundamental importance in this area. In the IT world, standards define markets. The potential demand pulls us more and more harnessed through several Community initiatives.
3. Encouraging trans-European cooperation between industry and university in the IT sector via teaching and learning (COMETT and DELTA) and encouraging other students and teachers to work in countries other than their own (ERASMUS).
4. Bringing benefits to the poorer regions of the Community. Without such an action, we risk increasing the social divisions and reducing the potential market. The STAR program for telecommunications in the peripheral regions is funded at 780 million ECU (with matching funds from the states concerned).
5. Developing a European telecommunications policy; I will say more about this later.
6. The consecutive programs for the information market, beginning with the establishment of Euronet and Euronet-Diane, now concentrate on the reinforcement of Europe's position in the market for electronic information services. This item will also be expanded later.
7. The need to bring the Community's collective presence to bear in our external relations. In the



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GATT negotiations and in discussions with the US, Japan and other countries, the Community, speaking as one, has a substantial weight which no member state by itself can equal.

I would like to spend a few more words on two of these seven action lines.

## *Telecommunications and the Market for Electronic Information Services.*

In July of last year the Commission issued a "Green Paper" on Telecommunications. Telecommunications are expected to generate 7% of European GDP by the end of the century, compared with 2% now. More than 500 billion ECU is likely to be invested over the next ten years - a major *commercial opportunity* for our firms.

Apart from this, telecommunications are crucial for the infrastructure, the highways, of the information society.

The Green Paper proposes a substantial liberalisation in this sector. The Telecommunications Administration would continue to be responsible for the provision of networks services and voice telephony. All other services would be unrestricted, open to competition (subject to transitional arrangements); the monopolies, in their present form, would go. The procurement of terminals and equipment would be progressively liberalised.

The Green Paper has been widely welcomed. This positive reaction has allowed us to prepare a first series of follow-up actions, with strict

time schedules. The following are the main points on which we will proceed:

- The complete opening of terminal equipment markets by 31 December 1990
- The progressive opening up of the market for telecommunications services from 1989 onwards
- The full mutual recognition of type approvals
- The setting-up of a European Telecommunications Standards Institute
- Progressive implementation of cost-oriented telecommunications tariffs
- The full application of EC competition rules to the sector; the Commission intends to draw up corresponding guidelines. In this connection I would mention that the Green Paper underlines the need to separate the regulatory and operational functions of telecommunication administrations.

## **The Market for Electronic Information Services**

It was stated earlier that for the year 2000 the annual turnover of professional information services on the world market is estimated at 60 to 120 billion ECU; the number of highly qualified jobs in this sector is expected to grow over the coming 10 years by more than 1.5 million. A reasonable and fair share for Europe would be one third.

However, at his moment the European offer of databases services for trade and industry lags considerably behind the US. Here are some figures for illustration:

- In 1986, there were around 380 business databases of European origin, whereas the comparable figure for the US amounts to 950. Though the number of business databases accounts for less than 50% of the total number of databases, nearly 90% of the turnover is due to the purchase of business information.
- Seven out of eight host services which have the highest turnover in the world, are American companies. All of them offer business information. Only Reuters, which is at the top of the eight companies, is European. These eight companies account for around 80% of the overall sales.

Reasons for the slow development of the Community databases are the fragmentation of the European market, the diversity of languages, the high up-front costs for the creation of databases and services and the low level of market-orientation of European information services.

For economic and strategic considerations the provision of and the access to adequate information services for Community industry, trade, commerce and research has to be ensured. To this end, the Commission has prepared a program of priority actions for the creation of a Community information services market. This program has the overall objective to help to develop the internal information services mar-

Anne Polya for Tom HASLAK  
RE GUIDELINES

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ket by 1992, in line with the White Paper for the achievement of the internal market.

The Program foresees to:

1. Provide more accurate statistics on the information services market for business and policy decision-makers via an information market observatory;
2. Improve market conditions to overcome legal and administrative barriers for the creation of a real internal information services market. The problems to be handled include intellectual property, authentication of electronic transactions, electronic fraud and protection of personal data.

The Legal Advisory Board (group of experts) advising the Commission has become an authoritative body in this area. Its recommendations have already been used by the highest French Court for a long-pending decision in the area of copyright, when using press articles for the creation of a database;

3. Define rules of the game, namely "Who should do what", between the public and private sectors. Guidelines are being prepared which should help define with national administrations and throughout the Community what the public sector could do to stimulate supply and demand in the market and, for example, what publicly available information the private sector could use to create value-added services and under what conditions;

4. Create economies of scale within the Community for commercial activities of industry in the information services sector. Pilot and demonstration projects, based on close collaboration between partners in the information industry within member states, should help create a Community information services market. In the past, actions launched by the Commission such as Euronet Diane or by the French Government such as Minitel, have proven the effectiveness of such a catalytic impact on the market as a whole. It will help to serve not only the around 50.000 information specialists to find the information they need, but to reach the millions of common professionals who need information to do a more efficient job. To this end, a call for declarations of interest was launched in July 1987 which resulted in 715 responses, will be used as a basis. The objective is a Europe-wide collaboration on a large scale by clustering of project ideas with similar or complementary goals.

Apart from certain nucleus areas such as patents and tourism, projects which suggest the application of new information, e.g. by simple push button procedure or by talking to computers, will be a major concern.

5. Convince professionals by awareness campaigns of the value of existing information, to guide them through the information jungle by directories offered by the European Commission host organisation (ECHO), and

Help Desks with a special effort to provide support to small and medium sized enterprises and less favoured regions;

6. Launch a specific action in favour of libraries in the European Community to encourage and to improve their collaboration by interconnection and use of new information technologies. Recently a draft working program on library collaboration has been spread widely among participants in the Community library scene in order to evoke a broad discussion on this subject.

The preparatory phase of the general program for information services covers the years 1989 to 1990; the budget for these two years amounts to 36 million ECU. The official decision on the program dates from July 1988.

I hope that I have succeeded in giving you a clear overview of the current and future policies and developments of the internal market and information related subjects.

Very much is at stake. Only European-wide collaboration can ensure us of a fair share in the information society of tomorrow. Close cooperation of associations with parallel objectives within the Community could further reinforce this role.

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Commission of the European  
Communities, DG XIIIb,  
Luxembourg

Based on paper to 1988 EUSIDIC  
ANNUAL CONFERENCE



# The International Telecommunications Union: an overview

The International Telecommunications Union (ITU) is one of the oldest international organisations in existence, but not enough is known about it by the ever-growing family of telecommunication users or the IT family. The ITU, situated like so many other international organisations in Geneva, was set up in 1865 and nominally became an United Nations agency in 1947. There are 164 member countries with equal status and voting rights. In addition there are some 300 nongovernmental bodies which take part in the work of the ITU, especially within the CCITT (Consultative Committee for International Telephone and Telegraphy, which now also covers computer networks) and the CCIR (Consultative Committee for International Radio). These are divided into Recognized Private Operating Agencies (RPOAs), such as Mercury in the UK, Scientific and Industrial Organisations (SIOs), such as Siemens, and International Nongovernmental Organisations (IOs) such as INTUG. RPOAs may be members of CCITT and CCIR with voting rights, but the other two groups have only observer and/or advisory status.

