

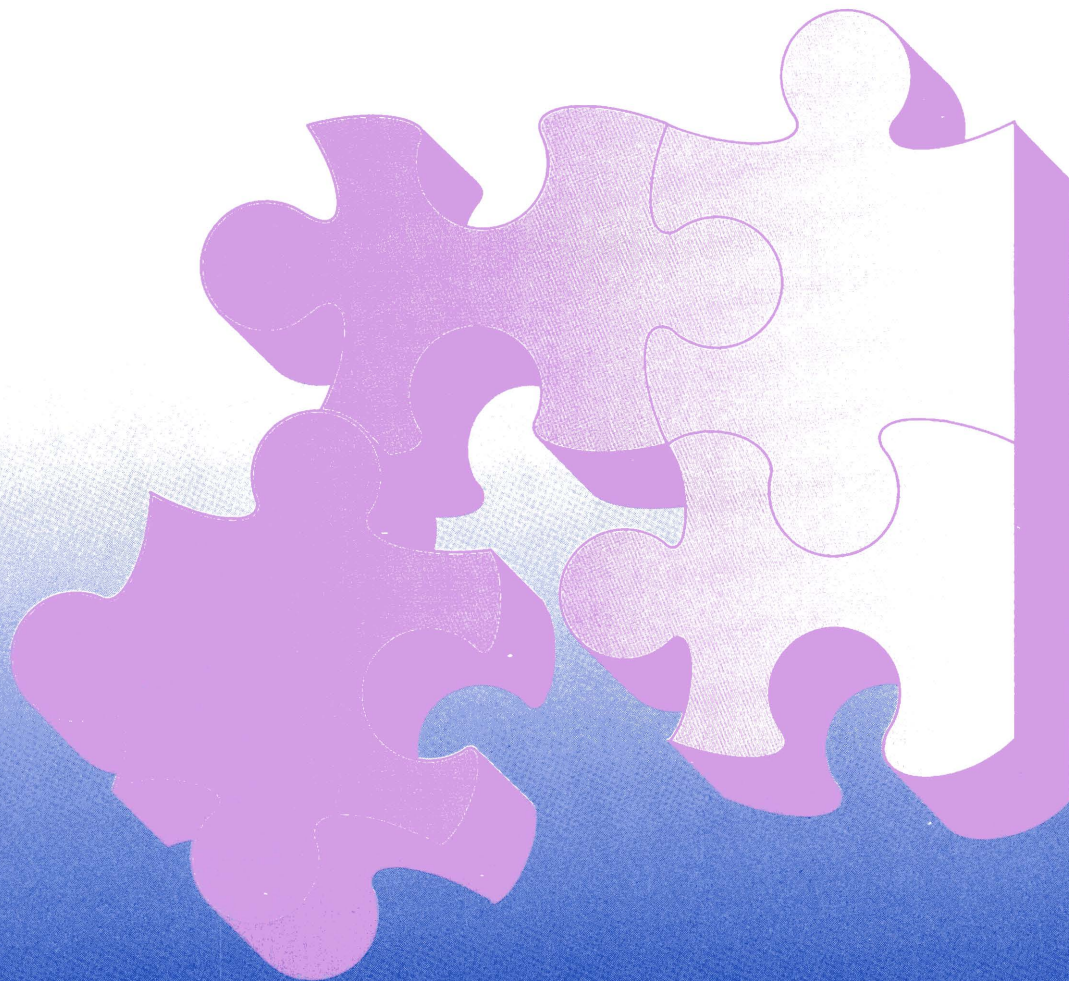
Commission of the European Communities



Standardization

in information technology and
telecommunications

Fact sheets and relevant legislation



Standardization in Information Technology and Telecommunications

Standardization in Information Technology and Telecommunications

FOREWORD

Technological progress over the last 20 years has led to communications systems and networks than can process and carry very large quantities of information.

The demand for value-added services is growing rapidly, requiring an ever-increasing capacity to communicate over greater distances, with a larger number of users, in a greater number of ways, at higher speeds and with minimum costs.

Information technology (IT) and telecommunications have a pervasive impact on our work, our lives and our society.

However, the 'Tower of Babel' of incompatible hardware, software and communications services that still exists cannot provide a basis for meeting current and future needs: not for the information industry, not for its customers, not for the development of trade. The complexity of development and implementation have not always allowed (even in 1990) the introduction of harmonized services and terminals which can provide users with guaranteed, end-to-end international services, compatible with each other and usable in all European countries.

The single European market will not become a practical reality if technical barriers impede information flow between trading partners who increasingly use electronic means of processing and communicating information.

Standardization has therefore become a key issue in the development of information technology and telecommunications world-wide.

Major changes are under way. It is essential for the Community that those changes are accelerated and influenced in a direction which meets Community needs.



Source: CONCORDE

These fact sheets set out the problems and describe Community policy and related actions aimed at tackling them. The Community is a focal point for coordinated European action in:

- ensuring that the required technical standards exist and that they are the same throughout the Community, and wherever possible, world-wide;
- establishing testing and certification of conformity to those standards;
- speeding up the availability of conforming products and services by means of information promotion and, where appropriate, legislation.

This information pack also contains reference sheets, including in particular a beginners' guide to standards, a glossary and a list of standardization organizations. The list of these sheets is given below.

The contents have been updated since the initial edition two years ago in response to the rapid changes taking place in this field.

The information given here mainly covers standardization in the field of information technology. In view of the increasing convergence of IT and telecommunications technologies, it is also relevant to standardization in the telecommunications sector.

For more detailed information concerning the latter, the reader is invited to consult the set of 'Telecommunications' fact sheets updated in June 1990 and the 'Green Paper on the development of the Common Market for telecommunications services and equipment' (June 1987), both available from Directorate-General XIII.

FACT SHEETS
<ol style="list-style-type: none">1. The challenge of standardization2. Networks, communication and interworking3. Community standardization policy4. Standards organizations: the changing scene5. European standards6. Conformance testing – the CTS programme7. Certification policy8. Public procurement9. International cooperation
REFERENCE SHEETS
<ol style="list-style-type: none">1. A beginner's guide to standards2. Glossary3. Steps in Community standardization and public procurement policy4. Standards organizations and technical bodies in brief5. List of standards organizations and technical bodies6. Some relevant Community acts (directives and decisions)

THE CHALLENGE OF STANDARDIZATION

Information technology standards have become one of the crucial issues for the future of both the IT industry and of all the other sectors which now use IT. This fact sheet explains why, and serves as an introduction to the other fact sheets in this series which set out how the Community is responding to the challenge.

The flow of information in Europe

The application of IT within industry, commerce and administration can transform the activities to which it is applied and have far-reaching effects on competitiveness. This applies at all levels, from that of the individual enterprise to that of the Community as a whole. It is vital that users are not handicapped by incompatible products, blocking the flow of information and constraining the procurement and use of IT.

The strength of the European market

Of the three leading economic regions, Japan has a population of about 124 million, the USA of 250 million and the European Community of 343 million¹, with a further 32 million in the EFTA countries. The internal fragmentation of the European market, in all sectors, is a key element of its weakness proportionate to its size. The achievement of a single European market, scheduled for the end of 1992, offers great opportunities for new economic dynamism and social development throughout the Community. This particularly applies to the European IT market, because of its size and its significance for the performance of other sectors.

In the telecommunications sector, the offer of a number of new services in the coming years points to steady growth in the Community terminal market, which is growing at a rate of 6.5% per year.

The growth of a major industrial sector

The information industries have grown to become a major economic sector, and in some countries the largest. They have moved beyond the point where standards can be neglected without severe risk to competitiveness, and in the case of many enterprises, risk to survival.

The reasons why IT standards have become so critical lie in several conflicting trends.

Firstly, there is an increased need for systems compatibility and the capability of intercommunication and interworking:

- The sheer growth in the number of IT systems inevitably brings about an increase in the amount of interaction between systems; most systems have, or will have, some contact with other systems (shared data, shared programs, shared users, shared networks, shared facilities).



Source: CSELT

- Information is more and more recognized as a key resource in an organization. Increasingly that information is held within a growing number of IT systems. If the systems are incompatible, the gain from the application of IT to some tasks will be offset by the new barriers created and the loss of the integrity of the information resource.
- The growth in the use of IT creates a demand for IT specialists; that need cannot be met so long as the demand is inflated by massive, avoidable work generated by reinventing a new wheel for every application and while the sup-

¹ Including the former East Germany (16 million).

ply is constrained by excessive specialization, with the reduced flexibility and duplicated training this entails.

While the need for compatibility is rising, factors which helped to provide compatibility in the past are weakening:

- Earlier, many users procured their IT from a single supplier; now they are likely to buy from many sources.
- For many organizations, computing used to mean central data processing, where most decisions were in the hands of a central department; now, computing is very diverse and much of it is in the hands of end-users, whose decisions are less coordinated and possibly uncoordinated.
- Inter-system communication was most likely to be with other systems in the same management domain; now, with the development of public data networks and the diffusion of IT technology in the office and in manufacturing and trading systems, communication across boundaries is increasing.
- Previously, computing was largely concerned with automatic data processing, in which information flow tends to follow predefined and stable patterns; now, much computing is more concerned with providing support for non-automated tasks (e.g. text processing, computer-aided design, decision support systems) where information must flow to or from wherever the human user finds necessary during the performance of a task.

Furthermore, the most widely used and well-trying methods of providing compatibility and intercommunication are increasingly inadequate. Until now, methods such as making one product emulate another, or putting a 'black box' between two incompatible products, have been widely used but such solutions are becoming more expensive, more complex and more fragile. Users face massive technical, economic and logistical problems with the type of IT usage which is now becoming reality. Some of the largest organizations have already been hit by soaring interconnection costs coupled with diminishing interworking performance.

The only viable way forward demands far more extensive conformity to IT standards as the basis for compatibility, information interchange and interworking.

The IT industry

Such a way forward would earlier have conflicted with what the IT industry judged to be in the commercial interests of the suppliers. Now, those interests have changed.

The scope of IT has expanded so much that no supplier, not even the largest, can provide the full range of IT products.

Suppliers have to adopt an appropriate strategy, concentrating on what they do best and selling into a multivendor environment in which complementary products come from other suppliers. Users are keen to procure modular elements which they can freely assemble to build more complex systems, best suited for meeting the requirements of sophisticated applications. Under these circumstances, the former 'lock-in' effect of proprietary products becomes a burden: the supplier is locked out from a large part of the market. Customers spend money on overcoming barriers instead of buying products. Suppliers spend money on multiple versions to interface with various competitors' products, instead of developing new products. It is a situation which is increasingly recognized as one where nobody wins.

For similar reasons, standards are now less regarded as an obstacle to innovation. For an innovatory product to have any commercial prospects, that product must be able to coexist and interwork with what exists. Standards act as a channel, constraining innovation in some respects but contributing to its wider diffusion.

The internal market

European industry and commerce is frequently at a disadvantage compared with North American and Japanese competitors because of the fragmentation of the European home market. That applies particularly to the IT industry.

In IT most of the fragmentation is caused not by conflicting national regulations or formal standards, but by the lack of well-harmonized international standards or by the diverging standards the suppliers implement in a country. In IT, unlike many other sectors, the need is not so much to harmonize existing regulations and standards but to get standards accepted for the first time, and to ensure that from the beginning those standards are the same throughout Europe.

There is another link between IT and the European internal market. The amount of cross-border trade and communication will increase and the amount of that which is handled by means of IT facilities will grow as a result of the increasing penetration of IT. Moreover, the flow of information will be between autonomous enterprises. Open and fluid communication will be essential.

At present, this does not fully exist; there are still too many impediments and extra costs. The internal market cannot come into being if buyers and sellers throughout the Community cannot communicate easily with each other.

NETWORKS, COMMUNICATION AND INTERWORKING

The need for IT standards is felt most strongly in the critical area of inter-system communication and interworking over all types of network. The following notes provide a brief layman's guide to the subject.

From 'closed' to 'open'

In the past, most systems worked in 'closed' environments. Communication was primarily between systems in the same organization – systems which were probably from the same supplier and which were selected to be able to work together. For local communication, the means of communication was most likely to be point-to-point cabling between systems. For long-distance communication, essentially the same solution was most often used, namely private lines leased from the national telecommunications administration.

Communication was thus closed in almost every respect: between a closed group of systems, from a closed range of suppliers, using closed means of communication.

Under such circumstances, there was no compelling reason for all suppliers to adopt compatible techniques for inter-system communication, and there were significant technical and commercial reasons for adopting different techniques. Even now, the ability of systems from one supplier to communicate with those of another is often severely limited and tasks requiring complex interworking are often impossible.

Applications such as electronic mail, electronic invoicing or electronic funds transfer demand an open approach. Information must be sent to the right destination, regardless of where the addressee is or what make of equipment is used. Moreover, it is impossible to provide a point-to-point link between every party. Common networks which are as open as the telephone network must be used.

Even within the confines of a single organization similar needs are felt. There are an increasing number of systems installed and there is increasing interconnection between them. A department wanting a new system must be able to buy the best system for the job, without being constrained to buy the only model which can communicate with other installed systems. And unless offices are going to become tied up in a spaghetti of cables, shared networks must be used.

An open approach becomes essential, not because everything needs to be open to everything else – far from it! – but because a switch from closed to open is the only practical way forward. The telephone network provides an analogy: it is designed so that everybody can phone everybody else, because that is the only way in which each subscriber can be sure that he can phone even a small number of people of his own choice.

Open communication and interworking are totally impossible without standards

The task of developing and applying the necessary standards is technically extremely difficult and raises adjustment problems, but it is being achieved because of the perception that there is no other way forward.

The fact that three major videotex systems¹ have been in operation in Europe since the early 1970s – incompatible with each other without costly technical adaptations – highlights such a situation.

Standardization in IT will permit the connection to the network of a wide range of terminal equipment throughout the Community, notably advanced computer equipment, without the need for electrical or mechanical modification on the terminal equipment side.

In this context, the setting up of a European 'nervous system'² to ensure interoperability between Member States' electronic information networks will be of key importance to the completion of the single European market. This will require a thorough application of open systems standards to cope with the growing exchange of information amongst the national administrations of the Member States.

¹ Prestel in UK, Teletel in France, BTX (Bildschirmtext) in Germany.

² Framework programme of Community activities in the field of research and technological development (1990 to 1994): sub-heading 'Development of telematic systems in areas of general interest' (COM 90/221/Euratom, EEC - OJ L 117 of 8 May 1990).

Open Systems Interconnection standards

The range of technical aspects which must be standardized is wide. The principal ones are:

1. compatibility at the elementary level of plugs and signal voltages;
2. communication over each successive link in the whole series of links between sender and receiver;
3. determining the addressing and routing of transmitted information;
4. dealing with deficiencies in the communication service;
5. coordinating the dialogue with the remote system (who does what and when);
6. ensuring that communicated information is encoded in a way that both systems can manage;
7. last but not least, interacting with the remote system to perform whatever task is the purpose of the communication.

The set of standards called Open Systems Interconnection (OSI) standards provides the basic technical specifications for these aspects.

The OSI Reference Model defines the framework within which the basic standards have been developed. Many of the terms associated with OSI come from the diagram used to represent the model.

It is often called the **seven-layer model** because the functions described above are each allocated to a horizontal 'layer', each of which includes the parts of the communicating systems responsible for that function, as well as the 'protocol' by which those parts communicate with each other.

The 'lower layers' are simply those in the lower half of the diagram. They are numbered 1 to 4 and perform the functions listed under points 1 to 4 above. The 'upper layers' are in the upper half of the diagram, numbered 5 to 7, and they perform functions 5 to 7.

Each layer is said to provide a 'service' to the layers above. The protocol and the service are named after the layer. Thus layer 3 is the network layer, and it uses network protocols to provide the network service (with the help of the services provided by layers 1 and 2).

The OSI Reference Model does not specify any of the practical detail necessary for real systems to interwork. That detail is provided primarily by the standards for protocols and services, as well as by certain other standards, such as those for addresses used in layer 3 and information encoding used in layer 6 (for additional basic information see reference sheet 1).

Multiple standards

Unfortunately, it is not possible to have a single set of OSI standards with just one standard for each of the aspects mentioned above: IT is too complex and used for too many purposes.

Multiple standards are needed to cope with variations such as:

- different types of task (electronic mail, remote terminal operations, etc.)
- different types of information (data, text, diagrams, pictures, voice, etc.)
- different types of network (private/public, wide area/local area, etc.)
- different types of environment (office, factory, air traffic control, etc.).

In the end...

When the OSI standards and other related standards are in widespread use, we will have a situation in which:

- a product which can be marketed in one country can be marketed in all Member States;
- equipment for connection to public networks can be connected to any public network in the Community;
- purchasers will be able to buy the best products for their purpose, without restrictions due to conflicting standards;
- end-to-end communication will be possible between any two systems which need to communicate, regardless of the network to which each is attached, subject to the two provisos that there must be a link between the networks and that security measures may be used to prevent undesired access;
- the same will be true of interworking, i.e. not just the passing of information between two systems but cooperation between the two systems in performing a shared task;
- the reduced need for special measures to ensure communication compatibility will give management greater freedom in optimizing IT facilities to meet business objectives and facilitate the exchange of data with third countries who follow identical policies supporting use of ISO standards.

COMMUNITY STANDARDIZATION POLICY

Standards have high priority within the European Community's overall strategy for information and communications technology.

The single Community market will become a reality for European industry only insofar as common technical standards, preferably based on international standards, provide the technical coherence needed to support economic integration.

As the regulatory barriers to the free circulation of industrial products within the Community are removed, differences in national technical standards still constitute a significant obstacle to the acceptability of those products in the market.

The main aims of Community standardization policy – in increasing cooperation with EFTA – are:

- to secure the interests of the IT-using sectors, now that effective deployment of IT is one of the keys to maintaining competitiveness on world markets;
- to remove barriers to trade in IT, with special reference to the internal European market;
- to ensure the viability of the European IT industry;
- to contribute to the creation of a competitive environment.