The main aims of ITU are

- to maintain and extend international cooperation for the improvement and rational use of telecommunications
- to promote the development of technical facilities and their most efficient operation and to improve the efficiency of telecommunication facilities and increase their usefulness
- to harmonize the actions of nations in attaining these common goals.

The objectives are reviewed and renewed at each so-called Plenipotentiary meeting which takes place every 6 or 7 years. The next will be held this May in Nice, and it is thus timely to write about the ITU now. This forthcoming meeting may well prove to be the most crucial in the history of the ITU. At the last Plenipotentiary in Nairobi, the ITU, like so many other international organisations, was the victim of the US Reagan Administration, which pushed through severe budget cuts on the standard pretext of that the activities of ITU were becoming politicised and were intended to further the interest of developing nations only.

Naturally, the ITU does not rely on meetings at such long intervals. The Administrative Council of 41 member states meets annually and is responsible for setting yearly budgets and agendas for forthcoming conferences, such as the Administrative Conferences which draw up the ITU's binding regulations. Examples of such conferences are the World Administrative Telephone and Telegraph Conference (WATTC), the most recent of which was held in Australia last autumn.

There are four permanent organs in the ITU: the Secretariat, the International Frequency Registration Board, the CCITT and the CCIR. The ITU is an international treaty organisation, which implies that its conventions and regulations are binding on all members who ratify

them. Reservations concerning specific regulations can be made by members. On the other hand, CCITT and CCIR recommendations are not mandatory. In addition there is also a Technical Cooperation Department to assist developing countries.

Many important issues are likely to be raised at the Nice meeting. First and foremost will be the budget problem, where the Nairobi cuts are considered to have greatly hampered the work of the ITU in a period of accelerating technological change. The CCITT works on a four-year cycle, bringing out a book of recommendations which has grown from a mere 6.000 pages in 1980 to nearly 20.000 for the 1988 edition. This increase has been paralleled by the growth in number of participating organisations in the technical meetings. There is some criticism that the time scale for changes in recommendations, which as mentioned are not even mandatory, is too long and the ITU, and especially CCITT, will lose much of their standing and role through the more dynamic approach by regional standard bodies, such as ETSI or the Japanese committee. Should these bodies cooperate actively, then they, and not ITU, may well be the dominant factor in international telecommunications standards. (A reduction in the time scale was agreed at the WATTC conference.)

Some discussion is also in the air regarding the possible advantages of a merger of CCITT and CCIR.

Another perennial issue is whether the ITU is doing enough for developing nations. Considering that nearly 50% of the budget is borne by the US, FRG, USSR, France, UK and Japan, with additional contributions by AT&T and BT, the question is really a nonstarter. As it is, the Technical Cooperation Department has spent large sums on a multitude of projects and fellows-



# The International Telecommunications Union: an overview

hips for developing countries, and a proposal to impose a revenue contribution on international telecommunications service operators for assistance in this direction is certain to meet furious opposition at Nice.

Future plans, especially for conferences, are also a topic at Nice. These are costly ventures and absorb much of the limited manpower of the ITU. However, conferences for new aspects, e.g. space telecom-

munications or satellite broadcasting may be essential.

Whatever is decided at Nice will profoundly affect the telecommunications future, irrespective of the role the ITU will play in this. It is to be hoped that the European Community and its Member States will speak with a common purpose and voice to ensure that the ITU will be able to meet the new challenges it has to face and will continue to serve all of us, as it has done over the past 124 years.

## COMETT II adopted by the Council

The Council adopted (on the basis of Article 128 of the Treaty of Rome) by a majority its Decision relating to COMETT II.

The objectives of this second phase of COMETT (Program for Cooperation between University and Industry in Training for Technology) are basically the following:

- improve the supply of advanced training at local, regional and national level;
- give a European dimension to cooperation between universities and enterprises in initial and continuing training relating to technologies, and their application and transfer;
- encourage the joint development of training programs and the exchange of experience;
- develop the level of training in response to technological and social changes.

COMETT II is provided with a budget of 200 million ECU for a period of 5 years (1990-1994) (the Commission had initially proposed 250 million ECU). 40 percent will be allocated to international exchanges

(Strand B), 40 percent to continuing training in advanced technologies and multimedia distance training (Strand C), 12 percent to the European Network of University-Enterprise Training Partnerships/UETPs (Strand A) and 8 percent for complementary measures (Strand D).

Education, training and more generally investment in human resources, qualifications and skills comprise one of the key conditions for the success of the Internal Market and the strengthening of the economic and social cohesion of the Community. In the opinion of all Member States, COMETT contributes to this collective effort.

Additional information concerning the COMETT Program can be obtained from the:

COMETT Technical Assistance Unit  
Avenue de Cortenbergh 71  
B-1040 BRUSSELS  
Phone: 32-2-733.97.55  
Fax: 32-2-734.56.41  
E-mail: (EuroKom)  
Edward Prosser COMETT

## ECTUA Forms Experts Group

The European Council of Telecommunications Users Associations (ECTUA) has announced the formation of an Experts Group. With the blessing of the European Commission's telecommunications directorate, DG XIII, the group is to study open network provision and other related issues.

The group will compile position papers on each issue, presenting the views of the members' organisations and user communities. These papers will be presented to the European Commission's Analysis and Forecasting Group (GAP). ECTUA welcomes new members with the relevant experience. For further details, contact: Rene Kinsoen, Chairman, ECTUA, Av. Nouvelle 126, B-1040 BRUSSELS



# COSINE NEWS

Cooperation for  
Open systems  
Interconnection Networking  
in Europe.

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

## Libraries develop full OSI services for large user community

### Introduction

European cooperation in the area of data communications for libraries occurs at two main levels. In operational terms, various libraries in various countries have established regular exchanges of cataloguing databases. University libraries are making use of the national research network facilities which will later be standardised and integrated in the framework of COSINE. In terms of policy-making, a number of countries is represented in an ISO working group on Open Systems Interconnection for library applications. Communication links among libraries in today's star-shaped terminal-to-host networks use different protocols and do not allow for many application services on the networks. Moving into open computer-to-computer networks, where computer systems of different make communicate effectively, can result in providing the user workstations with the facilities of the network as a whole.

### OSI-based applications

The envisaged open computer-based network will consist of local library systems which on the one hand will be connected to Local Area Networks (LAN's) and on the other hand to packet switched Wide Area Networks (WAN's) providing each terminal user access to its own and to other local library systems. Functions such as central database searching and updating in relation to shared cataloguing; interlibrary loan administrative records; a network index with information on systems and services; network management including statistics and facilitating communication with other networks are likely to develop as capabilities on national or regional library computer systems. On the local level application of a connection-oriented OSI proto-

col with facilities at Level 7 of the OSI Reference Model will evolve. Among the envisaged applications are database searching, set manipulation, record updating, interlibrary loan, acquisitions and serials control, electronic mail and electronic document delivery. Initiatives are on the way to implement full OSI based applications with various service elements, not only for serving librarians as end users but also individual researchers.

Libraries are actively involved in the development of OSI-based service definitions and application protocol specifications for the functions Interlibrary Loan and Bibliographic Search, Retrieve and Update. Relevant ISO Draft International Standards are due in the course of 1989. Libraries from 10 countries are represented in a working group of ISO Technical Committee 46 Subcommittee 4, which is responsible for the design of OSI Layer 7 application protocols for library applications. The United Kingdom is represented through The British Library and the British Standards Institute, France through the Bibliotheque Nationale and the Ministry of Education; West Germany is represented on a university level; Denmark through the Ministry of Culture and Telecommunications; Norway through BRODD (Statens Bibliothek Høgskole); Italy through ICCU (Rome) and the Netherlands through the Centre for Library Automation Pica. Outside Europe the Library of Congress (United States) and the National Library of Canada are participating in the ISO Working Group.

Other areas in the development of ISO-OSI standards are also relevant for library services. The ISO FTAM standard is applicable for updating and distributing catalogue files; a subset of the ISO X-400 series of standards for Message Handling Systems is applicable for Interlibrary Loan applications. The standardisation work must be



complemented in EWOS (European Workshop for Open Systems) with the development of functional profiles based on international standards.

## Developments in the United Kingdom

The major OSI networking developments for British libraries centre around the existing facilities and future plans of the Joint Academic Network (JANET) which is a member of RARE (Reseaux Associes pour la Recherche Europeenne); and research and development of the VISCOUNT Inter-Library Network which is based at the London and South Eastern Library region (LASER). The UK fully participates in the ISO Working Groups concerned with OSI library applications.

Almost every university library and polytechnic library in the UK has direct access to the academic network JANET for various services. In-house library systems can be accessed through JANET and libraries are using informal electronic mail solutions for interlending communications. JANET has an active user group of libraries. The Joint Network Team has adopted for JANET a strategy for the transition to Open Systems Interconnect (OSI) within the UK academic community, in line with COSINE. JANET assists libraries with OSI implementations and keeps them informed on the state of OSI standards development for library networking applications, such as Interlibrary Loan and Bibliographic Search, Retrieve and Update. Meanwhile, the University Grants Committee has awarded funds for training librarians in the use of JANET and funds for the purchase of networking equipment for libraries.

The formal interlibrary lending network in the United Kingdom comprises ten regional union catalogues and the British Library Document Supply Centre (BLDSC). Since 1984 the VISCOUNT network development has been concerned with centralising the interlibrary lending processes of item identification, holdings or location tracing, interlibrary messaging, and union catalogue updating on LASER's central



computing facilities. The network utilises British Telecom's X-25 and telephone services. The VISCOUNT messaging service interfaces with the BLDSC's messaging system. VISCOUNT has access to JANET on an experimental basis. The intention is expressed that both networks be developed in a coordinated way. In assessing the future of interlibrary lending and document supply, LASER on behalf of its VISCOUNT users is examining the options for OSI messaging, bibliographic searching and file transfer for union catalogue maintenance. In this area LASER collaborates with BLDSC, Pica (the Netherlands) and DBMST/SUNIST (France).

## Developments in the Netherlands

Following government policy decisions in the Netherlands, libraries are acquiring an increasing role in information services for the general public. From the passive book loan activity new areas are being covered, such as database access and database consultancy in areas such as career planning.

Pica was initiated as the Project for Integrated Catalogue Automation. In 1979 a first version of a shared cataloguing system became operational. At this moment the Pica database contains about 5 million title descriptions. Pica is chartered as a foundation and operates as an independent non-profit organisation.

Pica provides full services to more than 80 participating libraries in the Netherlands. In total around 850 terminals are installed, in a terminal-to-host configuration. Full service means among other things access to the largest title database in the country; an online retrieval system using a Common Command Language to access various databases; provision of automated systems for cataloguing and interlibrary loan functions. The participating libraries, including the national Royal Library together build the central title database in an inte-

ractive process through the network. In addition, titles on magnetic tape received from the Library of Congress (US), the British National Bibliography and the Deutsche Bibliographie are added to the Pica database. For the maintenance of the central catalogue use is made of leased lines, the national public packet switched network Datanet 1 and, to a lesser extent, dial up lines (PAD function). Pica is also being made available through SURFnet, the national Dutch contributor to the COSINE project, which provides a common infrastructure for data communications for research and higher education in the Netherlands.

The PicaLink project offers an experimental implementation of the evolving ISO standard for Bibliographic Search, Retrieve and Update. This service became operational in September 1987 and is accessible from 8 university libraries. Results from the experiment are communicated to the members of the abovementioned OSI working group on library applications. Pica plays an active role in this working group.

## Conclusion

In a number of countries parallel developments in the area of OSI networking applications for libraries are taking place. Although the pace of developments is uneven, at the level of application standards different countries are drawing one line. International cooperation can be enhanced by demonstration projects using ISO-OSI standards for interlibrary lending and retrieval of information. With pilot services or pilot implementations in Virtual Terminal protocols, X-400 MHS and FTAM, COSINE is supportive of efforts in the area of OSI networking for libraries.

by: Look Costers (Pica, the Netherlands) & Peter Smith (LASER - Library & Information Technology Centre, United Kingdom)

N.B. The Pica Report was one of the key documents presented and discussed at a Commission sponsored Workshop on Use of OSI for Bibliographic Applications, held in Luxemburg during January 1989.



The following articles are based on the respective COSINE National Plans.

## Portuguese Researchers to Benefit from COSINE

In January 1989 a X-400 electronic mail service was initiated in Portugal in the framework of the COSINE National Plan. Every major R & D institution will be able to access this. A central RFC 987 gateway is installed to connect the X-400 network to the outside world. Industrial researchers with their own X-400 capability are allowed to connect to the mail network. The X-400 electronic mail is the first COSINE service to be operational in Portugal. Operation of this is the responsibility of the Instituto de Engenharia de Sistemas e Computadores in Lisbon, which is a not-for-profit joint venture of the Lisbon Technical University and the Portuguese PTT.

An experimental ISO FTAM service (file transfer, access and management) is expected to start in June 1989. Here the ISODE software implementation will be used, which has been the object of a pilot experiment involving several research institutes within RARE (Rezeaux Associes pour la Recherche Europeenne). For the purpose of FTAM services a coordination centre has been established at the University of Coimbra.