The main thrust of the policy is to achieve a significant increase in conformity with accepted standards for products and services marketed and used within the Community, or offered by suppliers in the Community on world markets, in the field of information technology and telecommunications.

Conformity with standards in this context means satisfying the technical conditions necessary for diverse products and services from many sources to be able to work together and share information when required. It is intended to encourage, not restrict, the variety of facilities available to users.

The creation of the internal European market requires that the standards used to provide such compatibility be the same throughout Europe. The world-wide nature of the IT industry and the growing international exchanges of information make it vital that those standards are also the standards of the world market.

The policy therefore involves the formal adoption of standards at a European level, and as far as is possible – which so far has been almost all the time – the adoption of existing international standards for that purpose. There are already mechanisms of “transposition” in place to ensure that, depending on the particular procedure used, these standards are adopted as national standards in the Member States, or made available in each Member State, with any conflicting national standards being withdrawn. Transposition therefore guarantees technical harmonization.

The availability of standards in the field of information technology and telecommunications is vital for the removal of technical barriers and therefore for the completion of the European internal market by 1992 as defined in the White Paper from the Commission to the European Council (Milan, 28 and 29 June 1985) and in the Single European Act.

The European standards programme is therefore by no means a go-it-alone European activity; it is using the means at the disposal of the Community to pull international, European and national standards into line.

Such action alone is insufficient. The state of international standardization is not yet far enough advanced to meet all the requirements which have to be met.



A typical problem is that there are often many possible combinations of international standards and of options within each standard. Conformity with standards is in itself an insufficient guarantee that the purpose of using the standards will be met. In order to provide confidence in the ability of two products from different sources to inter-work, the choice must be narrowed down.

In such cases, the policy is to produce European **functional standards** which are complementary to, and entirely consistent with, the international standards. Fact sheet 5 describes what is being done. In parallel with this activity there is energetic dialogue with other regions – primarily North America and the Far East – where the same problem is being tackled, designed to ensure as rapid and complete a convergence as possible.

All these moves are of no use unless the standards are actually applied in practice and the benefits are secured. So the last part of the policy is to take steps to ensure the practical application of the standards.

Some of these steps involve legislation, such as that requiring reference to IT standards both in national technical regulations and in procurement by public bodies or the alignment of standards applying to the connection of equipment to public telecommunications networks in each Member State.

Other steps involve a mixture of voluntary cooperation and funding (in whole or part) of activities which promote or facilitate the adoption of standards – notably the establishment of conformance testing services (see fact sheet 6) – and insistence on the use of standards in all the major European research and development projects in the IT and telecommunications field.

Who does what: the standardization framework

1. Coordination and administration are carried out by the **Commission of the European Communities**, which is the 'civil service' for the **European Community**. The responsible department is Directorate-General XIII, Telecommunications, Information Industries and Innovation.

The authority for the Commission's activities comes from the Council of Ministers. This passes Community legislation and sets out the framework within which the Commission works.

The Commission is not a standardization body and does not produce standards. That work is entrusted to the European standardization organizations, and via them to national standardization bodies, whose members are the interested parties: the users, the suppliers and the governments.

2. The European standards-making organizations are:
 - **CEN** (the European Committee for Standardization)

- **CENELEC** (the European Committee for Electrotechnical Standardization)
- **ETSI** (the European Telecommunications Standards Institute).

3. The European Workshop on Open Systems (**EWOS**), created in December 1987 within the CEN/CENELEC framework, with the participation of users' and manufacturers' organizations, provides a 'workshop function' which corresponds to their growing interest in participation in the standardization work and which aims at promoting international convergence.
4. Working on the periphery of the formal standardization framework are a range of organizations and associations which nevertheless play a vital role, at different levels, in the process (see fact sheet 4).
5. In formulating Community policy, the Commission is assisted by committees concerned in various ways with the whole standardization process, from considering the need to start work on standards right through to putting standards to practical use.

Two such committees are:

- **SOGITS** (Senior Officials Group for Information Technology Standardization);
- **SOGT** (Senior Officials Group 'Telecommunications').

These guide the Commission in policy matters and have specific responsibility for assisting in the implementation of the legislation in this area.

Within the scope of SOGITS the **PPG** (Public Procurement Group) – previously called Public Procurement Sub-committee in the Information Technology sector – while having wider interests than standardization, considers standards as one of the priority subjects. The legislation requiring reference to standards in public procurement has reinforced that priority.

The most important actors, however, are not in this list, because they are not institutions or committees. They are the suppliers and users of IT and also the telecom operators. The whole aim of the policy is to serve their interests. Their say in the policy is formally, via institutions and committees, supplemented by many informal means of contact and influence.

The mechanisms

The mechanisms available comprise:

- EC legislation
- the preparation and setting of standards
- the accompanying measures, such as initiating projects or providing support funds.

These mechanisms are often linked.

1. EC LEGISLATION

Technical harmonization is at the core of the Treaty of Rome's Article 100 A. Revised under the single European Act, it is the 'raison d'être' of

many EC activities. The approximation of laws constitutes one of the basic requirements of Community policy.

Community legislation has been passed in the field of standardization.

Basic rules

● One key piece of legislation is Directive 83/189/EEC of 28 March 1983. Among its provisions (which apply to all sectors, not just IT) is the requirement of notification to the Commission and the Member States of any work on national standards and technical regulations. There are powers to call a temporary halt to any national standards activity which may create new barriers within the Community and to substitute activity at the European level.

All new projects must be notified and the Commission or another Member State may raise an objection. If considered appropriate, a joint European activity may be initiated. Then, under the 'standstill' agreement, Member States refrain from adopting a national standard for a limited period, in which a European standard can be agreed; and if not, the standstill comes to an end.

In order to prevent the creation of new technical barriers, Directive 83/189/EEC obliges Member States to notify the Commission in advance of all draft regulations and standards concerning technical specifications that they intend to introduce in their own territory.

● Previously, in areas other than IT, detailed technical specifications were frequently contained in legislation and those specifications were produced by the Commission. More recently – and right from the beginning for IT – the 'New Approach' adopted in 1985 has applied.

Under the 'New Approach', technical and legal aspects are kept separate. The legal aspects and basic goals are defined in instruments such as Directives and Decisions, and the technical aspects to achieve those goals are defined in standards.

The separation is not just a matter of where the information appears. It is a fundamental division of responsibility. The responsibility for determining what is a technically and commercially viable way of meeting the objectives of the legislation is transferred to the standardization institutions, and via them to the directly interested parties, the suppliers and users.

● The decision 87/95/EEC of 22 December 1986 covers standards for IT systems and functional specifications for telecommunications services offered over public networks; its provisions do not apply to terminal equipment (covered by the separate Directive 86/361/EEC) nor to the network equipment itself.

This decision contains four important provisions:

- work on European standards to fill gaps caused by lack of precision in international standards
- need to use standards in public procurement
- reference to standards in national regulations
- measures to promote the harmonization of conformance testing.

● In the context of the completion of the single market, certification represents one of the priorities of Community policy (see fact sheet 7). To this end, and in the framework of a global approach, the Commission supports the implementation of an overall structure. Accordingly, it has proposed a set of measures based on objective criteria, with the aim of creating the atmosphere of confidence needed to achieve uniformity and transparency as regards national certification and testing activities, be they public or private (Council Resolution of 21 December 1989 on a global approach to conformity assessment endorsing the Commission Communication of 24 July 1989).

In the telecommunications sector

The Community has a prime interest in harmonized services and a Europe-wide terminal market, pursuant to the recommendations of the Green Paper on the development of the Common Market for telecommunications services and equipment (June 1987).

● Harmonization of telecommunications services is performed by the combination of various actions:

- Barriers to information flow caused by network incompatibilities are tackled by one of the articles in Decision 87/95/EEC. Public networks must offer a service such that end-to-end compatibility is provided for systems conforming to functional standards covering network access.
- Regulatory barriers to the free circulation of products caused by differing technical rules and approval procedures for terminals to be connected to networks are being removed as a result of Directive 86/361/EEC of 24 July 1986 on mutual recognition of conformity tests for terminals. This directive is the initial stage to allow industry to market terminals throughout the Community on the strength of tests carried out in **accredited laboratories** and based on **common technical specifications** (NETs): in this way the equipment which has been tested in one Member State does not have to be retested in the others.

● A further major step in this direction was achieved by the adoption by the Council, on 24 July 1990, of a common position on a new directive on telecommunications terminal equipment. This new directive¹ will achieve in particular the full mutual recognition of **type approval certificates** and goes beyond Directive 86/361/EEC, which was only concerned with

¹ The new directive will take over Directive 86/361/EEC of 24 July 1986.

test results. The mutual recognition of type approval certificates is based on the principle that tests carried out against harmonized standards and certified in one Member State are valid throughout the Community (and other countries may participate in this scheme). This means that such certified equipment can also be placed on the market and connected to a public network in the other Member States without the requirement to repeat testing or carry out any further type approval formalities in the country of destination.

There are two other major elements in this new proposed directive:

- the creation of a specific committee, the Approvals Committee for Telecommunications Equipment (ACTE), which will advise the Commission on the matters related to the technical regulations for terminal equipment,
- the application of the 'CE' mark of conformity, for placing the terminals on the market, complemented by an additional symbol when the equipment is suitable for connection to the public telecommunications network.

● Various recommendations on the harmonized introduction of new infrastructures and services such as ISDN, pan-European digital cellular radio, DECT (cordless telephony) and paging underline the importance of a Europe-wide telecommunications network.

Directives regarding competition on the market for telecommunications services,¹ on Open Network Provision (ONP),² public procurement and full mutual recognition of type approval certificates will complement existing legal instruments.

All the measures mentioned above require the availability and application of harmonized European telecommunications standards.

The EFTA countries for their part have decided to follow this legislative approach, on a purely conventional basis (Tampere Convention³).



Source: FRANCE TELECOM

2. PRODUCTION OF STANDARDS

In information technology

The Commission may also initiate or encourage the standardization bodies in the production of standards through 'mandates' entrusted to the standardization organizations under Directive 83/189/EEC and within the scope of 'framework contracts' concluded with them.

Concluded in 1985 and renewed in 1989 (for all sectors, not just IT), these contracts lay down the general contractual conditions for placing specific standardization mandates, the scope of the work and the general financial arrangements. In such cases the Commission bears a fair proportion of the costs of producing the standards.

The standardization organizations nevertheless retain the right to decide whether to accept the mandate, to determine the technical specifications, and to vote at the end whether or not to approve the specification as a standard.

So far about 180 mandates have been entrusted to CEN and CENELEC, with the collaboration of ETSI.

- The technical fields concerned range from the public or local networks (LANs...) to practical implementations such as file transfer (FTAM – File Transfer Access and Management) or electronic mail (MHS – Message Handling Systems).
- This standardization work is completed by the preparation of standards which will guarantee the free exchange of documents between different systems (ODA/ODIF – Office Document Architecture / Office Document Interchange systems).
- Some mandates cover new areas which have developed extensively, such as factory automation for advanced manufacturing equipment, which is one of the priorities of the Esprit programme, and the new ISPBX services (Integrated Services Private Branch Exchange).
- Other activities in the sector of identification and payment cards are related to the drafting of standards necessary to ensure compatibility of electronic cards and interworking of the new electronic payment services.

Bar coding for sorting parcels, electronic identification for transport, exchange of medical data, message handling between libraries ...

¹ So called 'services directive' establishing the right for private undertakings—independently of the services offered by the telecommunications administrations—to offer new services on the telecommunications network (Commission Directive 90/388/EEC of 28 June 1990).

² Which facilitates access of private companies to the public networks and certain public telecommunications services and lays down the basic rules for the adoption of telecommunications standards. This ONP Framework Directive 90/387/EEC was adopted by the Council on 28 June 1990.

³ Signed on 15 June 1988, entered into force on 1 October 1990.

these are among the technical areas in which strong standardization is in process, to remove the barriers which impede trade and information flow and to achieve the 1992 objectives.

- Finally, a part of the current standardization work concerns electrical safety and electromagnetic compatibility for terminals.

To date about 300 standards have been, or are in the process of being, drawn up in the field of IT.

Despite this positive picture, many things have still to be done in various areas, in particular for the videotex applications; home electronic system; character sets and their encoding; audio/video connection; electronic components; health care informatics; security standards...

In the telecommunications sector

A framework contract of a type similar to those signed with CEN and CENELEC has been concluded with ETSI to grant a financial contribution for the elaboration of ETSs, on the basis of a Council Recommendation (April 1989) calling on the Commission and the Member States to provide support for ETSI.

Of the tasks assigned to ETSI, the most important are concerned with the establishment of standards for the Integrated Services Digital Network (ISDN), mobile communications (GSM, radio messaging), HDTV, satellite communications¹, telematic services, terminal equipment and accesses to networks.

The current annual ETSI work programme aims to deliver 200-300 European Telecommunications Standards.

* * *

The level of support from the Commission and EFTA has been significant and will be pursued during the next years to cover standards needed to achieve the single European market objectives.

The implementation of the current programme of work by the European standardization organizations should lead to the production of approximately 500 harmonized standards in information technology and telecommunications by the end of 1992.

3. INITIATING PROJECTS OR PROVIDING SUPPORT FUNDS

In addition to these formal mechanisms of legislation and the standardization machinery, the Commission can intervene by initiating projects or by funding or subsidizing work which leads to more

effective standardization. This can be 'upstream' of the formal standardization process, for example in supporting studies aimed at establishing future requirements for standards; 'sidestream', in which case help is given during the process; or 'downstream', in which case measures are taken to ensure the effective implementation of agreed standards.

The most important downstream activity at present, for which an important financial contribution has been provided so far, is the work of establishing Conformance Testing Services (CTS).

The standardization policy also has its application in the management of research and development programmes funded by the Community in the IT and telecommunications fields, such as Esprit, Race or projects in other areas which include the IT dimension.

This may include:

- the reference to existing standards when applicable in procurement of equipment or execution of the research work;
- the link to be established with the standardization bodies;
- the transfer of results as a contribution to the standardization process.²

In some cases, the projects can act as a proving-ground for new standards and the experience can be fed back into the standardization arena. Indeed, it was early application of OSI standards in the Esprit programme (for communication between participants) which demonstrated that the basic OSI standards could not be used without the added value provided by functional standards. This experience created one of the driving forces for the European functional standards programme.

4. PROMOTION OF THE USE OF STANDARDS

The Commission promotes the use of European standards, in particular ISO standards:

- In public procurement, through the provisions of Council Decision 87/95/EEC (see above) and also some implementation projects such as Euromethod or Ephos (see fact sheet 8).
- In programmes which concern:
 - private users, as in the Tedis programme related to trade data interchange between manufacturers or service suppliers

¹ See 'Green paper on a common approach in the field of satellite communications in the European Community' which defines basic political orientations for opening up satellite communications in Europe (Communication from the Commission, COM(90) 490, of 14 November 1990).

² In particular the common functional specifications (CFS) arising from results of Race part I, available in the public domain and transferred to ETSI.

— public users, as in the Insis or Caddia programmes.

Within the Impact 2 programme, the Commission will also promote the development of Open Information Interchange, in cooperation with the European Standards Organizations. The demonstration and application of information standards, such as the Standard Generalized Mark-up Language (SGML) and Office Document Architecture (ODA), will be encouraged.

Other Europe-wide projects backed by the Commission, such as Cosine managed by the Rare association, aim at the rapid establishment of an environment in which data communications services can be made available to users in academic and industrial research organizations, by the use of common standards.

Moreover, programmes such as Drive in the transport sector or Aim in the medical field have already produced significant input for the standardization activity in information technology.

5. RECOMMENDATIONS OF THE GREEN PAPER

One objective of the Green Paper (which concerns all sectors) issued in October 1990¹ is to accelerate the delivery of European standards, especially those required for the implementation of EC product legislation.

The Green Paper, a consultation document addressed to all interested parties, calls on:

- European industry to give European standardization a much higher priority in this strategy for the internal market,
- standardization bodies to take further steps to improve their efficiency and to consider restructuring the European standardization system,
- governments to step up their promotion and support of standardization at national and at European level.

Summary

Community policy is to use IT standards to remove barriers to trade and communication.

In so far as the Community has the power to do so, it will align international, European and national standards.

European standards will need to move ahead of world standards where world standards cannot be delivered quickly enough or with sufficient precision.

Under the present system, which has been strengthened by the 'New Approach', the responsibility for decision-making in the development and adoption of IT standards rests with the supply industry and users via the national and European representative standards bodies.

The Community is taking energetic action to ensure that needs are met by means of legislation, of fully or partly funded initiatives in strategic areas, and also of recommendations to speed up the standardization process.

¹ COM(90) 456 final of 8 October 1990.

STANDARDIZATION MANDATES ENTRUSTED TO EUROPEAN STANDARDIZATION ORGANIZATIONS IN INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS

A. INFORMATION TECHNOLOGY

- Local area networks (LAN) – CSMA/CD, TOKEN-BUS, TOKEN-RING
- Wide area networks (WAN)
- File transfer access and management (FTAM)
- Office document architecture (ODA)
- Virtual terminals (VT)
- Message handling systems (MHS)
- Directory services
- OSI testing
- Character sets

- Programming languages
- Operating systems
- Computer graphics (GKS)
- Magnetic support media (tapes, disks, cartridges)
- CD-ROM
- Computer system interfaces (SCSI, ESDI)
- Identification & banking cards
- Electromagnetic compatibility (EMC)
- Bar-coding
- Audio, video & computers (AVC)
- Home electronic systems
- Electronic components
- Electronic data interchange (EDI) for trade
- Safety
- Ergonomics
- Advanced manufacturing technology (AMT)
- ISPBX

- Automatic identification of containers and vehicles¹
- Library OSI applications¹
- Standardization in medical informatics¹
- Remote database access¹
- Common application environment¹
- Network management¹

B. TELECOMMUNICATIONS

- ISDN videophone
- ISDN syntax-based videotex (multimedia videotex)
- Payment cards for telecommunications applications
- VSAT terminals
- 2 Mbit/s packet switching
- Multiprofile videotex terminals
- Data over radio (including GSM half rate speech codec)
- Mobile satellite terminals and satellite radio determination terminals
- ONP (ISDN, PSPDN and leased line accesses; voice telephony services)
- DECT

- HDTV¹
- PSTN accesses¹
- ISDN terminals for public telecommunications network¹
- Telecommunications terminals for disabled people⁽¹⁾
- Safety of mobile transmitters¹
- Approval requirements for PABXs¹

¹ Studies and investigation mandates.