Portugal has decided to put a decentralised management structure in place for activities related to the implementation of COSINE. The country is divided in a northern and a southern service region, each of which will contain an Operations Centre. The management for specific services will be allocated to either one of the regional centres. The National Plan for COSINE is drawn up by a technical committee organised through the National Plan for COSINE is drawn up by a technical committee organised through the Fundacao para o Desenvolvimento de Maiores Nacio-



nais de Calculo Cientifico (FCCN), which was created in 1987. The founding members of FCCN are CRUP (Conselho de Rei-

tores das Universidades Portuguesas), JNICT (Junta Nacional per la Investigacao Cientifica e Technologica), INIC (Instituto Nacional de Investigacao Civil) and LNEC (Laboratorio Nacional de Engenharia Civil).

## Italy to set up national backbone network

The Gruppo Armonizzazione delle Reti per la Ricerca (GARR) is setting up a project to interconnect the six existing networks of single institutions. This project involves a national backbone network with a 2 Mbps capacity offering four protocols: X-25, TCP/IT, DECnet and SNA and represents one of the primary missions of GARR. It is the intention of GARR to migrate systems to full OSI service as soon as possible. GARR is committed to involve the users of the networks like EARN, HEPNET, EUNET and proprietary networks such as DECnet and SNA, and especially the technical people dedicated to network managing and development, in the realisation of COSINE.

The new national data communications backbone in Italy will constitute an improved interconnection of computer centres as compared to today's gateway operations. In addition, it will be connected to the pilot international X-25 managed data network service (MDNS), the backbone service to be introduced by COSINE. Currently data communications services are provided by means of the public telephone network, leased lines and dedicated circuit and packet switched network and satellite services. The public packet switched data network was opened to public service in December 1984 and was available nationally since February 1986. The X-25 version 1980 is implemented and there are no plans yet to move to the X-25 version of 1984. The maximum speed available is 9.600 bps. The Italian backbone will be financed by the Ministry of Research.

From the beginning of 1989 GARR is introducing the COSINE project to groups out-

side of the academic community. In the course of this spring a national workshop will be staged as a result. GARR is a commission set up by Minister for Scientific Research and Technology, which apart from interconnecting existing networks also aims at rationalising networking expenses; planning the evolution of the existing networks to OSI; coordinating participation in COSINE, RARE and in other international projects involving networking. Network representatives to GARR are also represented in COSINE and RARE. The organisations represented in GARR are CNR (Consiglio Nazionale delle Ricerche), INFN (Istituto Nazionale Fisica Nucleare), ENEA (National Body for Nuclear and Alternative Energy Sources), CINECA (Consorzio Interuniversitario Italia Nord-Est per il Calcolo Automatico), CILEA (Consorzio Interuniversitario Lombardo per l'Elaborazione Automatico) and Tecnopolis-CSATA (Centro Studi e Applicazione in Tecnologia Avanzati). In total, the number of hosts within this cooperative framework is 516, spread out over 165 sites. Total communication cost are estimated at 9,7 MECU per year, of which 4,8 MECU are for leased lines and 4,6 MECU for control units and software.

Recently, Olivetti has expressed its interest in participating in the COSINE project. Ways in which this participation can materialise are currently being negotiated with GARR.

# Ireland



## committed to include industrial researchers in COSINE

A National Steering Committee, with representatives of government, industry and academia, has been established to oversee the Irish COSINE Implementation Project and to develop a national policy in the area of research networking in the country. Active participation by industry in the Irish COSINE Implementation Project and its usage of the evolving facilities is central to the national policy. It is foreseen that the research network infrastructure will ultimately be based on the COSINE Specifications. The involvement of more sectors than academia in the implementation of COSINE is enhanced by the established governmental policy of achieving improved communications through the use of products developed to international standards. Specifically, the system being acquired must be able to connect to the governmental X-25 network and to participate in the services available on that network, which will be based on OSI standards.

The approach being taken in Ireland is to ensure participation in the international COSINE project in a first phase. In a second phase market studies related to the COSINE services will be undertaken. This phase will evolve during 1989. Taking those studies into account, the third phase can start after the summer of 1989, implementing the Irish national plan for COSINE.

Due to the nature of network usage to date, it is foreseen that electronic mail will be given highest priority. Use of X-400 (1984) standards for intersite traffic with the move to X-400 (1988) as soon as practicable is the development track adopted for the National Plan. The expressed goal is installation of X-400 (1984) services together with RFC 987 gateways in seven sites by November 1989. Second and third priorities are FTAM (file transfer, access and management) and remote login, although no de-

tailed plans for implementation have been formulated yet. X-500 directory services and network management are further areas upon which the first efforts will be concentrated. Additional services such as high quality graphics interfaces will be supported only on identification of user needs.

The Irish research community is currently served by a number of networking solutions: on an international scale EARN with four nodes and EUNET with 14 nodes, and on a national scale HEANET with 31 nodes, a network based largely on the public packet switched network serving the major academic institutes in Ireland.



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Welcome to the new CEN/CENELEC section of the IES News. For reasons of brevity the reader is assumed to have some basic knowledge of the purposes and machinery of this Joint European Standards Institution which currently has 18 members: all the EC and EFTA member states. Should you require information on this, however, do not hesitate to contact either your national CEN or CENELEC member, or the CEN/CENELEC Central Secretariat (at Rue Bréderode 2, B-1000 Bruxelles; phone +32-2-516 68 11, telex 26527). But please note that European standards and standards proposals need to be ordered via the members.

### **Brief historical background**

Although the history of Information Technology (IT) standardisation in Europe is rather short, it has been quite eventful. At the EC Summit Meeting in Dublin in December 1979, the need for a research and development program for IT was agreed, resulting eventually, in the initiation of ESPRIT, the European Strategic Program of Research and Development. The work received a major impetus when, in July 1984, CEN/CENELEC responded very positively to an invitation from the Commission to accelerate the task of European standardisation in the area of Information Technology.

The effort essentially focuses on the harmonisation of CEN/CENELEC IT standards using as a basis internationally agreed standards and similar documents. Much of the work was already in progress. For example a draft of CENELEC HD 40 001 "Requirements for Information Technology Equipment", was in circulation. This listed more than 30 ISO Standards or CCITT. Recommendations which could possibly be

## **News from CEN/CENELEC**

considered as bases for European Standards. The introduction of functional standards was clearly visualised, and may be one reason why, after several changes, the Harmonisation Document was not published until May 1985.

In the interest of rapidly developing a genuine Common Market for IT, CEN/CENELEC called upon European industry to commit itself to the greatest possible use of the resultant European Standards. The Community and the individual Member States were also asked to promote such standards, particularly in the area of public procurement.

By the end of 1984, mature live cooperation between CEN/CENELEC and CEPT led to the formation of a joint steering committee, ITSTC. This committee has, from the start, operated very successfully and continues to do so.

Among the most important news from the CEN/CENELEC information technology activities is the formal establishment of the European Committee for IT Testing and Certification, ECITC. All CEN/CENELEC member countries except Iceland, Luxembourg and Spain (but Spain has announced its participation) have now signed a Memorandum of Understanding whereby they commit themselves to monitor and promote a European System of IT Testing and Certification.

The point of this European System is to provide a framework for a number of "recognition arrangements" (which you might call "societies" for testing laboratories and/or certification bodies to recognise each others' results) – a framework intended to achieve technical harmonisation, secure a high level of competence, and (not least) promote the acceptance of the resulting test reports and certificates in wide circles.

Already halfway to being accepted as recognition arrangements under this system are the CTS-WAN/Open Systems Testing Concorcium (CTS-WAN/OSTC) and the European Testing and Certification for Office and Manufacturing Protocols (ETCOM). The former will test Wide Area Networks applications (including FTAM, MHS, Teletex and lower layer networks), the latter of course MAP/TOP applications.

Technical coordinations within the arrangements will be provided by "testing support services", and between the arrangements by the ECITC group on OSI Testing Liaison (OTL).

ECITC chairman for the next two years is Mr W. K. Wiechers, PNEM, Netherlands. Vice-chairmen are Mr J. Fialla, Danish Standards, and Mr S.-I. Nilsson, IBM Sweden.

EWOS (the European Workshop on Open Systems) had its second workshop on 9-13 January. Its first EWOS Documents (EDs) were elaborated and accepted by the Technical Assembly, viz.:

- Management of files between file-stores of two end systems.
- ODA basic processing of processable and formatted documents
- Ditto, enhanced processing
- ODA simple processing of processable and layout-independent documents.

These four will now be balloted within CEN/CENELEC as prENVs

(proposed European Prestandards) 41 205, 41 509, 41 510 and 41 511, respectively.

Other prENVs out for comment are the following, on character sets and their coding:

- 41 501: Character repertoire for information processing systems interchanging data via Videotex
- 41 502: Ditto for interchange via Teletex
- 41 504: Character repertoire and coding interchange via Teletex
- 41 506: Data stream format for interchange via Teletex (to be used with 41 502)
- 41 507: Ditto for interchange via Videotex

They will be voted upon at a meeting of the CEN/CENELEC IT working group Character Sets and Coding in Athens, 1989-04-10/11.

The CEN/CENELEC/CEPT Memorandum M-IT-02 specifies the work program for the common European standardisation in the OSI domain. Its latest version, Issue 3, was published in June 1988. An addendum, containing further refinements of the classification of the functions and also some more function descriptions, was published in January.

This addendum is the first use of a speeding up of updating M-IT-02, according to which the yearly update will be complemented by such an addendum roughly half a year after the full updates.

Each issue of M-IT-02 is accompanied by a supplement indicating the time tables for the different projects.

Sundry news:

- The new version of the X/Open portability guide will be proposed as a prENV. Due to its volume and complexity, the voting period will be extended to six months (instead of the normal three).

## News from CEN/CENELEC

- A workshop on the standardisation needs in the area of identification cards and bank cards will be held in April, preliminary dates 10-11. The report by a CEN ad-hoc group on Electronic Payment

Systems will be discussed, but also other uses of the cards - "smart" or otherwise - will be covered.

A long last, the proceeding of the CEN/CENELEC/CEPT workshop on IT Testing and Certification (in December 1987) are available. It is a document of 210 pages, containing a lot of valuable information on these activities. Despite the delay in publication, the material is not dated and will certainly retain its validity for some time to come.

The report, "IT Testing and Certification in Europe", can be ordered from CEN/CENELEC at 1500 Belgian francs per copy, plus postage and handling.

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Readers will no doubt be interested in a summary of a report commissioned by DG XIII on the impact of electronic mail on traditional postal services.

The study was announced in "IES News", No. 15, pg. 10.

## **PART I:**

### **CURRENT SITUATION AND TREND**

#### **- Definition**

Electronic Mail consists of a system where people use terminals in different locations to send messages to each other through a mailbox, i.e. a storage area in a central computer.

Postal Electronic Mail (often referred to as PEM) consists of Electronic Mail where Postal administrations play a role, either at the access to the transmission or at the delivery stage.

#### **- Trends in classic mail**

Unlike many forecasters had predicted the volume of classic mail has steadily increased in Europe since 1980, thanks to the growth in the economy and the marketing and technical efforts of European Postal Administrations.

Classic Mail is not growing uniformly: areas of growth include mainly bulk mail (direct mail, advertising...); areas of decline include international mail for example.

#### **- Current situation of PEM services in Europe**

There are three groups of countries in Europe. *Group 1* includes Italy, France, Sweden and Finland. These countries are the most advanced in PEM and offer a minimum of 2 to 3 services. *Group 2* includes the F.R. of Germany, the United Kingdom and

# Postal Electronic Mail Study

the Netherlands. These countries offer 1 or 2 services and have projects for new services. *Group 3* includes Denmark, Spain, Portugal, Greece, Belgium, Luxembourg and Ireland. These countries are less advanced in PEM.

#### **- Public facsimile services (bureaufax)**

Due to the fast development of private facsimile-installed bases in Europe, Postal Administrations have launched a public facsimile service, to link non-equipped users. There is a market for this service, and it can be improved, but long-term prospects indicate a growing competition with private services and private use and a possible decline in traffic.

#### **- Volume Mail**

The large volume of bulk mail has led Postal Administrations to introduce volume mail services, i.e. electronic input and transmission of data of clients. These services have had limited success and some have been stopped (in the US and UK), or have been changed to a more customised service. Prospects seem to be more promising in smaller-sized mail and business messages, based on the same printing infrastructure.

#### **- Hybrid teletex - word processors**

The idea is to connect private terminals to a postal printing and hand-

ing system, for a small volume of electronic mail. Market estimate are not yet available, but prospects seem to be attractive.

#### **- Integrated services**

The Italian PTT is offering an integrated service combining both mail box service and postal volume mail-business mail service. This type of service is original and seems to be successful due to its wide possibilities.

## **PART II:**

### **STRATEGIC ANALYSIS**

#### **- Future role of Postal Administrations in PEM**

Four market segments must be considered, and on each segment the position of Postal Administration is different:

1. On home to home mail, threats and opportunities are limited.
2. On home to business mail, the threat comes from the growth of private terminals (facsimile, computers, minitels...) but the Post Office has a good position.
3. On business to business mail, many threats are developing: EDI and Electronic Mail developments
4. On business to home mail Postal Administrations already provide a volume mail service.

Postal Administrations role in PEM could be more active in segment 3 where threats and opportunities are great.

#### **- Problems with the introduction of PEM services**

There are institutional, legal, technical, and international cooperation



problems that could have a negative impact on the development prospects of PEM services.

### **– European suppliers of PEM equipments and market prospects**

Postal Electronic Mail market prospects for equipment suppliers are approximately 50 million ECU over the next 5 years, most of this amount being related to the installation of teleprinting infrastructures in Community countries. This equipment is supplied by European companies such as Telefunken, El-sag, C.G.A. - H.B.S., which assemble different standard modules and develop specific software.

### **– Standards**

The X-400 standard is largely accepted by equipment suppliers, who are developing products in compliance with this.

### **– Situation of US suppliers of services**

The public Electronic Mail service market is shared by many companies (100). Electronic Mail is considered as a basic service, facilitating the sale of other value-added services. Growth expectations are still very high (+50% per year).