STANDARDS ORGANIZATIONS

The Changing Scene

For a quarter of a century (roughly, 1960-85) IT standardization was undertaken mainly within the traditional framework of bodies with a general responsibility for national and international standards.

In recent years it has become clear that such arrangements are inadequate for IT. The traditional three-way division between bodies responsible for electrical, communications and other matters is unsuitable for a technology which combines all three areas. Moreover, the speed of development of IT and the enormous complexity of IT technical specifications require different mechanisms from those which were aimed at less volatile and less complex industrial sectors.

As a result, a massive change is under way. It has started, but is certainly nowhere near finished, and it is not yet possible to see where it will end. This fact sheet describes the current scene.

The most notable features in this changing scene are realignment in the relations between the formal standardization bodies – those granted specific rights and responsibilities for the production and publication of consensus standards – and the proliferation of bodies which have no such formal responsibility but which make an energetic contribution to the furtherance of IT standardization.

Formal international bodies

- Since 1987 the central body for IT standards has been a joint technical committee (JTC 1) formed by the **International Organization for Standardization (ISO)** and the **International Electrotechnical Committee (IEC)**.

JTC 1 is responsible for most areas concerned with the technology itself, other than those areas related to public communications services; but it is not concerned with applications of the technology, which continue to be handled within ISO (e.g. for IT applied to banking) or other specialist agencies (e.g. IATA for IT in air transport).

The members of JTC 1 are the national standards institutions, who have votes in those committees and sub-committees in which they participate. Through the national member bodies all interests (suppliers, users, etc.) can be represented. Non-voting but still influential participants are liaison organizations such as other international standards bodies and the Commission of the European Communities.

The work of JTC 1 is carried out by around 15 sub-committees and a very large number of working groups.

One of the aims of the newly established JTC 1 is to develop a more coherent strategy for IT standards, rather than the project-by-project approach which has been common until now but not always well coordinated.

Another aim is to accelerate the production of standards. Until now, the typical time-scales have been two years for a standard which follows well-established patterns, five years for a standard covering much new ground, and 10 years where the area is so new that the first task is to establish a framework for standardization, such as the OSI reference model. That is too slow. Nevertheless, it must be noted that ISO and IEC are taking practical steps to speed up their own procedures so as to be able to meet the need for faster standardization.



- The **International Telegraph and Telephone Consultative Committee (CCITT)** of the **International Telecommunications Union (ITU)** is responsible for drafting the recommendations which enable communications to take place between public telecommunications services. The range of CCITT's activity, despite its now ancient title, covers modern technology such as integrated digital networks; but it does not cover private local area networks, and covers only to a limited extent the equipment to be connected to public networks.

The voting members of CCITT are national governments, but in practice membership is largely delegated to the national telecommunications administrations.

- The **International Radio Consultative Committee (CCIR)**, another ITU organ, also contributes to the standardization process, in particular in the field of radio communications. For further details, see reference sheet 4.

Formal European bodies

Within Europe the move to bring together the standards bodies started a little earlier than at the international level and has gone further.

There is joint activity between:

- the **European Committee for Standardization (CEN)**
- the **European Committee for Electrotechnical Standardization (CENELEC)**
- and the **European Telecommunications Standards Institute (ETSI)**.

IT projects are handled by CEN, CENELEC or ETSI individually, by CEN/CENELEC jointly, or by CEN/CENELEC/ETSI jointly, according to the extent to which the individual project overlaps areas of responsibility.

Management and repartition of the programme of work is carried out by the tripartite **IT Steering Committee** (ITSTC) with equal representation of these three organizations. The Commission and EFTA have observer status on this committee.

The setting up of this committee to jointly manage and apportion the work programme between the three European standardization organizations has reinforced the efficiency of the European standardization system and has prevented the duplication of work.

As with their international counterparts ISO and IEC, the voting members of CEN and CENELEC are the national standards bodies and there are other non-voting forms of representation.

In the telecommunications sector, any of the following who demonstrate an interest in European telecommunications standardization are entitled to join ETSI:

- National administrations
- Public network operators
- Manufacturers
- Users and private service providers
- Research bodies
- Consulting companies.

In practice, the same people frequently represent their national standards bodies in both international and the equivalent European committees. The effect is what is needed: a natural tendency to make identical decisions at both levels and minimum adjustments to meet differing needs only when necessary.

The major cause of strain is probably that the European bodies tend to work faster than their world-wide equivalents, thus creating real prob-

lems of keeping in step. There is general agreement that in such a fast-moving sector as IT speed is essential: the European bodies cannot slow their pace.

Measures were taken in order to make European standardization more efficient and faster, in particular by the creation of what is called a "pre-standard" (ENV) adopted through a faster procedure and also the revision of the internal rules of CEN/CENELEC at the request of the Commission, to permit the adoption and obligatory transposition of European standards by weighted majority vote (instead of unanimity).

Under CEN/CENELEC rules, a draft European standard which receives a favourable vote from a qualified majority of member bodies is deemed to be adopted and is implemented by all.

In the event that a standard does not receive a favourable vote from a majority of the entire CEN/CENELEC membership, the votes of members from the EC Member States are counted separately and a qualified majority in favour requires the adoption of the standard by all EC member bodies and those EFTA member bodies which had voted in favour.

A similar procedure is also provided for in the rules of the European Telecommunications Standards Institute (ETSI).

Copyrights and patents... a source of delay?

Background information protected by intellectual property rights or patents sometimes has to be included in standards. This can pose serious problems if satisfactory conditions for the use of such information have not been obtained from the holders of such protected information. This is particularly the case in the telecommunications sector. Despite the existing ISO/IEC directives on the subject, the lack of clear rules at European level sometimes slow down the standardization work.

ETSI is therefore taking energetic measures, through an expert ad hoc group to find adequate solutions and practical means for the resolution of this issue in its field of competence (free use as far as possible or fair and reasonable terms).

Formal national bodies

Each Community country has one or more national standards bodies. In some countries there are separate bodies for electrotechnical, telecommunications and general standards; elsewhere responsibility is brought together in a single institution.

It is at this national level that all the interests concerned are considered after consultation. The national views which are put to the European and international bodies are in principle the consensus views of the various interests in each country.

The Commission is very concerned that the consensus should indeed reflect all views (particularly those of users, who have often been under-

represented) and has recently invited the national standards bodies to consider how a proper balance can be ensured. This initiative is not specific to IT. Under the 'New Approach' (see fact sheet 3) the responsibility for specifying the technical details associated with legislation is placed in the hands of the standards bodies. It is therefore vital that the technical committees are adequately balanced.

Bodies promoting standardization

A major development in recent years is the growth of 'pre-standardization' bodies at the national and regional levels. These have various forms and objectives, but common to them all is the aim of ensuring action in the development and exploitation of IT standards in ways complementary to those of the formal standards machinery.

They tend to be less bound by complex formal procedures than the official standards institutions and so can work faster and more effectively. The trend is therefore for a shift of much of the work of technical development and consensus-building out of the formal standardization bodies into the less official bodies. The result is that a well-advanced draft, suitable for rapid processing, can then be fed into the formal mechanisms.

Such bodies have long existed. One of the oldest is the European Computer Manufacturers' Association (ECMA), whose activity is the development of 'ECMA standards'. Though not standards in a strictly legal sense, these are often later adopted as international standards.

More recent European groups representing industry or users include in particular:

- The Standards Promotion and Application Group (SPAG), formed by major IT companies based in Europe (manufacturers and telecom operators). SPAG was one of the driving forces in the establishment of the CEN/CENELEC/ETSI programme of functional standards.
- The European MAP Users' Group (EMUG), established to provide input to the Manufacturing Automation Protocol (MAP) activity developed in the United States.
- OSITOP, set up to do the same for the related Technical and Office Protocol (TOP).
- X/Open, which is concerned with the standardization of operating systems based on AT&T's (American Telephone and Telegraph) proprietary UNIX system.

- CECUA, which acts in particular as the user consultative body of the European Commission.
- ECTEL (European telecommunications and professional electronics industry), which represent members' interests in particular in the fields of industrial policy and standardization.

The most important development in Europe is the establishment, within the CEN/CENELEC framework, of the **European Workshop for Open Systems (EWOS)**. This brings together both supplier-based bodies (e.g. ECMA and SPAG) and user-based bodies (e.g. EMUG and OSITOP). Its aim is to provide input to CEN/CENELEC and to promote international convergence through contribution to ISO in the development of OSI functional standards.

The recent recognition of the EDIFACT Board in the EDI sector (Electronic Data Interchange) as an associated standardization organization also corresponds to this delegation of technical tasks to private competent bodies.

Summary

The IT standardization scene is going through a period of rapid change which should help to produce a much-needed acceleration in the pace of standardization and to ensure a consistent strategic approach geared to the needs of all parties.

The most notable changes are the joining of the previously separate activities in the electrical, telecommunications and general areas, and the growth of complementary bodies dedicated to the promotion of IT standards.

The internal cross-linking between such bodies provides a force which maximizes the alignment between national, European and international standards.

The European standardization bodies have also made major efforts to respond to the increased demand for European standards in recent years, but this demand is outstripping supply in the countdown to the Community's deadline for achievement of the internal market, to which standardization has a central contribution to make.

With this in mind, in October 1990 the Commission issued a Green Paper designed to draw to the attention of producers and users of industrial products, in both the private and public sectors, the strategic significance of European standardization for the realization of the internal market.

EUROPEAN STANDARDS

Community policy is to achieve alignment of IT standards at all levels from national to world-wide. European standards – that is to say, standards issued by the European standards organizations – play a key role in achieving that, as well as in filling gaps where achievement is not yet possible. This fact sheet provides more information about these European standards, with particular emphasis on functional standards.

STATUS

In information technology

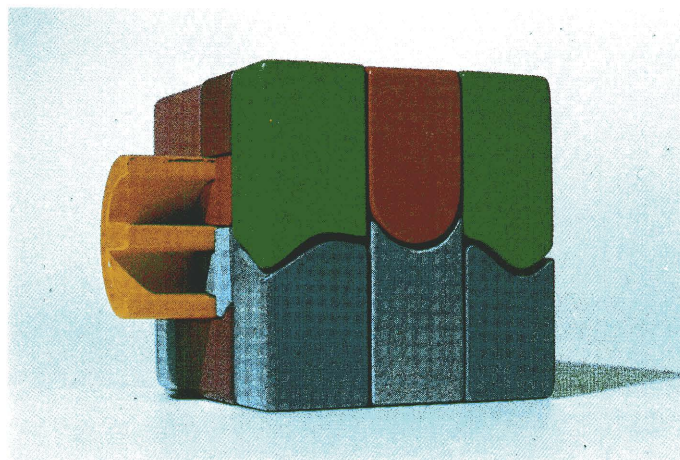
There are some senses in which European standards are mandatory, but they are frequently misunderstood.

The basic European standard is the EN, published by CEN or CENELEC, and applying to EC and EFTA countries. It is mandatory in that it must be adopted as a national standard and any conflicting national standards must be withdrawn.

That is the only mandatory force that it has by virtue of being a European standard.

Unless some other mechanism intervenes, such as legislation concerned with the particular subject to which the standard applies, an EN is voluntary: individual enterprises are free to follow it or ignore it in what they buy or sell.

- The EN represents the goal: the identical standard adopted in each country. CEN and CENELEC issue HDs and ENVs when the goal of an EN cannot be reached.
- An HD (**harmonization document**) allows some national deviations to exist temporarily (to allow a changeover period or to accommodate fundamental differences such as climate). An HD does not need to be converted into a national standard, but conflicting national standards must be withdrawn.
- An ENV (**European pre-standard**) is issued when there is a need for interim common specifications before the time is right for an EN. ENVs must be made available in each country, but need not be implemented, and conflicting



national standards can remain in place. Within three years an ENV must be converted into an EN or be re-issued as an ENV (in both cases with or without change), or be withdrawn.

In the telecommunications sector

In telecommunications, there have been two distinct phases of production of standards.

The first phase

Procedures were based on Council Directive 86/361/EEC. In this phase, the European Conference of Postal and Telecommunications Administrations (CEPT) issued recommendations, relying on international **recommendations** developed in CCITT, and interpreted at national level by the telecommunications administrations.

This procedure was superseded by the creation, in 1988, of the **European Telecommunications Standards Institute** (ETSI) which currently employs the same methods and procedure as CEN/CENELEC.

CEPT, whose 31 members (since October 1990) include the EC Member States and the EFTA member countries, has transferred to ETSI the activities which it previously performed in the formulation of recommendations and common technical specifications.

European Telecommunication Standards

ETSI produces¹ what are commonly known in the telecommunications sector as ETSS (European Telecommunications Standards),

- either in definitive form (**ETS**)
- or in provisional form (**I-ETS**), i.e. requiring further development

with the status of voluntary standards.

At the insistence of the Commission, ETSI satisfies the various criteria that a standards organization has to meet in order to be recognized as such. The criteria are:

- standstill,
- transparent procedures,
- implementation of the standard at national level.

If these criteria are satisfied, the ETS and I-ETS standards produced by ETSI are recognized as European standards (EN).

The procedure for the adoption of an ETS or an I-ETS is the same as that required for EN and ENV: it involves a public enquiry and a weighted national voting.

The public enquiry is carried out by the recognized national standards organizations which have the responsibility for establishing the national position for the vote, for the standstill and for the validity of the ETSS in the countries concerned.

The NET regime

Based upon appropriate procedures, the implementation of a number of these ETSS can become mandatory for the telecommunications administrations. They will then be called NETs (Normes Européennes de Télécommunications).

In 18 countries which signed a Memorandum of Understanding (MOU) in November 1985 there was a commitment by the signatories to refer to NETs in legislation governing type approval for connected equipment.

NETs, introduced by TRAC² and the EC, are mandatory for type approval of terminals connected to public telecommunication networks throughout Europe.

The second phase

A reshaping of the regulatory process is likely to be based on a new Council directive³ on **full** mutual recognition of type approval for terminal equipment. This directive is also intended to cover the marketing of terminal equipment and its connection to public networks. During this phase ETSI will produce ETSS as at present and a subset of the standard, known as Common Technical Regulation (CTR), will be commented on by TRAC before being passed by the CEC to the Approvals Committee for Telecommunications Equipment (ACTE) for formal approval.

Directive 86/361/EEC will be in this context repealed with expected effect from the second half of 1992, depending on the date of adoption of this new directive.

CTRs introduced by the committee ACTE will be applied in a mandatory way for type approval of terminals. This will replace the NET regime.

FUNCTIONAL STANDARDS

The term 'functional standard' is shorthand for the sentence which sums up what they are all about: 'If you want to provide function X, then use standards A, B, C... like this'.

A functional standard specifies how to use other standards ('base standards') to achieve a particular function.

The need for such an approach is dictated by the complexity of IT and the multiplicity of international standards, as well as by the numerous options contained in almost every IT standard – not to mention the possibility of conflicting interpretations where wording is less than ideal.

The fact is that mere conformance to international standards is by no means a guarantee of the compatibility of two systems; indeed, unless other steps are taken the chances of compatibility are very small.

Those other steps are the selection of particular standards and of particular options and interpretations allowed by them. This is what functional standards provide for the function they address, such as transfer of files or access to a packet-switched network.

CEN, CENELEC and ETSI have jointly developed a comprehensive plan for functional standards, setting out the principles (in memorandum M-IT-01) and enumerating the functions to be covered (in memorandum M-IT-02). This is confined to OSI and OSI-related areas.

Functional standards can receive the status of EN/ENV in information technology, and of ETS/I.ETS in the telecommunications sector.

The functional standards were initially issued as pre-standards (ENVs). This was necessary for several reasons.

¹ Preparation of the projects by an ETSI Technical Committee (ETSI-TC) and adoption of the projects by the ETSI Technical Assembly (ETSI-TA).

² Telecommunications Recommendations Applications Committee.

³ Common position adopted by the Council on 24 July 1990 with a view to the adoption of a directive on the approximation on the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity.

Although the basic concept is by no means new, it has never before been applied in this way and so extensively: the whole undertaking is pioneering. There can be no doubt that something similar is needed, but experience in use may indicate the need for adaptation to the changing environment.

Secondly, not all the international standards referenced have reached the state of final approval: several drafts are referenced and these might be subject to some change.

Lastly, it is not only in Europe that similar work is being undertaken. In such an international industry, it is axiomatic that every effort must be made to bring regional standards into complete alignment. The ENV leaves room for negotiation.

World-wide promotion of functional standards

In the USA there have been several initiatives including MAP (Manufacturing Automation Protocol), TOP (Technical and Office Automation Protocol), the NBS (National Bureau of Standards)¹ and COS (Corporation for Open Systems); in Japan there is POSI (Promotion of Open Systems Interconnection).

International work has started with JTC1, the new joint activity between ISO and IEC. So far, there has been good progress towards pulling the various initiatives together, both politically and technically. In the meantime, it is essential to continue rapid delivery of functional standards within Europe: without the coordination provided by functional standards, every supplier would be almost certain to make conflicting selections from the existing OSI and OSI-related standards and the benefits of OSI would be lost, possibly permanently.

The risk of regional differences, though unwelcome, is insignificant compared with the risk that if OSI were to make a chaotic start, the situation would be difficult to rescue later, politically, commercially and technically.

The present evolution shows that the European efforts are in fact contributing to a growing

awareness in other parts of the world and this should have a positive impact on the promotion of world-wide convergence.

PUBLICATION OF REFERENCES TO STANDARDS

1. Legal context

In the telecommunications sector

In compliance with Council Directive 86/361/EEC of 24 July 1986 on the initial stage of the mutual recognition of type approval for telecommunications terminal equipment, references to NETs have to be published in the Official Journal of the European Communities. The first two NETs (Access X.21 and Access X.25) were published on this legal basis in the Official Journal (OJ) no. C210/2 of 16 August 1989.

The same provision is contemplated, in particular, in the new directives on:

- the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity, on which a common position was adopted by the Council on 24 July 1990
- the establishment of the internal market for telecommunications services through the implementation of open network provision (Council Directive 90/387 EEC of 28 June 1990).

In Information technology

Although not explicitly stipulated in the EC legislation for the IT sector, similar measures have also been taken for publication in the OJ of references to ENs and ENVs.

2. In practice

Any information concerning standards can be obtained through periodic publications (catalogues) issued by the standardization organizations.

¹ Now called: National Institute of Standards and Technology (NIST).

CONFORMANCE TESTING

The CTS Programme

As part of Community action to promote IT and telecommunications standards, a comprehensive policy on conformance testing and certification has been developed and a major programme has been launched.

Before describing these, it is essential to clarify what is meant by these terms, since they are not always used in the same way.

Conformance testing is a technical task: testing products to determine whether or not they meet the requirements defined in a standard. The tests can be carried out by the supplier of the product (first-party testing) or an independent body (third-party testing).

Certification is essentially an administrative task: awarding the product a certificate if it satisfies the tests.

The criterion for being satisfactory is not only that tests have been passed, but that the tests themselves are considered to be adequate and the test laboratory is considered to be adequately competent and impartial.

For adequate impartiality it is not necessary for the tester to be an independent third-party test house. The test laboratories of a supplier may be regarded as sufficiently impartial where it can be shown that the objective results of the test, rather than commercial pressures, will decide whether or not a product passes.

However, since the purpose of having certification is to provide added confidence over and above that provided by the test operation, it is normally essential that certification is performed by, or at least controlled by, an independent body.

Are tests and certificates really needed?

IT users have been buying products for many years without them being independently tested or certified. Why is it necessary to bring in an added complication now?

The basic reason is that greater demands are being placed on products. Products have always been tested by the supplier, to check that they meet the supplier's own internal technical specifications for

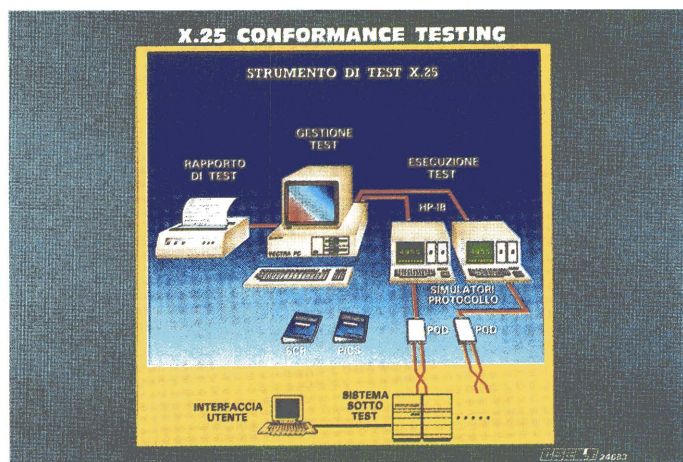
which the supplier is the most competent technical authority. Products are now required to conform to externally defined standards, and to do so with such precision that conforming products from any two suppliers can interwork.

Product suppliers need conformance tests as an aid to developing conforming products. Operators of networks – public or private, local or wide area – need conformance tests to be confident that their networks will not be harmed by connected products. Buyers need conformance tests to give them confidence that products have the required capabilities.

In the case of communications protocols there is an added technical reason. In trial interworking between two systems, it is impossible to reproduce at will many of the conditions with which a protocol implementation must cope, such as occurrence of errors or connection to different types of remote system.

Conformance tests simulate such conditions. They also permit checking to ensure that the products do not behave in a way which disrupts other communications over the same network. This is particularly important in the case of local area networks (LANs), most of which use technologies which are vulnerable to such disruption.

Nevertheless, it is important to realize that conformance testing cannot guarantee interworking. Even the most thorough tests can cover only a representative sample of the almost infinite number of combinations of conditions which can



Source: CSELT.

occur in practice. Most confidence can be gained from the combination of conformance tests with interworking tests between systems which will need to interwork.

Conformance testing services

A framework has been developed for the provision of conformance testing services within Europe. This is aimed at meeting the need for conformance testing within the wider context of harmonizing the European IT market and removing barriers to the flow of information.

The principles are the following:

- There should be one set of tests for any given technical area throughout Europe, and those tests should be internationally standardized.
- There should be a common technical authority for a given set of tests.
- The procedures and documentation, especially test reports, should be the same in all cases.
- Every test should be offered in at least two Member States and preferably more.
- The service should be made available regardless of the country of origin of the product.
- There should be mutual recognition of test results between countries, at least within Europe and preferably wider. A product tested in one country should be accepted without retesting in another country.
- There should be competition in the provision of testing services. The availability of alternative sources for the test should act as a natural mechanism to avoid potential problems of partiality, unreasonable pricing or excessive waiting times.
- The tests should be grouped according to the needs of the procurer and hence also of the supplier. If conformance to several inter-related standards is needed for the performance of a given user-perceived task, then the tests should cover the full set of standards.
- Such multi-standard testing services should cover the European functional standards (EN or ENV) and the international standards referenced therein.
- The testing services should become financially autonomous. Ongoing funding is not envisaged.
- Test centres should have sufficient independence to function as third-party testing laboratories.

Very considerable progress has been made towards the realization of this concept, with no sacrifice of any of the principles. It is a matter for real satisfaction that in IT it has been possible to do what has rarely been achieved in other sectors: to ensure that right from the time that widespread conformance testing begins, it is performed on a genuinely European basis.

In 1985 the Commission launched the first phase of the conformance testing services programme (CTS 1).

At the time, there was only limited activity in this area. A few testing services did exist, or were in the process of being established. While individually they were valuable, their collective impact fell far short of fulfilling Community policy on testing and certification, and they were isolated initiatives.

The timing was obviously right for a combined effort. The need was clear, enough had already been learned to be able to make sound decisions, investment had not yet reached levels where change for the sake of harmonization would be difficult or impossible, and it had become apparent that the task was so large that the mobilization of centres of excellence throughout Europe was essential.

The first phase of the programme put most emphasis on the development of OSI testing, while the following phases widen the scope.

A further shift is the transfer of responsibility. The Commission, which launched the initiative, will gradually bow out. The responsibility for matters such as test definition and certification will be taken on by the interested parties and hence will be widened, from the EC countries to EC plus EFTA countries, while commercial responsibility will pass into the hands of the organizations offering testing services.

I. The first phase: CTS 1

The Commission issued a call for tenders in 1985 in which test laboratories were invited to negotiate among themselves for the purpose of submitting combined proposals. The call brought in many attractive and complementary proposals, which added up to far more than what had been budgeted for. The decision was taken to expand the programme rather than to reject good proposals.

After a round of negotiation and restructuring to ensure that the proposals met all Community requirements – such as a fair balance throughout the Community – contracts were placed in 1986.

There were two main aims:

- establishing the groundwork for testing in the OSI and telecommunications area;
- extending the existing testing into other areas so as to achieve full alignment with Community policy.

The technical areas were the following:

- Interworking between systems for the transfer or manipulation of computer files (OSI-FTAM).
- Protocols which coordinate the dialogue of systems during interworking and ensure that deficiencies in the networks being used are overcome (OSI Session and Transport).
- Protocols for calls over circuit-switched or packet-switched data networks (OSI-WAN, X.21 or X.25).
- Protocols for one of the types of network often used for communication within a building or set of adjacent buildings (OSI-LAN CSMA/CD).

- Message handling systems (MHS) providing an electronic mail service (X.400 series).
- Teletex, a text communication system lying between telex and MHS in terms of functionality.
- Programming languages FORTRAN, COBOL and PASCAL.
- Graphical kernel system (GKS) for computer graphics.
- Software quality assurance.

The launch dates for the earliest of the new services (as opposed to enhanced versions of services already in operation) were in late 1987, with all the new services due to be launched before mid-1989.

All the contracts ended in 1988 or in early 1989, up to when Community funding covered approximately 50% of the costs.

The resulting services will all look the same to the user, regardless of the test laboratory used. Procedures, input forms and test reports will be the same everywhere.

Within the field of programming languages, harmonization has been achieved beyond the frontiers of Europe. The European PASCAL tests are applied under licence in the USA, China and Japan. The original COBOL 74 and FORTRAN 77 tests were from the USA and are used in Europe under licence; tests for COBOL 85 (the latest version) have been developed on the basis of reciprocal arrangements between Europe and the USA.

Companies submitting products for testing will be required to produce a standardized 'PICS' (Protocol Implementation Conformance Statement) and a 'PIXIT' (Protocol Implementations – eXtra Information for Testing), or equivalent documents where the standards are concerned with matters other than protocols.

Where a standard allows options, the product will be tested only for those options which have been claimed to be implemented in the PICS.

II. CTS 2

As CTS 1 projects moved from development into operation, phase 2 of the programme was launched in 1987.

Broadening the scope of the CTS topics and enlarging the numbers and the geographic distribution of the CTS contractors are among the key features of this phase.

Following a round of negotiations and restructuring so as to ensure that the projects met all the requirements laid down in the call for proposals, contracts were placed in 1988 and 1989.

The technical areas include:

- OSI application (FTAM-2, MHS-2, DS, ODA, SGML).
- OSI lower layers private data networks (Token Ring, Token Bus).

- Data buses (VME bus, Multibus-II, Fieldbus, IEC 625/IEEE 488.2).
- CAD/CAM and graphics systems (CGI).
- Operating systems (POSIX) and compilers (C language).
- Electromagnetic compatibility (EMC) testing for IT and telecommunications terminals.
- Computerised electrocardiographic systems (ECG) testing.
- Software quality assurance (SQA) service.
- Quality management assessment (QMA) service.
- Magnetic payment cards.
- Public data networks (PSDN, ISDN basic access B/D channels, terminal adapter).
- Modems (V.32/V.28) and G3 facsimile (Fax G3).
- Triple-X (X.3, X.28, X.29 PADs).

The resulting conformance testing services are expected to be operational in 1991.

More laboratories, not yet involved in the programme, may join the scheme at a later time. Organizations other than test laboratories have also been involved in the programme as subcontractors, mainly in the development of test tools. These organisations include leading European research laboratories, IT suppliers and consultancies.

III. CTS 2 bis

As CTS 2 projects moved to maturity, so did the development of standards. This latter called for further testing actions and, phase 2 bis of the programme was launched in 1989.

Following a round of contract negotiations and project restructuring so as to meet all Community requirements, contracts were placed in 1989 and 1990.

The new technical areas include:

- Public data networks (ISDN primary rate access and rate adaptation).
- GSM mobile terminals.
- Modems (V.21, V.22, V.22 bis, V.23).
- Very small aperture satellite dishes (VSAT).
- Electronic data interchange (EDIFACT).
- Electronic payment cards.
- On-line transaction processing (OLTP).

The resulting services are expected to be operational in 1992-93. A few non-Community organizations and laboratories are involved in the programme where they bring their expertise and share the results without receiving any Community funding.

IV. CTS 3

This phase covers mainly telecommunications standards which have most recently come to maturity.

The topics are:

- ERMES – digital pan-European radio messaging (paging).
- DECT – digital European cordless telecommunications.
- ISDN videophone.
- Videotex multiprofile terminals.
- Formal description techniques (FDT).
- Network management.
- Network interworking (for X.75 and parts of SS7 such as ISUP).
- Network interworking (for mobile systems e.g. SCCP, TCAP and MAP).

The CTS 3 projects should start by the beginning of 1991, to be completed in two or three years.

* * *

Further technical information concerning the CTS programme as a whole can be obtained from a separate set of fact sheets, entitled 'Conformance Testing Services', published by the Commission and available from Directorate General XIII (June 1990).



ORGANIZATIONS INVOLVED IN THE CTS PROGRAMME

Belgium

Alcatel Bell Telephone
CIG – Intersys Systems
Comité Electrotechnique Belge
Katholieke Universiteit Leuven
Régie des Télégraphes et des Téléphones
Sema Group Belgium SA
Standards Promotion and Application Group Services SA
Vincotte asbl.

Denmark

Computer Resources International A/S
Danish Technological Institute
Elektronikcentralen
Jylland Telephone A/S
Technical University of Denmark
Telecom Denmark, Telecommunications Laboratory
University of Aalborg.

France

Association Française de Normalisation
Association Française des Centres d'Essais pour les Réseaux locaux industriels
Association pour la Recherche et le Développement des Méthodes et Processus Industriels
Bull SA
Bureau Inter-Administration de Documentation Informatique
Centre National d'Etudes des Télécommunications
Sema Group SA.

Germany

Deutsche Bundespost/Fernmelde-technisches Zentralamt
Deutsche Gesellschaft für Waren-kennzeichnung GmbH
Forschungszentrum Informatik an der Universität Karlsruhe
Forschungszentrum Jülich GmbH
Fraunhofer Gesellschaft e.V
Gesellschaft für Mathematik & Datenverarbeitung
Hagenuk GmbH
Idacom Electronics GmbH
Kernforschungszentrum Karlsruhe GmbH
Medizinische Hochschule Hannover
Rheinisch-Westfälischer Tech-nischer Überwachungs-Verein e.V
Verband Deutscher Electrotech-niker Prüfstelle e.V.

Greece

National Research Centre 'Demo-kritos'
S. Seferiades & Associates
Zenon SA.

Ireland

Microelectronics Development Ser-vice Ltd
Telecom Eireann
The Irish Science and Technology Agency.

Italy

Centro Studi e Applicazioni in Tec-nologie Avanzate
Centro Studi e Laboratori Telecom-municazioni SpA
Istituto Italiano del Marchio di Qualità
Polimatica srl
Tecnologie e Strumenti per i Sis-temi Informativi Elettronici

The Netherlands

NV tot Keuring van Elektrotech-nische Materialen
The Netherlands PTT.

Portugal

Correios e Telecomunicações de Portugal
Instituto de Engenharia de Siste-mas e Computadores.

Spain

Laboratori General d' Assaigs i d' Investigaciones
Laboratorios de Ensayos e Investi-gaciones Industriales
Telefónica de España SA.

Sweden

Teletest (Televerket)
The Swedish Institute of Prod-uction Engineering Research.

United Kingdom

British Standards Institution
British Telecommunications Plc
ERA Technology Ltd
Mator Systems Ltd
The National Computing Centre Ltd
The Networking Centre Ltd
University of Leeds Industrial Ser-vices Ltd
X/OPEN Company Ltd.

Note: Partners in CTS 3 are not included in this list.

CERTIFICATION POLICY

Rationale

The open market, to which harmonized standards are intended to provide access, can be completely undermined if certification and testing are not in some way similarly harmonized. If the customer has no confidence that the product has been reliably tested, he will insist on further tests, recreating the barriers to trade that the harmonization of standards is designed to overcome.

The Commission has therefore added to the New Approach to technical harmonization the Global Approach to testing and certification. This aims to assure the quality levels throughout the European market needed to achieve general confidence.

Basic principle

Now that we have standards governing the manufacture of the products, the next step must be to ensure that there are testing and certification methods to prove that the manufactured products conform to those standards. Lastly, the bodies carrying out such tests or issuing certificates of conformity at national level must be technically competent, and the test results and certificates issued must be mutually recognized. To sum up, a certificate of conformity issued in one EC country must be recognized as valid in another.

The essential aim of this system is to avoid the need for duplication in each country of destination of tests already carried out and certificates already issued in the country of origin.

What is acceptable in one country should be acceptable in another

This formed the basis of the principle of mutual recognition of test reports and certificates.

Community policy

The object of Community policy is to determine the conditions most likely to inspire confidence on the part of the public authorities, consumers and manufacturers in the products marketed, in the producers and in the different systems operating in the Member States.

Very frequently the public authorities or economic operators lack a detailed knowledge of how the

system functions in another country (different administrative and technical customs, imprecise information, etc.).

It was therefore necessary to set in place a structure which would give the Member States or economic operators sufficient confidence in the manufacturers, laboratories or certification bodies.

Manufacturers want simple and effective means to demonstrate that their products satisfy certain quality criteria and that they are taking the precautionary measures stipulated by the public authorities.

In the context of the completion of the single market, certification represents one of the priorities of Community policy.



Source: FLANDERS TECHNOLOGY INTL

To this end, and in the framework of the Global Approach, the Commission supports the implementation of an overall structure. Accordingly, it has proposed a set of measures based on objective criteria, with the aim of creating the atmosphere of confidence needed to achieve uniformity and transparency as regards national certification and testing activities, be they public or private. On 21 December 1989¹, the Council adopted a resolution on a global approach to conformity assessment endorsing the Commission

¹ OJ C 10/1 of 16 January 1990.

communication of 24 July 1989¹. The resolution, which follows on from that of 7 May 1985², adopts a number of guiding principles for a European policy on conformity assessment: a consistent approach in Community legislation; generalized use of the European standards relating to quality assurance and the requirements to be fulfilled by manufacturers, testing laboratories and certification bodies; the setting-up of a testing and certification organization at European level in order to promote mutual recognition agreements; and the need to strengthen certain national technical facilities. The resolution also lays down the basic principles and conditions concerning the Community's relations with non-member countries in this sphere.

This policy, which has been defined for the entire range of sectors, gives rise to specific applications in the information technology and telecommunications fields. In some uses, the measures necessary to ensure mutual recognition require the adoption of appropriate directives (e.g. on telecommunications terminals).

The Member States already have well-established certification systems covering a large number of industrial sectors, frequently with the additional backing of the testing laboratories' own approval procedures. To replace them with a single European system would appear difficult and pointless. What matters is that these systems should inspire an equal degree of confidence among their users and that the certificates should be mutually recognized.

Under the new European system for testing and certification, IT products can be tested – to verify their conformity to the harmonized standards – by accredited testing laboratories and then certified, on the basis of the results of test reports, by certification bodies.

Test reports and certificates issued in each country will be mutually recognized.

Third party certificates of conformity and manufacturers' declarations of conformity will continue to coexist as alternative methods.