### **– Situation of European suppliers of Electronic Mail services**

The market for Electronic Mail public services is far less developed in Europe than in the US, but expectations in Europe are very high. There are few European companies that can compete on an internatio-

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nal basis with their American counterparts.

The growth of Electronic Mail and EDI in Europe is expected to have an impact on classic mail in the long term.

## **PART III: RECOMMENDATIONS**

In the 1970's many studies predicted that Electronic Mail development would have a great impact on classic mail with a decline in volume in 1990. The huge development expected has not occurred, some PEM experiments have been stopped (E. COM, Zapmail in the US) and the volume of classic mail has been increasing steadily over the period. In the 1980's, Postal Administrations tend to consider that the threat is still minor.

BOSSARD CONSULTANTS' assumption is that the threat is growing and that Electronic Mail (both messages and data exchange) is reaching its development phase in Europe.

Electronic Mail will have an impact on traditional mail: in 1993, there will be a change in traffic that will affect the Post market share but will not affect the global volume of mail. In 2000 (12 years), there will be an increased change in traffic that could affect the global volume of mail.

The size of the impact is very difficult to estimate because of the numerous elements to take into ac-

count (technology, customers' attitudes, institutional strategies...) and because of the heterogeneity of the situation in each European country.

BOSSARD CONSULTANTS' assumption is that the impact could be as high as 2 to 3% of global traffic in 1993, and 10 to 15% of global traffic in 2000.

The consequence for the Post Office in case of reduced market share and reduced traffic are socially and financially important.

BOSSARD CONSULTANTS' assumption is that Postal Administrations should provide Electronic Mail because it corresponds to their vocation and because it could compensate for any decline in revenues. Based on their knowledge, Postal Administrations could offer hybrid services at first and then "pure" electronic mail services (EDI...) through joint ventures with software or telecom companies.

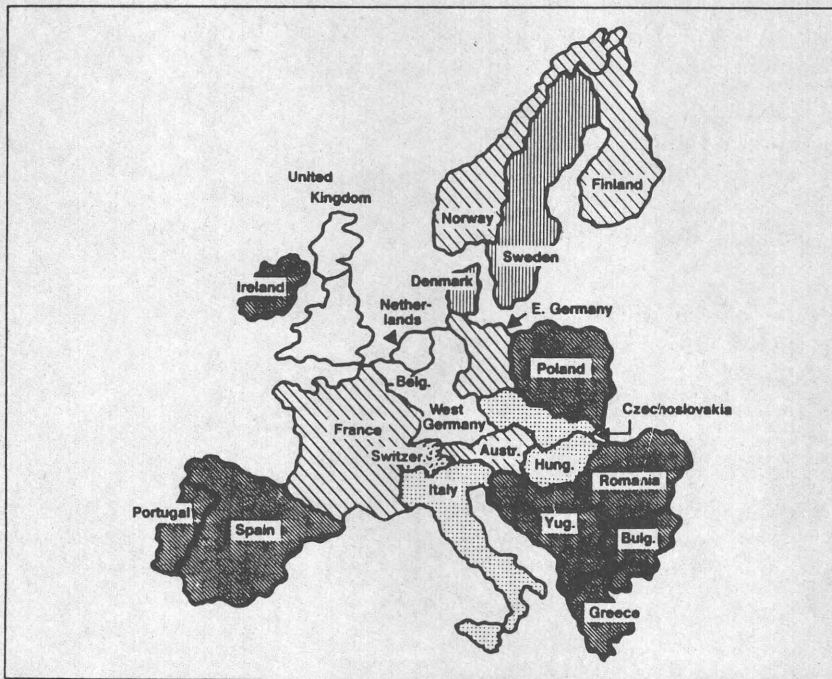
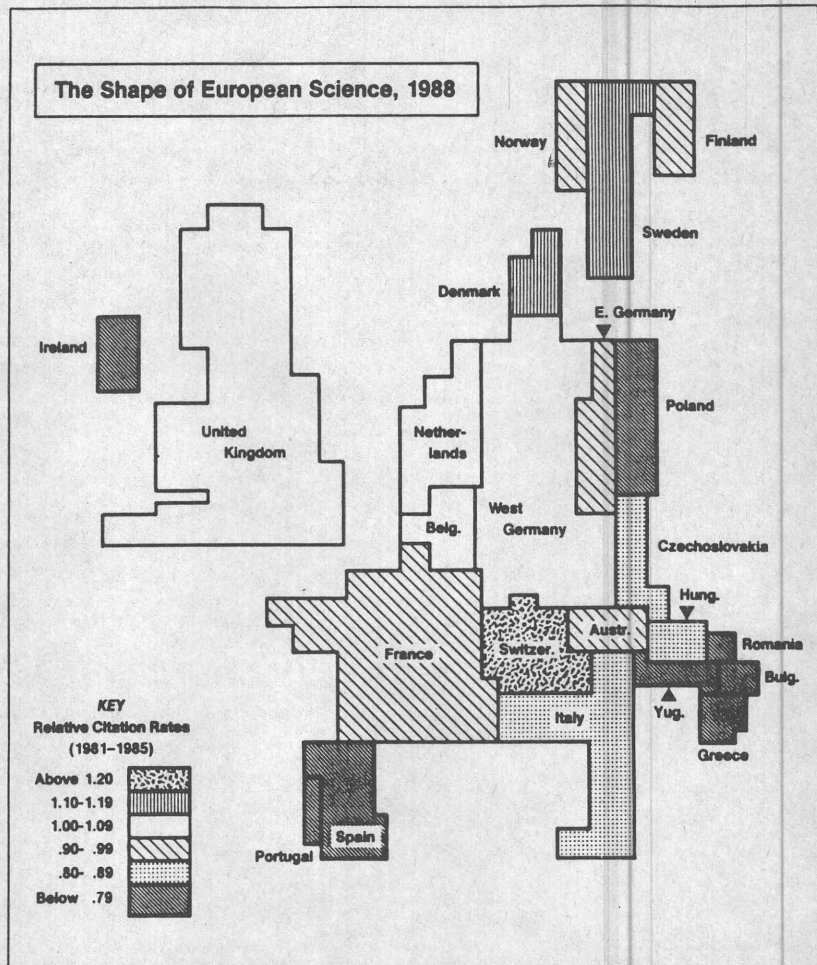
Postal Administrations should also become more international in their outlook.

It is in the interest of both the European Community and of Postal Administrations that a European-wide electronic mail infrastructure is available as part of the Single Market in 1992.

BOSSARD CONSULTANTS

# The New Look of Euroscience: Mapping Output and Impact

There have been many attempts at assessing the relative importance of contributions to the progress of science. The short note reproduced here gives a clear overview of the European scene. To complete the picture the comparative Relative Citation Rates for the US and Japan are 1.05 and 0.90 respectively. America thus lies in the mid-stream band for Europe but the Japanese figure must be viewed with caution since possibly language barriers may be the reason for the low citation rates. Since the data cover all sciences and technologies it is idle to speculate why Switzerland is at the top whilst France has a poorer showing than Denmark. If readers have any views, please let us know.