Setting up concrete measures

In information technology

Steps need to be taken to promote an overall structure:

1. In 1987, CEN, CENELEC and CEPT jointly drafted and adopted principles and outlines for a European system for testing and certification of IT products in Europe. The document that sets this out is the CEN/CENELEC/CEPT Memorandum M-IT-03, designed to ensure equivalence in the test results and mutual recognition of certificates among Member States.

2. These principles were put into effect when a Memorandum of Understanding designed to implement Memorandum M-IT-03 was signed in October 1988 by representatives from most of the West European countries³.

The signatories of this accord agreed to implement the following measures in each of the signatory states concerned:

- The introduction of the European system mentioned above.

A European Committee for IT Testing and Certification (ECITC) was set up, composed of national representatives of the Member States and EFTA countries designated by the national members of CEN/CENELEC and the telecommunications administrations.

This committee will coordinate the national activities in order to ensure compatibility and the mutual recognition of certificates, but the certificates themselves will continue to be issued on a national basis.

- A campaign to persuade the competent national organizations to join the system.
- The mutual recognition, by the bodies concerned, of the validity of the reports and certificates issued under the system in each Member State.
- The use of the same rules for the appointment of testing and certification bodies, based on the technical criteria laid down in the EN standards (45000 series for the laboratories and 29000 series for the manufacturers' quality assurance system).

3. The organization and the implementation of ECITC activities are well advanced. Actual responsibility for implementing the system will not rest with this committee, whose role is to serve as a coordination and appeals body in the event of disagreements.

Implementation will be carried out by the competent testing and certification bodies which will work together according to technical fields in the framework of what have been called agreement groups or 'recognition arrangements' (RAs).

At present there are two recognition arrangements recognized by ECITC (OSTC and ETCOM) and a third one (EMCIT) provisionally accepted:

- Open Systems Testing Consortium (OSTC), consisting of the partners responsible for carrying out the WAN (Wide Area Network) project under the CTS programme in the following areas:

¹ OJ C 231/3 of 8 September 1989.

² OJ C 136/1 of 4 June 1985.

³ Austria, Belgium, Denmark, Greece, Ireland, Italy, The Netherlands, Norway, Finland, France, Germany, Portugal, Spain, Sweden, Switzerland, United Kingdom.

- Message handling systems (MHS)
 - Teletex
 - FTAM
 - Transport and Session
 - OSI networks (X.21, X.25)
- Contact address: OSTC, Rue du Trone 12, B-1040 Brussels (phone: + 32-2-511.98.00).*

— European Testing and Certification for Office and Manufacturing Protocols (ETCOM) in the following sectors:

- Manufacturing message specifications
- Directory services
- Network management
- Various elements in the OSI lower layers for local area networks (LANs).

Contact address: SPAG, Avenue Louise 149, Box 7, B-1050 Brussels (phone: + 32-2-535.08.11)

— European Testing of Electromagnetic Compatibility of Information Technology Products (EMCIT):

Contact address: EMCIT Secretariat, c/o Bell Telephone Manufacturing Company, Francis Wellesplein 1, B-2018 Antwerpen (phone: + 32-3-240.77.89)

A fourth recognition arrangement (EQS) concerning 'quality system assessment and certification in information technology' is in the process of drafting and approval.

4. On 25 April, 1990 the Commission signed with EFTA and CEN/CENELEC a Memorandum of Understanding containing the objectives, principles and structure for the setting up of the **European Organization for Testing and Certification (EOTC)**, a European framework scheme for encouraging and managing, on the basis of a coherent approach, the development of European certification systems, mutual recognition agreements, and in general all conformity assessment issues in the voluntary sector (non-regulated sector). The implementation of EOTC in October 1990 is linked to the global approach for conformance testing and certification (Council Resolution of 21 December 1989) and will require the insertion of the IT and telecommunication activities into this new framework, within which ECITC becomes a sectoral committee.

In the telecommunications sector

In the field of telecommunications the approach to certification and testing is following a parallel path.

Means of attestation of conformance of products with telecoms standards which can be mutually recognized by different bodies and states are necessary if we want to eliminate technical barriers to the circulation of telecoms equipment and create a single Community market. Testing and certification are therefore a necessary complement to the standardization policy.

Furthermore, the future directive on the second phase of mutual recognition of type approval, and approximation of the laws of the Member States on the placing of telecommunications equipment on the market, on which the Council adopted a common position in July 1990, will certainly enhance the role of certified products.

Summary

Within the framework of this European policy, the economic operators will therefore:

- have access to European manufacturing standards covering their products;
- know that there is a presumption of conformity with the essential requirements relating to the production and marketing of products that have been manufactured, and declared to have been manufactured, in accordance with the harmonized standards (manufacturer's declaration which may also be printed on the form accompanying the product offered for sale);
- be aware that, if (in addition to, or instead of, the manufacturer's declaration) conformance tests have been carried out on request by an outside laboratory (third party testing) in a particular country, then such tests and certification will be recognized in the other Member States without the need for further verification.

Before long an EC mark of conformity will be put on the product (e.g. a piece of terminal equipment) certifying that it has been tested and is deemed to be in accordance with the essential requirements of the directives, as is currently the practice at national level.

EUROPEAN STANDARDIZATION AND CONFORMANCE TESTING IN INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS

PHASES	OPERATORS		SOURCES/INSTRUMENTS of EC intervention
1. Pre-standardization	Associated standardization bodies	EWOS EDIFACT board	Mandates
2. Standardization	European standardization organisations	ITSTC { CEN CENELEC ETSI	<ul style="list-style-type: none"> ● Council Directive 83/189/EEC of 28 March 1983 ● Council Decision 87/95/EEC of 22 December 1986 ● Council Directive 90/387/EEC of 28 June 1990 ● Mandates
3. Development of products	Industry		No direct EC intervention
Preparation of test specifications	CTS Programme etc...	Private and public partners ¹	CTS projects
4. Standardization of test specifications	European standardization organizations	ITSTC { CEN CENELEC ETSI	Mandates
5. Products conformance testing	Testing laboratories ¹	Private and public entities	No direct EC intervention
6. Certification	<ul style="list-style-type: none"> ● Coordination ensured through <ul style="list-style-type: none"> – EOTC (all areas) – ECITC (Sectoral Committee for IT) ● Certifying bodies 	Recognition Arrangements (RAs) <ul style="list-style-type: none"> ● OSTC ● ETCOM ● EMCIT 	<ul style="list-style-type: none"> ● Council Resolution of 21 December 1989 ● EOTC MOU² of 25 April 1990
7. Exploitation of a Community-wide market	Industry		<ul style="list-style-type: none"> ● Council Directive 86/361/EEC of 24 July 1986 ● New Council Directive on telecommunications terminal equipment including the mutual recognition of their conformity³ ● Commission Directive 88/301/EEC of 16 May 1988 ● Commission Directive 90/388/EEC of 28 June 1990
8. Public and private procurement	<ul style="list-style-type: none"> ● Users ● Service providers 		<ul style="list-style-type: none"> ● Council Directive 87/95/EEC of 22 December 1986 ● "Supplies" directives⁴

¹ Lists are given in the fact sheet series on 'Conformance Testing Services' (May 1990) obtainable from the CEC, DG XIII.

² Signed by CEC, EFTA, CEN and CENELEC.

³ Common position adopted by the Council on 24 July 1990.

⁴ Council Directive 77/62/EEC amended by Council Directives 80/767/EEC and 88/295 EEC.

PUBLIC PROCUREMENT

Council Decision 87/95/EEC requires reference to IT standards in public procurement.

This means that when organizations in the public sector procure IT products, they must demand conformance to relevant IT standards.

Specific reasons for the public procurement rules are:

- Public sector bodies have as much interest in achieving the benefits of standardization as any other organization. Moreover, the purchasing power of the public sector has a large effect on the whole market and can act as a lever for change on the market as a whole.
- These public bodies (and other users with the same interests) will only get the benefits if they act together; so long as they all act independently, they will place conflicting demands on suppliers and so give both themselves and the suppliers problems.
- Tendering specifications, based upon international standards or the equivalent European standards, avoid discrimination amongst suppliers and correspond to the practice increasingly followed under EC procurement and GATT rules.
- Reference to standards facilitates the exchange of information between administrations and such requirements are growing with the approach of 1992.

The Council decision provides a common starting point.

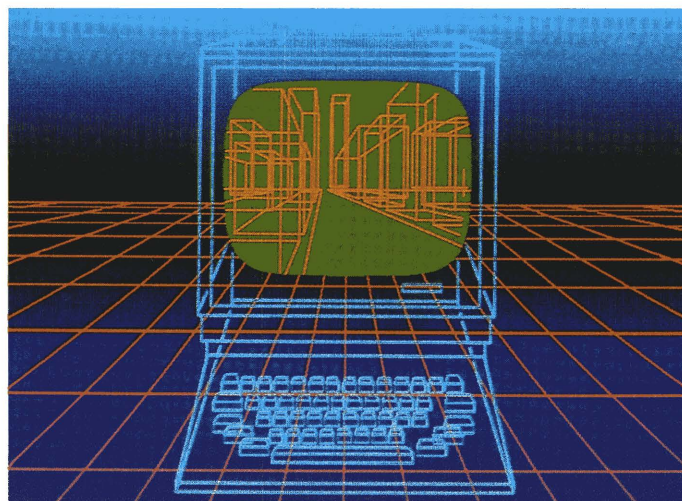
Basic requirements

Under the decision, public bodies are required to refer **to European standards and pre-standards or international standards as the basis for exchange of information and data and for systems interoperability** when procuring information technology equipment. Procurement covers purchase or other modes, such as lease or rental.

This basic requirement is subject to exceptions, firstly where reference would be inappropriate (see below), and secondly where procurement value is below Ecu 100,000.

The organizations classified as 'public procurers' vary between Member States. National and local government, and any associations which they form, are included everywhere. The situation with other bodies varies, depending on the national legal system and on the particular legal status given to a particular body in a particular Member State.

While specific exemptions are made by the decision (article 3.3) in the case of the equipment procured for the provision of public networks, and by the Treaty of Rome (article 223) in the case of procurement of armaments and certain secure systems, State-run telecommunication services and defence organizations are covered when they are procuring other IT equipment such as routine administrative systems (for example: purchase of a computer for the processing of the salaries of personnel).



Source: BSI

Derogations

Exceptions (derogations) are allowed:

- for operational continuity of existing systems, providing that there is a recorded strategy for future transition to the use of standards;
- where the standards are technically inadequate, or the means to establish conformity is lacking;
- where a project is 'genuinely innovative';

- where the use of standards would not be cost-effective; cost-effective does not simply mean cheapest purchase price but implies weighing all costs and benefits over the lifetime of the equipment.

These derogations remove the obligation to refer to standards when that would be inappropriate. There is one more derogation of a quite different type: procurement below Ecu 100,000 is exempted, provided that the use of standards in later procurement over that threshold is not prejudiced.

There is no implication whatsoever that standards are inappropriate for lower value procurement. Indeed, standards are just as critical for low-value items. Telephone handsets costing Ecu 20 and private exchanges costing Ecu 200,000 both need to follow the relevant technical standards.

Rather, the reason is that other forces – including the roll-on effect from the use of standards in high-value procurement – can lead to the necessary application of standards at the lower end of the cost range. The aim is therefore to avoid the bureaucracy that would be involved in applying the decision to the mass of low-value items which account for around 90% of orders but only a small portion of expenditure.

Even so, that Ecu 100,000 threshold is only provisional; the decision requires it to be reviewed within the next three years. It may be removed if it is being abused.

Relevant standards

The standards to which reference is required are European standards and pre-standards, international standards and, optionally, draft international standards.

Particularly important are the **functional standards** which provide needed selections from the range of options in the use of international standards, and do so in a harmonized way for Europe (the decision applies only to the EC, but the European standards are agreed in institutions in which both EC and EFTA countries participate and vote.).

The effect of the rules is that in all cases where more than one type of standard exists (e.g. an EN and an ISO standard) the procurer must make reference to at least one of them. The choice can also be left open to tenderers. If only one type exists, then use is mandatory if that standard is an EN, an ISO or a stable ENV, and optional if the standard is an unstable ENV or a draft international standard.

The technical area covered embraces all standards which may be used 'to provide the basis for the exchange of information and data and interoperability of systems'.

The most important standards in this area are those for Open Systems Interconnection (OSI) – indeed, OSI is explicitly mentioned in the preamble to the decision. Other standards concerned

with telecommunications are equally included (except where they come within the scope of Directive 86/361, which is concerned essentially with common technical specifications of the 'permission to attach' type for equipment which will be connected to public networks).

Other standards not directly concerned with interchange and interworking may also come under the decision. Some forms of interworking, for instance, may be dependent on programming language or data-base compatibility, and then reference to standards for those aspects would be required.

Self-regulation

To avoid the creation of a new bureaucratic avalanche of paper, the decision's requirements concerning public procurement are designed to be essentially self-regulating. No special actions are required when standards are applied. When one of the derogations is used as a reason for not using standards, the required action is limited to recording the reasons, when possible in the initial tender documentation.

The right to challenge such decisions is granted and certain reasons for challenge are identified, such as that another body has already done successfully what the challenged procurer says is impractical. Neither the rights nor the reasons are exclusive: a valid challenge can come from anybody for any sound reason.

It is anticipated that these mechanisms, requiring documentation of non-application of standards and granting the right to challenge, will result in most disputes being settled locally. Community procedures and paperwork will not be involved at all in cases where there is no dispute or a locally resolved dispute.

Summary

The Council decision is aimed both at helping public procurers to bring about a change which is in their own interest and at using the weight of public procurement to influence the whole market.

The decision concentrates on higher-value procurement, where a minority of orders account for the greater part of expenditure and have a powerful indirect influence on the remainder.

Derogations are allowed for cases where reference to standards would be inappropriate now, but most of the derogations are cast in a form which will make them less applicable with the passage of time.

The public procurement requirements of the decision should produce a marked acceleration in the pace of standardization.

* * *

For more information concerning IT standards in public procurement, the reader is invited to con-

sult the brochure entitled 'guide to the requirements of the IT standards decision and the revised supplies directive'¹, available from the CEC, DG XIII.E.4.

This guide explains the legal requirements for reference to IT standards in public procurement. It provides some advice on how such bodies can approach the task in a way which combines meeting the legal obligations with gaining maximum benefit for themselves.

TWO EXAMPLES OF PRACTICAL IMPLEMENTATION OF COUNCIL DECISION 87/95/EEC TO THE PUBLIC SECTOR

1. EPHOS – The European Procurement Handbook for Open Systems

Background

The EPHOS project will harmonize European procurement specifications related to open system standards in information technology. At the end of the project, these harmonized specifications will be published in the form of a 'European Procurement Handbook for Open Systems' for use by public sector purchasers wishing to achieve open IT systems as required by European legislation (Council Decision 87/95/EEC). The project proposal follows discussions in the advisory groups to the Commission (SOGITS and PPG) with leadership from France, Germany and the United Kingdom.

The contracting parties are:

1. CCTA
Riverwalk House
157-161 Millbank
London SW1 4RT
United Kingdom
Contact: Mr. L. Caffrey
2. Ministère de l'Economie des Finances et du Budget
Secrétariat Général de la Commission Centrale des Marchés D 30
41 Quai Branly
F-75700 Paris
France
Contact: Mr. M. Rocfort
3. Bundesministerium des Innern
Graurheindorfer Strasse 198
D-5300 Bonn 1
Germany
Contact: Mr. H. Wortmann.

The EPHOS project will start from the documentary base provided by GOSIP (Government Open Systems Interconnection Profile), the UK procurement work on open systems. It will give due priority to standardized profiles from CEN/CENELEC/ETSI, especially where they provide harmonized implementations of ISO standards and CCITT recommendations. Decisions taken in EWOS will also be taken into account. In the future, ISPs (International Standardized Profiles) at the international level will be given priority

when they become available to serve as the basis for European standards (ENs).

A leading part in the project has been taken by officials and experts from the French, German and British administrations. The preparations are to be conducted in an open manner with all Member States being regularly informed of progress and able to contribute to the document review process. A suitable communications infrastructure will be created to ensure that this document review is carried out on a broad European basis for the benefit of all Member States.

The handbook will be available for general use in Europe by all Member State procurement agencies and by the private sector at the conclusion of the project.

Scope

The scope of the EPHOS project is the establishment of a harmonized procurement procedure for open systems products which can be used by all Member States in their procurement contracts in the areas of file transfer, electronic mail and wide area communications. These harmonized procurement procedures will be presented in the form of a handbook to enable public administrations to satisfy the legislation (Council Decision 87/95/EEC) in a coherent manner.

A consistent European procurement requirement for information technology and telecommunications products is important for suppliers and procurers in creating a unified market, in line with the 1992 objectives, which will encourage a better ability to trade in a world market.

Current status

Following the signature of a contract in early 1990 between the contracting partners of the Member States and the Commission for a first phase of activity, the detailed work started in April 1990. An electronic communication infrastructure will allow all concerned parties in the 12 Member States to have direct access to and/or to be associated in the elaboration of the working documents to be produced within the EPHOS project. In parallel, the technical terms for the three topic areas are being organised and set up by the three responsible Member States:

- Message handling systems (MHS) UK
- File transfer (FTAM) France
- Wide area networks (WAN) Germany

Liaison channels to all Member States are being set up through the Public Procurement Group (SOGITS-PPG).

¹ Council Directive 77/62/EEC of 21 December 1976 amended by Council Directives 80/767/EEC of 22 July 1980 and 88/295/EEC of 22 March 1988.

A project manager, project editor and the national representatives responsible for co-ordination have been appointed. The finalized EPHOS text is expected to be completed by mid-1991.

In addition, the project will investigate other areas for their suitability for inclusion as a further project:

- legal guidance relating to Council Decision 87/95/EEC
- exchange of information in a secure manner
- electronic data interchange.

Further information is available from the EPHOS project management:

EPHOS Project Office
CCTA
Riverwalk House
157-161 Millbank
London SW1P 4RT, UK
TEL: +44 71 217 3140
FAX: +44 71 217 3449

2. EUROMETHOD

Background

EUROMETHOD is an initiative of the Public Procurement Group of SOGITS aimed to define a common European approach to the overall planning, development and maintenance of information systems.

EUROMETHOD is intended to be particularly useful for public procurers but it should also be applicable to:

- other people involved in procurement
- practitioners and users involved in system development
- service providers such as consultants, training and quality specialists.

Phases

Four phases have been proposed for EUROMETHOD, the launching of the two last phases depending upon the assessment of the results:

Phase I was aimed at validating the requirements after consultation of SOGITS-PPG.

Phase II is the feasibility study (current phase).

Phase III will be the definition of a structural model.

Phase IV will consider options and implement future work to maximize harmonization of theory and techniques.

Current status

EUROMETHOD is currently in phase II (feasibility study). This study will include the description of the tasks (scope), resources, time-scales, costs, risks and recommendations for phases III and IV of EUROMETHOD. It is being performed by a consortium of 11 organizations from eight Community countries.

Final results of phase II will be available in early 1991.

Additional information can be requested from:

- SEMA Group SA
16 rue Barbès
F-92120 Montrouge
Cedex
Tel: +33 1 46571300
Fax: +33 1 46569653

- CEC/DG XIII E.4
200 rue de la Loi
B-1040 Bruxelles
Tel: +32 2 235 0792
Fax: +32 2 235 9379

INTERNATIONAL COOPERATION

The Community IT standardization policy is based on the harmonized application of international standards (ISO, IEC) and recommendations (CCITT). The implementation of such a policy depends upon the progress made by the international standards organizations in developing the type of standards required.

The fact that such standards still require additional work to guarantee the interchange of data and the appropriate degree of interworking amongst various systems is considered as a transitional stage. The Community has strongly underlined its willingness to direct its efforts towards world-wide convergence.

Recent developments have shown that the Community policy is contributing to a better awareness of the role international standards now have to play:

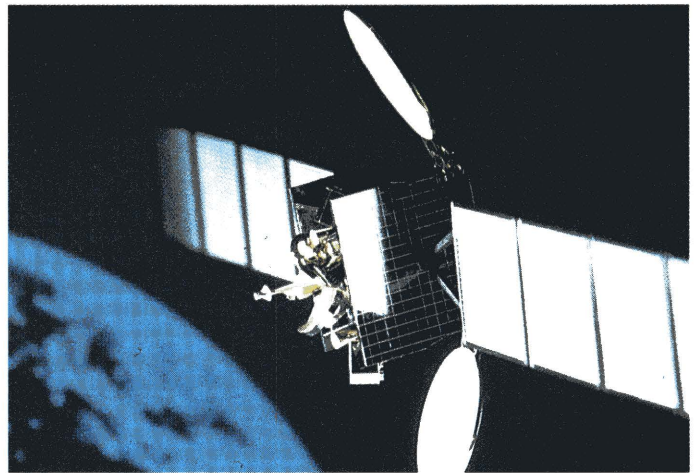
- similar policies have been adopted by other regional groupings and countries
- the work performed in ISO is being speeded up in many areas
- the concept of functional standards has been widely accepted; ISO and IEC have recognized the interest of producing standards which can correspond to the new requirements.

Cooperation with international standardization organizations

The Commission welcomed the efforts made by ISO and IEC in order to set up a joint entity, the JTC 1 Committee, which ensures coordination of technical work concerning mainly standardization in the IT field, in particular in OSI.

Through the acceleration of standardization work and the increased links with CCITT to avoid overlapping zones, the production of international standards which are essential for the harmonized implementation of standards can be optimistically expected.

The adoption by ISO of a programme of work comprising functional standards (called ISPs – International Standard Profiles) and the setting up of testing specifications are initiatives well aligned with the activities carried out in Europe to provide standards able to ensure information exchange world-wide.



Source: FRANCE TELECOM

The closer relationship recently agreed between ISO and CEN,¹ on the one hand and between IEC and CENELEC² on the other, with appropriate mechanisms to be put in place to avoid duplication of work, will also ensure convergence world-wide.

Cooperation with EFTA countries

For several years, the European Community and the European Free Trade Association have been pragmatically developing cooperation, on a multi-lateral or bilateral basis, to eliminate technical barriers to trade by the use of the same standards.

¹ ISO-CEN agreement of January 1989 on exchange of technical information between ISO and CEN.

² IEC-CENELEC agreement of November 1989 on exchange of technical information between both organizations.

Standards bodies of the EFTA countries are members of CEN/CENELEC and therefore participate in the technical work on the basis of common rules and have a similar commitment concerning the transposition of the EN standards. In January 1986, EFTA concluded in particular a contract with CEN/CENELEC for the partial funding of the cost of standardization work orders through 'mandates' (bons de commande) from the Commission. This contract, which also covers IT activities, was renewed in 1989.

The fact that these countries, through the General Secretariat of EFTA, have accepted practically all the mandates entrusted by the Commission to the European standardization organizations illustrates the identity of views and the degree of convergence reached on the objectives pursued.

The situation is evolving rapidly through EC-EFTA complementary sectoral agreements – as highlighted by the recent agreement¹ establishing a procedure of exchange of information in the field of technical regulations linked to Directive 83/189/EEC – as it has been through the negotiations (which concern all sectors) on a more formal framework between EC and EFTA countries within the scope of a treaty to be signed for the setting up of a 'European economic area'.

Cooperation with other countries

Within the scientific and technical agreements or arrangements existing between the Community and third countries (USA, Canada, China, India, Australia, etc.), the issue of standards is now more frequently addressed and links have been established to promote better cooperation in this field.

Finally, within the scope of the new relationships established with countries of East and Central

Europe, Asia, Africa and South America, the Commission has responded to many information requests from these countries, which have forged links with the European standardization bodies.

World-wide support of industry for the promotion of international standards

The Corporation for Open Systems (COS) in the United States and the Promotion of Open Systems Interconnection (POSI) group in Japan have been created to promote a world-wide functional application of standards. Efficient cooperation has been established between COS and POSI with SPAG, through the exchange of information and regular meetings; these groupings of manufacturers are committed to the development and implementation of OSI systems.

In this context, cooperation has also been established between the Community and NIST (National Institute of Standards and Technology) in the USA.

Summary

Far from creating regional isolation, European efforts in standardization have led to increased support for this work at international level and have promoted many initiatives to foster international cooperation in this field.

¹ Date of implementation: 1 November 1990.

A BEGINNER'S GUIDE TO STANDARDS

WHAT IS A STANDARD?

Standardization can cover products, procedures, methodologies (definitions, dimensions, methods, etc.), performance, safety requirements or manufacturing processes.

According to Directive 83/189/EEC of 28 March 1983 and the GATT code (1979), a standard is 'a technical specification approved by a recognized standardizing body for repeated or continuous application, with which compliance is not compulsory'.

But what actually is a standard?

A standard

- Is a technical specification, i.e. a document laying down a product's characteristics: levels of performance (e.g. number of watts, pixels, lux, etc.), safety, dimensions and requirements applicable to the product.
- Takes the form of a document drafted, approved or validated by a body qualified at national (AFNOR, DIN, BSI, etc.), European (CEN, CENELEC, ETSI, etc.) or international (ISO, IEC, etc.) level.
- Is drawn up using a method which involves all the interested parties (manufacturers, users and governments are all represented on committees or sub-committees set up within one or more competent standardization bodies).
- Is adopted in the general interest, following public enquiry by the relevant standardization body among its members, on the basis of a vote in accordance with that body's procedures.

A standard is available to everyone and does not have to be applied per se. It should be noted, however, that product conformity to harmonized standards is still the best way of meeting the essential requirements relating to safety, health and environmental or consumer protection. In addition, technical regulations may refer to standards and conformity to standards may be required, e.g. within the framework of European Community directives, so as to provide a common technical base for authorities awarding public procurement contracts.

In the field of information technology, a standard is a convention which defines the technical specifications for hardware and software which have to be complied with for the successive technical functions needed for communication.

In practice

The text of the standard is published and sold by the national standardization organizations. Any manufacturer may thus acquire it from them.

Lists and references to standards may also be obtained from the ever-expanding data bases.

At this point we need to define our terms and distinguish between ideas which are often confused:

1. A technical specification is the 'raw material' of the standard, though it may remain unchanged, i.e. be used by manufacturers but never become an official standard (either because no initiative is taken or because the draft standard is rejected).
2. A standard is approved by a standardization body, though its application is not compulsory. It is an agreement between the parties concerned.
3. A technical regulation – which is binding – is issued by the public authorities of a Member State and contains technical specifications which must be complied with.

Unless other mechanisms come into play, such as legislation on specific matters to which the standard is applicable, a standard is applied on a voluntary basis: businesses are free to comply with it or ignore it, in respect both of what they buy and of what they sell.

HOW ARE STANDARDS PRODUCED?

The basic pattern is more or less the same for national, European and international standards.

1. The initiator of a standardization proposal (which may be a national committee belonging to the ISO, a technical committee, a sub-committee or an external organization) submits its proposal to the relevant technical committee.

This technical committee, generally made up of experts from industry, makes a start on the technical work with a view to:

- taking account of the points of view of all the interested parties;
- reconciling different points of view;
- avoiding any reference in the draft standard to processes covered by patents or copyrights.

If there proves to be no alternative to using a technical solution with reference to such patents or copyrights in the text of the standard, the standardization body will endeavour:

- to obtain from the patent or copyright holder an agreement (declaration) or formal undertaking to grant a licence or right of use to the user;
- to determine in advance the financial conditions under which the patent or copyright holder will subsequently be prepared to grant the licences required for the standard.

The aim is ideally to obtain free use or reasonable conditions.

2. The technical document drawn up by the committee is then:
 - submitted to public enquiry, carried out by the recognized national standards organizations;
 - where appropriate, amended on the basis of observations made during the public enquiry, and then;
 - put to the vote for adoption as a standard in accordance with the procedures of the standardization body.

The aim is to reach consensus, i.e. general agreement as opposed to unanimity. What matters is to avoid any firm opposition to the essential aspects by a major interest group (industry, consumers, public bodies).

An appeal procedure protects the essential interests of the parties involved.

3. This mechanism applies at national and international level, and is, broadly speaking, the same for standards produced at European level.

Nevertheless, at the European level, a special feature has to be noted: the setting up of a mechanism of 'transposition' of the European standards, after their official adoption, into each national standardization system and the withdrawal of the existing conflicting or diverging national standards.

The national standardization bodies have to intervene, for the time being, to proceed officially with this transposition and appropriate publication.

THE OSI MODEL

To cope with the requirements of information technology and to cover the various levels of interaction, a system of open communication was needed, i.e. a system in which it was technically possible for the various pieces of equipment and terminals available on the market (computers, display screens, printers, keyboards, cameras, etc.) to communicate and to interwork without the need for expensive technical adaptation.

For instance, the telex system is considered to be open since equipment from the broadest range of suppliers is capable of sending and receiving messages from around the planet (the same is true of facsimile equipment).

The need for open systems of ever-increasing complexity has led to a more systematic approach being adopted, based on the OSI model produced by the ISO in 1977 (ISO/TC 97/SC16).

The OSI model is a set of rules to ensure exchange of information through an electronic network.

It should enable us to use computers in the same way as telephones, calling a correspondent without having to know what sort of equipment he has. Two simple examples of open systems are the railway network, which runs smoothly because of agreement on such questions as track gauge and signalling systems and road transport, using agreed highway and traffic signs.

The same sort of idea applies to telecommunications and information technology: the OSI model – which is set out in the ISO standard IS 7498 and then adopted by the CCITT under the designation X.200 – provides the necessary framework for categorizing and developing the functions and protocols (language to be used) needed for communication.

To use a different image, it is like an architect's standard plan, indicating not only the specifications for building a house but also, and most importantly, how and in what order (stages of construction) they are to be used: foundations followed by retaining walls, lintels, the roof, the dividing walls, etc. Each of these stages and construction elements has a clearly defined role and function.

In the OSI model, instead of construction stages, we have layers corresponding to very specific functions.

Manufacturers must follow this construction plan if they want their equipment and terminals to be compatible with those produced by other manufacturers or in other countries and capable of

working in conjunction without the need for technical adaptation.

Lastly, the OSI model provides the framework for drawing up the detailed standards – **basic standards** – vital to the successive technical functions needed to achieve open communication. Other standards – known as **functional standards** – stipulate how the basic standards are to be used to achieve a given technical function.

CONCRETE RESULTS : SIX EXAMPLES

Some results already obtained are outlined below to give an idea of the impact of standardization on everyday life.

- In the office, for example, progress in transmission standards allows the free exchange of electronic mail which nonetheless often has to be put on paper and re-transcribed to correct page layout differences.

These technical difficulties have now been eliminated. ODA (office document architecture), supported by research under the European Community's Esprit programme, standardizes the formatting of document exchange. And the MHS standard for electronic messaging also allows documents to be exchanged between different systems.

- Who hasn't had the experience of not being able to use a cash dispenser card in a different European country?

Today, the adoption of ISO standards for the cards themselves as well as the dispensers and their communication networks has considerably encouraged the development of this type of payment.

- The need for standards in advanced manufacturing technologies was quickly recognized by the Community.

Developed as part of the Esprit programme, the Communications Network for Manufacturing

Applications (CNMA) aims at making a range of information processing equipment inter-operative in its relationship with production lines.

This is a challenge at the leading edge of world-wide R&D in inter-computer communications.

- From mobile radios to car phones, from pocket-sized pagers to sophisticated, integrated systems, personal communications are on the move.

But only up to a point – crossing a border makes them inoperative as long as each country uses a different system.

From 1991, a single standard based on the GSM system will allow mobile phones to operate in all Member States of the Community, EFTA and beyond. In the same way, a European standard (ERMES) will allow the coordinated introduction of a pan-European radio messaging system by 1992.

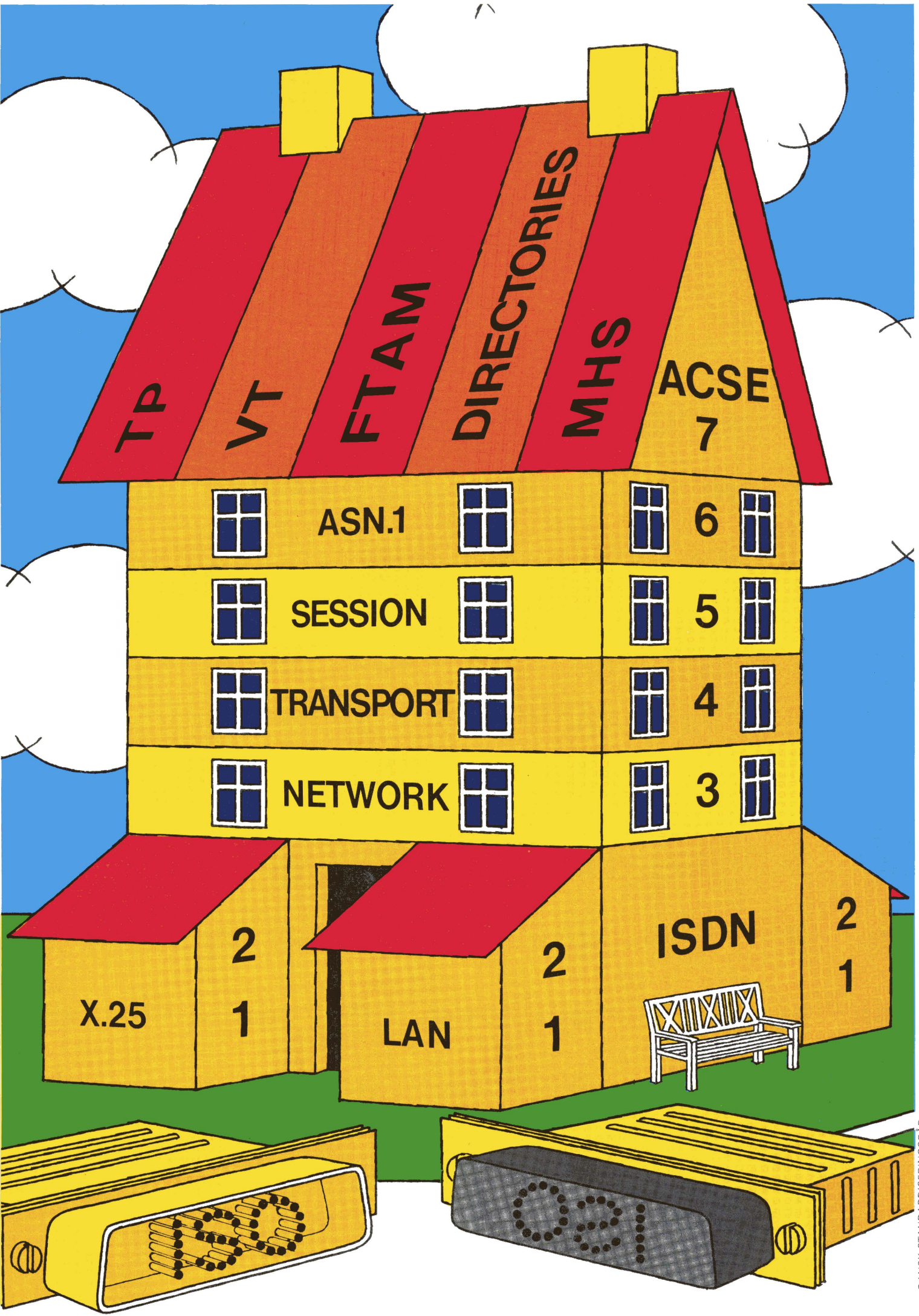
- High definition television. A cinema quality picture, CD quality sound. Developed within the Eureka initiative, work on HDTV standards is actively supported by the Commission. In time, this will allow the coordinated introduction of HDTV services to Europe.
- ISDN (Integrated Services Digital Network).

The communications highway of tomorrow. A decisive evolution in the telephone network. A revolution in the way of transmission.

In the early 1990s, ISDN will allow Europe-wide, high-speed transmission of voice, text, data and pictures – on a single line – simultaneously. Seeing who you phone will be one of its first implementations.