"For centuries, the nations of Europe have been competing fiercely with one another. They have fought long and bitter battles over mere slivers of land. They have clashed repeatedly in pursuit of new markets. Fortunately, outright warfare over land and markets is largely a thing of the past. But there is one realm in which the competition, although more civilized, is still heated science.

When measured by the volume of published scholarly papers, the United Kingdom clearly dominates the European scene, as is revealed in the map of Euroscience, 1988. However, in impact of scientific papers, it's Switzerland that sets the pace.

In this depiction, each nation has been drawn to a scale proportionate



# The New Look of Euroscience: Mapping Output and Impact

to the number of articles its scientists published last year (as a percentage of all European articles, about 300,000) in journals indexed in the Institute for Scientific Information's *Science Citation Index (SCI)*. Since ISI indexes only the most significant journals of science (some 3,500), the map should be interpreted as one showing each nation's contribution to this selected set of high quality, high impact journals.

In addition to being scaled in size according to output of papers, each nation's area in the accompanying representation has been graphically coded to indicate the impact of the papers according to the relative citation rates that each achieved for the period 1981 - 1985, the most recent period for which complete data on relative citation rates are available. The relative citation rates were calculated by the Information Science and Scientometrics Research Unit (ISSRU) of the Hungarian Academy of Sciences, using ISI's data (see T. Braun, W. Glänzel, A. Schubert, *Scientometrics*, 13 (5-6), 181-6, May 1988; and *The Scientist*, August, 8, 1988, page 17). The ISSRU team compared the actual number of citations per paper received by articles from each nation to the expected number of citations per paper, which it based on the average citation rates of the journals in which each paper was published. The relative citation rate is the ratio of actual to expected citations; a score of 1.0 means that a nation's publications received exactly the number of ex-

pected citations. A score above 1.0 indicates higher-than-expected citation performance; below 1.0 indicates underperformance in terms of citations.

Switzerland, at the heart of Europe, ranked highest in citation impact for the period 1981 - 1985. Close behind were two Scandinavian nations, Sweden and Denmark.

In terms of output, the United Kingdom published approximately 25% of all papers authored by European scientists. West Germany ranked se-

cond, contributing about 17%, while France was third with nearly 15%. The Low Countries and Switzerland appear much larger here than on a geographically accurate map; the Netherlands and Belgium produced, respectively, about 5% and 3% of all European articles indexed by ISI, while Switzerland contributed nearly 4%."

David PENDLEBURY  
from "The Scientist" (1989-01-09)  
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## Rotavision Public Videotex Terminals

More than a dozen years ago, first announcements were made of a revolutionary new service of information provision which could "piggy-back" on conventional television services and receivers, and would require very little in the way of additional end-user equipment. This developed into Teletex and Videotex, the latter being launched in the U.K. as Prestel. Success on a commercial scale did not come in spite of strenuous efforts until there were two major steps forward: in France the PTT faced with mounting costs in providing telephone directories took the plunge and announced that they would provide an online database instead of the print product and at the same time would supply end-users with small terminals to access the service: the Minitel was born and its story to-date is common knowledge. The other innovation was adaption for interactive transactions - at first for holiday bookings (Thomson Holidays), and now for stock exchange usage, home banking, airline bookings etc. The latter development came actually after many had considered Videotex a technology that was ahead of its time and which had failed to gain any noticeable market accep-

tance, except in France.

Recently a new use has been found and introduced for interactive Videotex involving the provision of simple Public Access Terminals for job hunting. The UK Department of Employment in conjunction with a Liverpool firm, Information Technology and Marketing Ltd, have promoted a new service in Glasgow, called the Glasgow Jobseeker, in which Rotavision terminals, developed by IT&M, and connected to the local database of open jobs of the Department, are made available in public locations in and around Glasgow. Jobseeker terminals are linked via a central control station and the latest vacancies occurring in the Glasgow area are automatically switched into the appropriate classification, accessible from the terminal through use of a simple menu. Having selected a suitable job vacancy, the user can obtain a printed copy giving full job details. If interested, a user can then link through the special telephone provided to the nearest Jobcentre of the Department and arrange for an interview. The success of the scheme is highlighted by the several hundreds of filled vacancies using the terminals reported for the first month of use.

At the end of January 1989, the European Workshop for Open Systems (EWOS) (1) released its first results and submitted them to the formal CEN/CENELEC ratification procedure, in order to convert them into European pre-standards (ENV).

Three out of these four proposals, called EWOS DOCUMENTS, concern Office Document Architecture Profiles:

- Q/111: ODA Document Application Profile - Processable and Formatted Documents - Basic Character Content.
- Q/112: ODA Document Application Profile - Processable and Formatted Documents - Extended Mixed Mode.
- Q/121: ODA Document Application Profile - Processable and Layout Independent Documents - Simple Messaging Profile.

The fourth EWOS DOCUMENT addresses, within the File Transfer and Management (FTAM) domain, the specific profile:

- A/13: FTAM File Management

It is expected to conclude the voting period by May 1989 and to have the new ENV's available before the holidays.

The EWOS Technical Assembly which approved these drafts on 13 January, also reviewed several other proposals made by the seven currently working Expert Groups in the following domains:

- Lower Layers of OSI (LL)
- Office Document Architectur (ODA)
- Message Handling Systems (MHS)

- File Transfer, Access and Management (FTAM)
- Virtual Terminal (VT)
- Directory (DIR)
- Manufacturing Messaging Services (MMS)

The development work is done at a steady rhythm by 95 experts from 65 European and international IT suppliers, users, government and standardisation bodies and academia.

## EWOS releases its first Standard Proposals

So far, 22 more deliverables are scheduled for 1989, out of which 3 more in ODA, 5 more in FTAM, 2 in LL, 7 in VT, 4 in DIR and one in MMS.

A similar number of EWOS DOCUMENTS and TECHNICAL GUIDES (second type of EWOS result) is scheduled for delivery in 1990. Among these are further ODA, MHS, LL, VT and DIR profiles as well as some corresponding testing standards on ODA.

This work on Functional Standards (Profiles) is requested by the major users and supplier organisations such as EMUG (European MAP Users Group), COSINE (Cooperation for Open Systems Interconnection Networking in Europe), OSI-

TOP (Open Systems Interconnection Technical and Office Protocols), RARE (Reseaux Associes pour la Recherche Européenne), ECMA (European Computer Manufacturers' Association) and SPAG (Standards Promotion and Application Group).

Furthermore, the EWOS Technical Assembly has also adopted a Policy on Conformance Testing, related to the OSI Profiles developed.

In carrying out this activity, the results of CTS and CCT projects will be taken into account, as well as other available results.

In this area of particularly time- and resource-consuming work, EWOS also offers its open forum to reach harmonised technical consensus.