ISDN for trans-European communications represents the nervous system of the single European market.

If most of the work on the harmonization of technical standards had not already been done, the project would still be on the drawing-board.



TP

VT

FTAM

DIRECTORIES

MHS

ACSE
7



ASN.1



6



SESSION



5



TRANSPORT



4



NETWORK



3



2

X.25

1

2

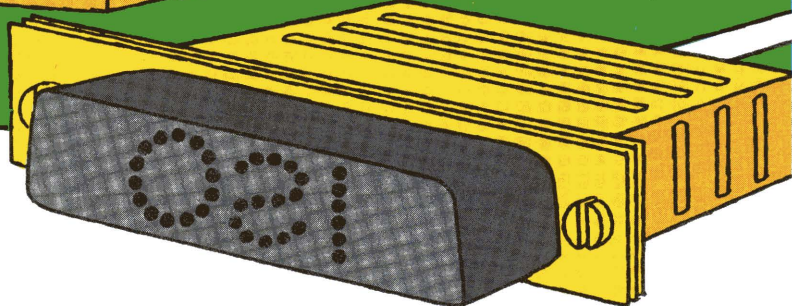
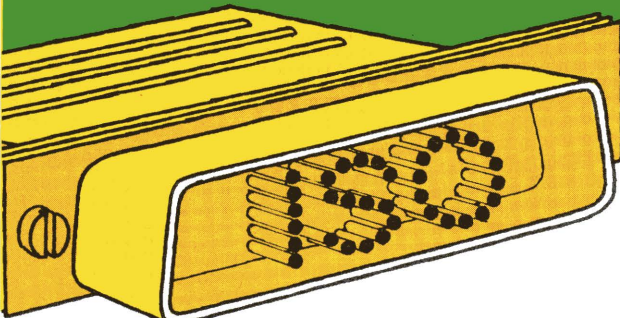
LAN

1

ISDN

2

1



The Basic Reference Model for Open Systems Interconnection (OSI)

The OSI Basic Reference Model (International Standard ISO 7498) is concerned only with the external behaviour of computer systems and partitions the functions involved in communication into a seven-layer hierarchy. An important feature of this partitioning is that it separates communications-oriented functions at lower layers from the more user-oriented functions at the upper layers.

There are two types of standards associated with each layer: the service definition describes the functions and facilities offered to the layer above, while the protocol specification defines the actions and responses exchanged between systems in order to provide the service. The family of standardized OSI protocols has rapidly grown, with many implementations of protocols already in use.

The **Application layer** is that in which the actual service sought by the end user is provided.

The **Presentation layer** provides a means of representing information in a data coded format in such a way that it preserves its meaning whilst resolving syntax differences.

The **Session layer** provides the services required to establish a session connection between two presentation entities and support for orderly data exchange interactions.

The **Transport layer** defines the rules for information exchange and manages end-to-end delivery of information within and between networks including error recovery and flow control.

The **Network layer** determines how data are transferred between computers and is mainly concerned with routing within and between individual networks.

The **Data link layer** comprises procedures and protocols for operating the communication lines. It shapes the data into standard blocks and sets up "frames" to convey them. It also offers a means of detecting and correcting message errors.

The **Physical layer** provides the physical means of sending data over lines, i.e. the electrical, mechanical and functional control of the data circuits.

Selection of base standards by layer

Layer	Service Definition	Protocol
Application layer	ACSE Association Control Service Element ISO 8649, ISO 8650	FTAM File Transfer Access and Manipulation ISO 8592
	ROSE Remote Operations Service Element ISO/IEC 9072	MOTIS Message Oriented Text Interchange System DIS 10000
	RTSE Reliable Transfer Service Element ISO/IEC 9066	VT Virtual Terminal ISO 9070
	CCR Commitment, Concurrency and Recovery Service Element DIS 9804, DIS 9805	JTM Job Transfer Manipulation ISO 8593
		DTP Distributed Transaction Processing DP 10000

Layer	Service Definition	Protocol
Presentation layer	Connection-oriented	
	Abstract Syntax Notation	
	ISO 8822	ISO 8823

Layer	Service Definition	Protocol
Session layer	Connection-oriented	
	ISO 8326	ISO 8327

Layer	Service Definition	Protocol
Transport layer	Connection-oriented	
	ISO 8072	ISO/IEC 8073

Layer	Service Definition	Protocol
Network layer	Connection-oriented	
	ISO 8348	ISO 8208 ISO 8878 DIS 8880-2

Layer	Service Definition
Data link layer	ISO 8886

Layer	Service Definition
Physical layer	ISO/IEC 10022

GLOSSARY

I. ORGANIZATIONS AND COMMITTEES

- ACTE** **Approvals Committee for Telecommunications Equipment**, a Community regulatory committee which in particular decides upon mandatory Common Technical Regulations (CTRs) within the framework of the new terminals directive.
- CCIR** **Comité Consultatif International pour les Radiocommunications**, one of the organs of the International Telecommunications Union (ITU).
- CCITT** **Comité Consultatif International Télégraphique et Téléphonique** (International Telegraph and Telephone Consultative Committee), a committee of the ITU with responsibility for public telecommunication services standardization.
- CEC** **Commission of the European Communities**, the Community institution responsible for proposing and managing Community policies.
In accordance with the provisions of Article 100a of the Treaty establishing the EEC, as supplemented by the Single European Act, measures for the approximation of the provisions laid down by law, regulation or administrative action in Member States which have as their object the establishment and functioning of the internal market are adopted by the Council of Ministers, acting by a qualified majority, on a proposal from the Commission in cooperation with the European Parliament and the Economic and Social Committee.
- CECC** **CENELEC Electronic Components Committee**, operating as part of CEN/CENELEC, represents the interests of national electro-technical committees of 15 European countries in the area of electronic components. Its object is to facilitate international trade by the harmonization of the specifications and quality assessment procedures for electronic components and by

*"A system is nothing more than the ordering
of the various parts of an art or a science
in such a way that they support each other
and that the last explains the first."*

*Abbé de Condillac
1749*

Source: OLIVETTI

the grant of an internationally recognised mark, and/or certificate of conformity. The components produced under the CECC system are acceptable in all member countries without further testing.

CECUA	Confederation of European Computer User Associations , an independent body whose aim is in particular to act as a consultative and advisory body to the CEC.
CEN	Comité Européen de Normalisation (European Committee for Standardization) whose members represent the EC and EFTA countries. The goal of CEN in European standardization is the elimination of differences in national standards, thereby eliminating technical barriers to trade.
CENELEC	Comité Européen de Normalisation Electrotechnique (European Committee for Electrotechnical Standardization); membership as with CEN. Same objective as CEN.
CEPT	Conférence Européenne des administrations des Postes et des Télécommunications (European Conference of Postal and Telecommunications Administrations) with European telecommunications members from 31 countries including all EC and EFTA countries.
EACEM	European Association of Consumer Electronics Manufacturers.
EBU	European Broadcasting Union , a professional association of broadcasters, the activities of which comprise Eurovision.
EC	European Community , comprising the European Economic Community, the European Coal and Steel Community and Euratom (European Atomic Energy Community).
ECITC	European Committee for IT Testing and Certification , a committee set up to coordinate the relevant national activities in order to ensure compatibility and the mutual recognition of certificates. Composed of national representatives of the Member States and EFTA countries designated by the national members of CEN/CENELEC and the telecommunications administrations, it is intended as the sectoral committee for information technology within the EOTC framework.
ECMA	European Computer Manufacturers' Association , whose activity is in the field of standardization. Membership includes all major West European manufacturers and many of the major US manufacturers, through their European offices.
ECSA	European Computing Services Association , a confederation of services industries in 17 countries across the European continent.
ECTEL	European telecommunications and professional electronics industry , an association created in 1985 to deal with all questions of concern to the members of ECREEA (European Conference of Radio and Electronic Equipment Associations) and EUCATEL (European Conference of Associations of Telecommunications Industries) in the field of standardization, markets, EC initiatives and CEPT activities towards harmonization.
ECTUA	European Council of Telecommunications Users' Associations , an association whose objectives are to represent the common interests of European users and direct their views at the appropriate organizations; in particular the European Parliament, the Commission of the European Communities (CEC), the European Free Trade Association (EFTA), the European Conference of Postal and Telecommunications Administrations (CEPT) and the European Telecommunications Standards Institute (ETSI).
EECA	European Electronic Component manufacturers' Association
EFTA	European Free Trade Association , whose members are the following countries: Austria, Finland, Iceland, Norway, Sweden, Switzerland.
EMUG	European MAP Users' Group , which coordinates European interests in the MAP (Manufacturing Automation Protocol) activity.
EIUF	European ISDN Users' Forum . The objective of the forum is to provide an open platform for users and potential users of ISDN where they have the possibility to discuss and identify their needs in relation to ISDN.

EOTC	European Organization for Testing and Certification , a European framework scheme for encouraging and managing, on the basis of a coherent approach, the development of European assessment systems, mutual recognition, agreements and in general all conformity assessment issues in the voluntary sector.
ETSI	European Telecommunications Standards Institute (Institut européen des normes de télécommunication).
Eurobit	European association of manufacturers of business machines and data processing equipment.
EWOS	European Workshop for Open Systems , a body concerned with the development of OSI functional specifications. EWOS was formally established on 15 December 1987 by the following eight associations: CEN, CENELEC, SPAG, ECMA, OSITOP, RARE, COSINE and EMUG. CEN provides administrative support.
IEC	International Electrotechnical Committee , sets world-wide standards in electrotechnical area. Now cooperates with ISO in JTC 1 for IT standards.
ISO	International Organization for Standardization , sets world-wide standards for any subject not covered by a specialist agency; now cooperates with IEC in JTC 1 for IT standards.
ITAEGM	IT Advisory Experts Group on advanced Manufacturing technologies. It works under ITSTC.
ITAEGS	IT Advisory Experts Group on Standardization. Advises ITSTC, prepares and maintains CEN/CENELEC memoranda. It works under ITSTC.
ITAEGT	IT Advisory Experts Group for private Telecommunications networks. Works under ITSTC.
ITSTC	IT Steering Committee responsible for the joint CEN/CENELEC/ETSI programme, i.e. the planning of the work, assigning of technical tasks for elaboration of standards, setting of priorities.
JTC 1	Joint Technical Committee 1 of IEC and ISO, with responsibility for IT standards.
OTL	OSI Testing Liaison group. This advisory group, created under the aegis of ECITC, has as one of its principal tasks the role of providing a forum to help to achieve harmonization between OSI recognition arrangements.
PPG	Public Procurement Group. Under the aegis of SOGITS, a group of officials who are well acquainted with the problems public sector purchasers face when procuring IT products and services. The group advises the CEC on the formulation of Community policy in relation to IT procurement in the public sector.
SOGITS	Senior Officials Group for Information Technology Standardization , an advisory group within the framework of the 87/95/EEC Council Decision, whose members represent the 12 Member States: it is consulted on all standardization issues, delivers an opinion before standardization work is commissioned and plays a central role at various stages in the implementation of the Community policy.
SOG-T	Senior Officials Group 'Telecommunications' : similar, in composition and role, to SOGITS but in the telecommunications sector.
SPAG	Standards Promotion and Application Group , a group of IT suppliers who share a common interest in promoting standardization and now also the name of a service company (SPAG SA).
TRAC	Telecommunications Recommendations Applications Committee , a consultative committee under the aegis of CEPT which intervenes in the procedure for qualification of ETs into CTRs. TRAC's comment is passed by the Commission to a regulatory committee (ACTE) for formal approval.
X/Open	A non-profit, international and industry-wide organization, dedicated to the development of an open, multi-vendor, common applications environment based on de facto and international standards.

II. PROGRAMMES in IT and T¹

AIM	Advanced Informatics in Medicine.
CADDIA	Cooperation in Automation of Data and Documentation for Imports/exports and the management and financial control of the Agricultural markets. Aims: <ul style="list-style-type: none">● Establishment of an efficient electronic system for data exchange in the fields of administration of the European customs union, the agricultural market organizations and the statistical procedures for trade at the European level,● Coordination of initiatives taken by the national administrations,● For purposes of standardization, adaptation of developments within the Community to industrial and commercial standards.
CTS	Conformance Testing Services programme, a Commission initiative to provide tools and facilities to meet the growing market requirements for testing services as a means of paving the way to an open market for truly interoperable IT and T systems.
COSINE	Cooperation for Open Systems Interconnection Networking in Europe, a Eureka project launched to establish an advanced communication network infrastructure for scientific and industrial research institutes across Europe.
DELTA	Developing European Learning through Technological Advance.
DRIVE	Dedicated Road Infrastructure for Vehicle safety in Europe.
ESPRIT	European Strategic Programme for Research and development in Information Technology. Aim: to develop basic technologies for the European IT industry: to promote European industrial cooperation in pre-competitive R&D in IT; to contribute to the development of internationally accepted standards.
EUREKA	An initiative launched in 1985 which offers a framework for cross-border cooperation between enterprises and research institutes. Eureka has developed parallel to EC research and involves the EC countries and the Commission, the EFTA countries and Turkey (20 partners). Whereas EC R&D is mainly concerned with precompetitive and basic research, Eureka projects are nearer to the market (industrial level). However, there are certain Eureka projects concerned with basic research.
INSIS	Inter-Institutional Integrated Services Information System, designed to improve the circulation of information between Member States' administrations and the Community institutions. Insis is a development programme for new IT applications and for new communication services.
RACE	Research and development in Advanced Communications technologies in Europe, a precompetitive Community R&D programme for the development of advanced technologies in the field of telecommunications. Its aim is to contribute in particular to the introduction in Europe of Integrated Broadband Communications (IBC), taking into account the evolving Integrated Services Digital Network (ISDN) and national introduction strategies; to new and improved information services; to the preparation of international standards; and to the development of common functional specifications for operators.
RARE	Réseaux Associés pour la Recherche Européenne, the association of European research networks and their users which undertook the technical work of the Cosine specification phase.
TEDIS	Trade Electronic Data Interchange Systems. Aim of the programme: to coordinate the development of electronic data interchange systems and the promotion of EDIFACT standards.

¹ Which contribute to the standardization process.

III. TECHNICAL TERMS

Conformance testing	Action by a third party, demonstrating adequate confidence in the conformity of a duly identified product, process or service with a specific standard or other normative document.
CIM	Computer Integrated Manufacturing , a set of IT systems also known under the name of factory automation.
CTR	Common Technical Regulation , a harmonized technical standard which is made mandatory through appropriate procedures to ensure compliance with 'essential requirements' for telecoms terminals. An ETS is qualified in whole or in part to later become a CTR.
EC mark	A passport for the product which complies with the applicable EC legislation and in particular the essential requirements of the directives. The product bearing this mark will pass the EC frontiers freely.
ETS	European Telecommunications Standard , a standard for telecommunications of a voluntary nature.
European standard	A standard which has been approved pursuant to the statutes of the standards bodies with which the Community has concluded agreements.
FTAM	File transfer access and management , acronym for a linked set of OSI standards at layers 6 and 7 which define standard methods for performing FTAM functions used in exchanging and handling computer files.
Functional standard	A standard which specifies how the basic standards are to be used and in which order to achieve a given technical function.
Harmonized standard	A technical specification (European standard or harmonization document) adopted by a European standardization organization, on the basis of a mandate (order voucher) from the Commission in accordance with the provisions of Directive 83/189/EEC.
IBC	Integrated Broadband Communications , a system of terminals, cables, switches, computers and satellites that will handle telephone, television, data transmission and new services in an integrated way. Broadband means it will have a large transmission capacity, sufficient to handle many television channels as well as telephone and other services.
ISDN	Integrated Services Digital Network , a concept in which all forms of information to be transmitted (voice, data, text, image) are translated into digital bitstreams and can be handled within a common network infrastructure.
ISPBX	Integrated Services Private Branch Exchange , same as PABX but for ISDN.
IT	Information Technology , electronic or similar means of processing, communicating or storing information such as data, text, graphics, images and sound.
LAN	Local Area Network , a network installed in a building or in a campus to interconnect computers, terminals, printers, etc., within that building or campus.
MAP	Manufacturing Automation Protocol , a set of standards for the interconnection of computers used for the application of OSI in a manufacturing environment. MAP has been driven primarily by General Motors.
MHS	Message Handling Systems , the name of the electronic mail service defined in the CCITT X.400 series of recommendations.
NET	Norme Européenne de Télécommunications , a technical specification which is given mandatory force, according to the legal procedures established in Directive 86/361/EEC. In the future NET will be replaced by CTR.
OSI	Open Systems Interconnection , a large and growing set of standards concerned with communication and interworking between computer systems of all types from any suppliers, on the basis set out in the OSI Reference Model.

OSI reference model	The framework into which all OSI standards fit. The reference model divides all the communications and interworking functions into seven layers.
OSITOP	Open Systems Interconnection/Technical and Office Protocol , an association coordinating European interests in the TOP (Technical and Office Protocol) activity.
PABX	Private Automatic Branch Exchange – commonly known as switch-board for private use.
PICS	Protocol Implementation Conformance Statement , a standardized form provided by the test laboratory concerned and filled in by the client – in particular in the context of conformance testing – to specify to the test laboratory the conformance claims for the product and the configuration of the product as supplied for testing.
PIXIT	Protocol Implementation Extra Information for Testing , a standardized form provided by the test laboratory concerned and filled in by the client to give all necessary additional information required to test the product.
Protocol	A formally specified set of conventions governing the format and control of inputs and outputs between two communicating systems.
Profile	A functional standard in a preliminary form.
PSDN	Packet Switched Data Network , a digital communication network in which the information is handled in packets.
PSTN	Public Switched Telephone Network , acronym for the dial-up telephone network.
Standard	A technical specification approved by a recognized standards body for repeated or continuous application, compliance with which is not compulsory.
Technical specification	A specification contained in a document which lays down characteristics required of a product, such as levels of quality, performance, safety or dimensions, including the requirements applicable to the product as regards terminology, symbols, testing and test methods, packaging, marking or labelling.
TOP	Technical and Office Protocol . A complement to the MAP standards aimed at office and engineering applications, initially promoted by Boeing.
Videotex	A means of retrieving information stored centrally on a computer. It is based on an interactive information retrieval system using as terminal equipment suitably modified standard television receivers or other equipment (e.g. micro computers). It is characterized by its user-friendly access to interactive on-line services. Within the EC, three major videotex systems have emerged since the early '70s: Prestel in the UK, Teletel in France and BTX in Germany.
Videotext	Same as Videotex but interactive dialogue between the system and the user is not technically feasible.
WAN	Wide Area Network , similar in concept to a LAN (see above) but installed over greater distances and hence normally requiring public telecommunication network facilities for its inter-site links.
X.25	A CCITT recommendation which defines the interfaces to public packet-switched data networks.
X.200	A CCITT recommendation for adoption of the OSI model.
X.400	A series of protocol standards for international electronic mail inter change.