This harmonisation goal will be more completely attained by the cross-liaisons which have been established on the one hand with the European Telecommunications Standards Institute (ETSI) in areas of common interest, and on the other with the two other Regional Workshops: The OSI Implementors Workshop of NIST (National Institute for Standards and Technology) in the US and the Asia-Oceania Workshop (AOW) in Japan.

Further information on EWOS and its activities may be obtained from its secretariat in Brussels (Tel.: (+32.2) 511.74.55, Fax: (+32.2) 519.68.19)

(1) EWOS was created in December 1987 by the most representative federations of technology suppliers and user organisations. (COSINE, ECMA, EMUG, OSITOP, RARE, SPAG) in conjunction with the European Standards Institutions (CEN/CENELEC).

From the very beginning the Commission of European Communities has supported this initiative and became meanwhile a member of EWOS' Steering Committee.



# Joint User Statement on the Guiding Principles for Open Network Provision (ONP)

## Endorsed by: EUSIDIC, ECTUA, ICC and INTUG

(European Association of Information Services, European Council of Telecommunication Users Associations, International Chambers of Commerce and International Telecommunications User Groups).

ONP is first and foremost a step in the process of establishing a European telecommunications network services arrangement where those wishing to provide non-reserved services can gain full access to the telecommunications infrastructure and to reserved services on equal terms to the infrastructure operators. It forms part of the EC Green Paper objectives and is specifically mentioned as one of the thirteen key proposed positions. It is not a prerequisite to the removal of unnecessarily restrictive telecommunications regulation. Such regulation should be removed on the basis of the existing Community competition rules irrespective of ONP.

The signatories of this document, being convinced of the importance of Open Network Provision (ONP) to the goal of the Single Market state that:

- 1) the central purpose of ONP should be to provide a means whereby competition for non-reserved services can take place under conditions that are fair and which, within reason, meet the needs of all competitors
- 2) there should be no distinction drawn between users of ONP - except in terms of the ONP facilities they wish to use
- 3) Telecommunication Authorities must, as a pre-condition of being allowed to offer a non-reserved service, be required to provide to others equivalent access and conditions to that which they themselves have in the application of the ONP rules
- 4) ONP must be applied in accordance with clearly published arrangements; disputes should be resolved via the competent independent regulatory authorities in the light of Community competition policy
- 5) tariffs for ONP should be cost-oriented and reasonable. i.e. there should be a clear and understandable relationship between the elements of the infrastructure provided and the tariff applied
- 6) it is of particular importance that any tariff principles in connection with ONP should be referred to the competent regulatory authorities. The current process does not allow for this

## International Standards Organisation Activities

We report elsewhere in this issue on News from CEN/CENELEC, but this does not signify a lack of interest in ISO. Part of the New Year's Message of Lawrence D. Eicher, Secretary-General of ISO, may be of special significance:

"Perhaps the biggest megatrend of the 80's, the advent of the global information society together with the global information technology industry, again demonstrates a staggering need for voluntary industry-wide standardisation. In this case the concurrent restructuring of telecommunications monopolies brings two megatrends into convergence and no one sees any sense in approaching the standardisation challenges at less than the global level. This was recently confirmed at the CCITT Plenary Assembly in Melbourne where a full scale collaborative relationship was affirmed between the International Telecommu-

nication Union and the new ISO/IEC Joint Technical Committee on Information Technology (JTC 1)".

Other important events were the final release of ISO 8879: Information Processing - Text and Information Systems - Standard Generalised Markup Language (SGML) and of ISO 9069: SGML Document Interchange Format (SDIF). Both Standards are relevant in the context of electronic publishing and the use in this of FTAM.

Finally, ISO 8601 lays down the format for dates, where much confusion has reigned for many years: the order for the standard system, which includes time-of-day, is from larger to smaller elements, e.g. 1989-02-28 or 19890228. When time is added, aTis interposed, e.g. 1989-02-28T23:20:50, for 28. February 1989, 23 hours, 20 minutes, 50 seconds.

There are several changes in this our twentieth issue. The most noticeable one is the adoption of blue as our colour, four, the most notable one the first of what we hope will be a regular feature, guest editorials, and the most important the promised inclusion of a section giving News from CEN/CENELEC. As to the first, we are happy and proud to proclaim by the colour and the inclusion of the familiar DG XIII logo our membership of that family. Guest Editorials are intended to offer distinguished persons in the IT world the opportunity to share with us their views on developments in IT and IES. The third innovation will bring to our readers some insights into the standard world.

The COSINE article on libraries and the reference to the Commission's initiative on libraries in the Rosendaal paper show the growing concern with a much neglected, but old and important segment of the Information World. At a time when normal funding is being curtailed, any

## Editor's Corner

help must be doubly welcome. There is however a danger in that the resource sharing made possible by modern IT and the adoption of standards, OSI or others, for that purpose, could be used to impose further economies on libraries, the storehouses of knowledge. IT has not as yet replaced the serendipity element in using libraries or been found an adequate substitute for the pleasure of handling books or browsing. It is perhaps time to pause and reflect that embracing the latest technological advance may bring with it some hidden potential damage to the existing societal fabric. A small example – music on tap through electronic media, analogue or digital, has virtually destroyed home music making and how we all long for the lift, supermarket or bistro, and indeed telephone systems, where there is silence and not incessant cacophony.

### FUTURE EVENTS

*Document Image Processing.*  
Blenheim Online.  
London, 14 - 16 March, 1989.

*Intelligent Networks.*  
Societe des Electriciens et des  
Electroniciens.  
Bordeaux, 14 - 17 March, 1989.

*Telecommunications.*  
I.E.E. York, 2 - 5 April, 1989.

*Computer Aided Trade.*  
Euromatica.  
Munich, 3 - 5 April, 1989.

*Laser Materials Processing  
for Industry.*  
North Staffordshire Polytechnic.  
London, 10 - 12 April, 1989.

*Olympus Utilisation Conference.*  
ESA.  
Vienna, 12 - 14 April, 1989.

*Optical Information.*  
Learned Information.  
Amsterdam, 18 - 20 April, 1989.

### FUTURE EVENTS

*Computer Aided Design  
in Composite Materials Technology.*  
Vrije Universitet Brussels.  
Brussels, 25 - 27 April, 1989.

*ISDN in Europe.*  
IFIP and ICCC.  
Amsterdam, 25 - 27 April, 1989.

*Optical Information Systems  
International.*  
CIMTECH and Meckler.  
London, 15 - 17 May, 1989.

*Economics of  
Information Technologies.*  
Deutsche Ges. für Dokumentation.  
Garmisch-Partenkirchen,  
29 - 31 May, 1989.

*Expert Systems.*  
Learned Information.  
London, 6 - 8 June, 1989.

*Testing OSI Systems.*  
Frost & Sullivan.  
London, 11 - 12 July, 1989.

*Machine Translation Summit.*  
Deutsche Ges. für Dokumentation.  
Munich, 16 - 18 August, 1989.