* * *

Note: These definitions do not necessarily correspond to those officially adopted by the standardization organizations. They are intended as a brief layman's guide to the subject.

STEPS IN COMMUNITY STANDARDIZATION AND PUBLIC PROCUREMENT POLICY

1973 **Council Directive 73/23/EEC** of 19 February 1973 (Official Journal L77/29 of 26 March 1973) on the harmonization of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits.

1977 **Council Directive 77/62/EEC**¹ of 21 December 1976 (Official Journal L 13/1 of 15 January 1977), coordinating procedures for the award of public supply contracts. This directive introduced standards into the public procurement activities of the Member States.

1979 **Council Directive 79/783/EEC** of 11 September 1979 (Official Journal L 231/23 of 13 September 1977), adopting a multiannual programme (1979-83) in the field of data processing.

1983 **Council Directive 83/189/EEC** of 28 March 1989 (Official Journal L 109/8 of 25 April 1983), laying down a procedure for the provision of information in the field of technical standards and regulations.

1984 **Council Recommendation 84/549/EEC** of 12 November 1984 (Official Journal L 298/49 of 16 November 1984), concerning the implementation of harmonization in the field of telecommunications.

1985 **Council Resolution** of 7 May 1985 (Official Journal C 136/1 of 4 June 1985) on a new approach to technical harmonization and standards.

1986 **Council Directive 86/361/EEC** of 24 July 1986 (Official Journal L 217/21 of 5 August 1986), on the initial phase of the establishment of the mutual recognition of type approval for telecommunications terminal equipment.



Source: FRANCE TELECOM

Council Directive 86/529/EEC of 3 November 1986 (Official Journal L 311/28 of 6 November 1986) on the adoption of common technical specifications of the MAC/packet family of standards for direct satellite television broadcasting.

1987 **Council Decision 87/95/EEC** of 22 December 1986 (Official Journal L 36/31 of 7 February 1987) on standardization in the fields of information technology and telecommunications.

1989 **Council Resolution** of 27 April 1989 concerning standardization in the fields of information technology and telecommunications.

Council Directive 89/336/EEC of 3 May 1989 (Official Journal L139/19 of 23 May 1989) on the approximation of the laws of the Member States relating to electromagnetic compatibility.

1990 **Council Resolution** of 21 December 1989 (Official Journal C10/1 of 16 January 1990) on a global approach to conformity assessment.

¹ Amended by Council Directives 80/767/EEC of 22 July 1980 (Official Journal L 216/1 of 18 August 1980) and 88/295/EEC of 22 March 1988 (Official Journal L 127/1 of 20 May 1988).

1990 **Council Directive 90/387/EEC** of 28 June 1990 (Official Journal L 192/1 of 24 July 1990) on the establishment of the internal market for telecommunications services through the implementation of open network provision.

Proposal for a Council Directive of 20 June 1990 on the approximation of the laws of the Member States concerning telecommunications terminal

equipment, including the mutual recognition of their conformity (COM (90) 263 final (Official Journal C 187/40 of 27 July 1990)).

Council Directive 90/531/EEC of 17 September 1990 (Official Journal L 297/1 of 29 October 1990) on the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors.

*
* *
*

Other reference documents (CEN/CENELEC/ETSI/ITSTC memoranda)

- M-IT-01** The concept and structure of functional standards for information technology.
- M-IT-02** Directory of functional standards (for interworking in an OSI environment).
- M-IT-03** Certification of information technology products.
- M-IT-04** Directory of European standardization requirements for advanced manufacturing technology and programme for the development of standards.
- M-IT-05** Directory of private telecommunication network standards (and technical reports).

STANDARDS ORGANIZATIONS AND TECHNICAL BODIES IN BRIEF

INTERNATIONAL ORGANIZATIONS

ISO

The International Organization for Standardization is a non-treaty organization created in 1947. Its members are the national standards organizations of about 90 countries. The scope of ISO technical work covers all fields of standardization with the exception of electrical and electronic engineering, which by agreement are the responsibility of the International Electrotechnical Commission (IEC). The results of ISO technical work are published in the form of international standards (IS).

There are various types of liaison; in 1988 a special liaison was set up to promote OSI – Open Systems Interconnection. The ISO comprises more than 170 technical committees (TCs). The central body for IT standards, amongst these committees, is the **Joint Technical Committee** (JTC 1) set up together with the IEC in the field of information technology (for more information concerning JTC 1, see fact sheet 4).

IEC

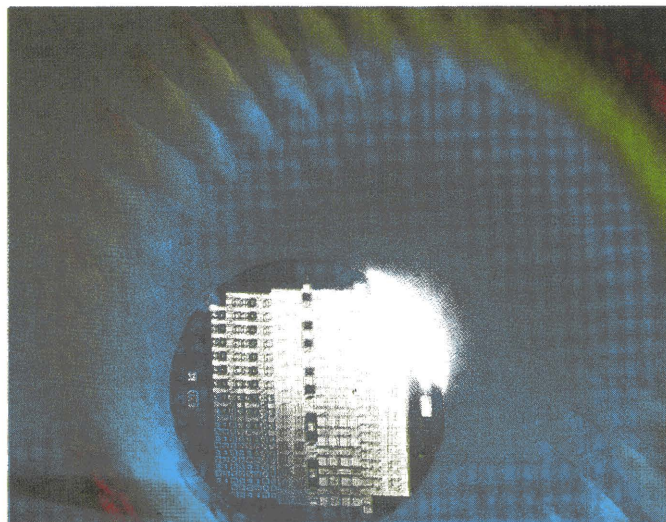
In structure, the International Electrotechnical Commission – created in 1906 – is very similar to the ISO; it has fewer members and they come mainly from the industrialized countries.

The IEC works in the fields of electrical engineering and electronics. The most important areas concerned are:

- electromagnetic compatibility
- electrical safety
- electronic components
- audio-video interconnection
- home electronic systems.

CCITT

The Comité Consultatif International Télégraphique et Téléphonique is one of the five permanent organs¹ of the ITU (International Telecommunications Union), a treaty organization created in 1865 with 164 member states (as of November 1990). Participants in the CCITT technical work are primarily operators, manufacturers, service providers and industrial groups as well as international organizations.



Source: EUROCHIP

CCITT activity covers standardization in telecommunications. It is responsible for the drafting of recommendations of a voluntary nature, the best-known being X.400 for message handling systems.

These recommendations are published under the form of books: Yellow Book (1981), Red Book (1985), Blue Book (1988).

CCIR

A permanent ITU body, the CCIR members are primarily ITU countries' administrations. Recognized private operating agencies, scientific, industrial and international organizations also participate.

CCIR's work is mainly on radio communications and the establishment of technical bases for international sharing and management of the frequency spectrum resource and the geostationary satellite orbit.

CCIR's technical recommendations are prepared with a view to the development, in particular through standardization, of compatible performance and the interconnection of radio systems worldwide.

¹ The four others are: (1) Comité Consultatif International pour les Radiocommunications (CCIR); (2) International Frequency Registration Board (IFRB); (3) Bureau de Développement des Télécommunications (BDT); (4) Secrétariat Général – all headquartered in Geneva.

Note: Although the IFRB (International Frequency Registration Board) is not a standardization body, it may be useful to clarify that its role 'is to ensure that all member countries of the ITU apply correctly the provisions of the radio regulations in the use of the radio frequency spectrum and the geostationary-satellite orbit, including the implementation of frequency assignment plans which may have been adopted by the member states at world radio conferences'.

STANDARDIZATION IN EUROPE

Standardization has received a considerable boost in Europe since 1984, with new impetus from companies participating in the European Strategic Programme for Research and Development in Information Technology (ESPRIT). SPAG, the Standards Promotion and Application Group, initiated by major Esprit participants, has notably contributed to making OSI usable in practice through the concept of functional standardization. Industrial cooperation is therefore reinforcing the coordination of activities by the European standards organizations in IT and telecommunications – CEN, CENELEC and ETSI – initiated by the Commission at the same time.

CEN and CENELEC

CEN (Comité Européen de Normalisation) created in 1961, is the independent cooperative association of 18 West Europe standards institutions that are, at the same time, members of ISO.

The 18 West European electrotechnical commissions in the IEC are also members of CENELEC (Comité Européen de Normalisation électrotechnique) which was set up earlier in 1958.

On the initiative of the Commission, these European organizations were encouraged to cooperate, in the IT field, as were ISO and IEC later in JTC 1 (1987).

The cooperation of CEN¹ and CENELEC¹ in the IT field has led to new working methods (procedures) and new document types (ENV, ETS and I-ETS).

In the IT field, CEN and CENELEC are striving for the adoption of international standards (ISO and IEC) so that national standards are harmonized in this way.

CEN and CENELEC lay the emphasis on getting standards applied in general and on the use of standards by means of conformance testing and certification. These standards in particular can then be used as a reference in public procurement.

The drafting of test specifications is an activity that CEN and CENELEC has taken up as a new objective in the course of 1989.

CEPT

The European Conference of Postal and Telecommunications administrations (CEPT) is the result of the efforts by the European countries to bring about widespread cooperation in the field of posts and telecommunications.

This organization – open to all European administrations – was founded in 1959 and its 31 members² include the EC and EFTA countries.

Aims

The essential aims of the CEPT were the establishment of closer relations between member administrations, and the harmonization and practical improvement of their administrative and technical services.

The CEPT issued recommendations, relying on international recommendations developed in CCITT and interpreted at national level by the telecommunications administrations.

A new role since 1988

This procedure and role were modified by the creation of ETSI, to which the CEPT transferred its technical standardization activities.

Currently, the main objective of the CEPT is to coordinate the technical and commercial policies of its members in the postal and telecommunications sectors.

ETSI

Background

The European Telecommunications Standards Institute (ETSI) is an autonomous body³ set up in 1988 in order substantially to reinforce the production of telecommunications standards in Europe.

The Commission of the European Communities proposed, in its Green Paper (1987), to establish an institute with a flexible and modern organization facilitating the elaboration of standards within the field of telecommunications. The launch of ETSI was announced in spring 1988. ETSI is independent from the CEPT and open to the participation on equal terms of all the actors playing a role on the European telecommunications scene (national administrations, public network operators, manufacturers, users and private service providers, research bodies ...).

¹ Non-profit-making technical organization located in Brussels and operating under Belgian law.

² Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, Turkey, United Kingdom, Vatican City, Yugoslavia. Bulgaria, Hungary, Poland, Rumania and Czechoslovakia entered the CEPT in October 1990.

³ Association founded in accordance with the French law of 1 July 1901 and the decree of 16 August 1901.

There are currently more than 250 members, representing the leading European telecommunications interests, and 40 observers¹. The Commission and the EFTA Secretariat act as counsellors for ETSI.

Output

ETSI is a European standardization organization comprising at present 17 technical committees (TCs) and dealing with the following fields of interest:

- telecommunications
- information technology/telecommunications grey zone, in cooperation with CEN (Comité Européen de Normalisation) and CENELEC (Comité Européen de Normalisation Electro-technique)
- broadcasting/telecommunications grey zone, in cooperation with the EBU (European Broadcasting Union).

ETSI is setting new standards for the whole of Europe in all areas of telecommunications and related fields, in particular:

- to allow the new Integrated Services Digital Network (ISDN) to be operated on a commercial basis by 1993,
- to define the pan-European digital cellular network in order to allow the operation of mobile digital telephones throughout the continent,
- to respond to needs for broadband and satellite communication.

* * *

Coordination between ETSI and CEN/CENELEC was necessary to avoid duplication of effort in standardization and also to ensure that the basic principles of standardization, such as transparency

and independence of particular interests, were respected.

This led to a commitment by ETSI to cooperate with CEN and CENELEC.

Three years after the establishment of ETSI the three European standardization organizations have decided a Joint President Group, in which matters of common interest in all sectors can be discussed, and have negotiated a cooperation agreement for the handling of technical work. (see also fact sheet 4 about the tripartite ITSTC.)

EWOS

EWOS is not a formal standards institution but a workshop. The purpose of this workshop is to prepare draft functional standards in the OSI field; these then go to CEN-CENELEC and/or JTC1 for approval and are presented as ENVs (European pre-standards) and/or ISPs (International Standard Profiles).

EWOS is one of three regional workshops for developing functional standards, the others being:

- AOW: Asia/Océania Osi Workshop
- NOIW: Nist Osi Implementors Workshop.

These three workshops not only see to the development but also to the world-wide harmonization of functional standards. World harmonization takes place with the help of the Coordination Committee for Regional Harmonization. The distribution of labour, with development and harmonization in workshops on the one hand and ratification and presentation of the formal standards institutions on the other, was accepted in JTC1 and CEN-CENELEC in 1988 in order to satisfy the industrial demand for a faster process and bring together the interests of JTC1 and CEN-CENELEC in functional standardization.

¹ Status of observer gives the right to speak, not to vote.

LIST OF STANDARDS ORGANIZATIONS AND TECHNICAL BODIES

International

- CCIR** Comité Consultatif International
des Radiocommunications
Place des Nations
CH-1211 Geneva 20
Tel: +41.22.7305111
- CCITT** Comité Consultatif International
Télégraphique et Téléphonique
Place des Nations
CH-1211 Geneva 20
Tel: +41.22.7305111
- IEC** International Electrotechnical Commission
Central Office
3, rue de Varembe
CH-1211 Geneva 20
Tel: +41.22.7340150
- ISO** International Organization for Standardization
Central Secretariat
1, rue de Varembe
Case postale 56
CH-1211 Geneva 20
Tel: +41.22.7341240
- ITU** International Telecommunication Union
Place des Nations
CH-1211 Geneva 20
Tel: +41.22.7305111

European

- CEN** Comité Européen de Normalisation
Rue de Stassart, 36
B-1050 Brussels
Tel: +32.2.5196811
- CENELEC** Comité Européen de Normalisation Electrotechnique
Rue de Stassart, 35
B-1050 Brussels
Tel: +32.2.5196871
- CEPT** Conférence Européenne des Administrations des Postes
et des Télécommunications
Liaison Office
Case postale 1283
CH-3001 Berne
Tel: +41.31.622079

EOTC	European Organization for Testing and Certification Rue de Stassart, 33 B-1050 Brussels Tel: +32.2.5196969
ETSI	European Telecommunications Standards Institute Route des Lucioles – Sophia Antipolis, BP 152 F-06561 Valbonne-Cedex Tel: +33.92.944200
EWOS	European Workshop for Open Systems Rue de Stassart, 36 B-1050 Brussels Tel: +32.2.5117455

National

European Community Members of CEN

Belgium

IBN Institut Belge de Normalisation
Avenue de la Brabançonne 29
B-1040 Bruxelles
Tel: + 32.2.7349205

Denmark

DS Dansk Standardiseringsrad
Aurehøjvej 12
Postboks 77
DK-2900 Hellerup
Tel: + 45.31.623200

France

AFNOR Association Française de Normalisation
Tour Europe — Cedex 7
F-92080 Paris La Défense
Tel: + 33.1.42915555

Germany

DIN Deutsches Institut für Normung eV
Burggrafenstraße 6
Postfach 1107
D-1000 Berlin 30
Tel: + 49.30.26011

Greece

ELOT Hellenic Organization for Standardization
Acharnon Street 313
GR-11145 Athens
Tel: + 30.1.2015025

Ireland

NSAI The National Standards Authority of Ireland
Glasnevin
IRL-Dublin 9
Tel: + 353.1.370101

Italy

UNI Ente nazionale italiano di unificazione
Piazza Armando Diaz 2
I-20123 Milano
Tel: + 39.2.72001141

Luxembourg

ITM Inspection du Travail et des Mines
26, rue Zithe
Boîte postale 27
L-2010 Luxembourg
Tel: + 352.499211

European Community Members of CENELEC

CEB Comité Electrotechnique Belge
3, Galerie Ravenstein, Bte 11
B-1000 Bruxelles
Tel: + 32.2.5120028

DEK Dansk Elektroteknisk Komite
Strandgade 36, st
DK-1401 København K
Tel: + 45.31.575050

UTE Union technique de l'électricité
Place des Vosges, 4
La Defense 5 - Courbevoie - Cedex 64
F-92052 Paris La Defense
Tel: + 33.1.47685020

DKE Deutsche Elektrotechnische Kommission
im DIN und VDE
Stresemannallee 15
D-6000 Frankfurt A.M. 70
Tel: + 49.69.63080

ELOT Hellenic Organization for Standardization
Acharnon Street 313
GR-11145 Athens
Tel: + 30.1.2015025

ETCI Electro-Technical Council of Ireland
Fitzwilliam place, 1
IRL-Dublin 9
Tel: + 353.1.612591

CEI Comitato Elettrotecnico Italiano
Viale Monza 259
I-20126 Milano
Tel: + 30.2.257731

SEE Service de l'énergie de l'Etat
Avenue Marie-Therèse, 34
Boîte postale 10
L-2010 Luxembourg
Tel: + 352.44203020

The Netherlands

NNI Nederlands Normalisatie-Instituut
Kalfjeslaan 2
Postbus 5059
NL-2600 GB Delft
Tel: + 31.15.690390

NEC Nederlands Electrotechnisch Comité
Kalfjeslaan 2
Postbus 5059
NL-2600 GB Delft
Tel: + 31.15.690390

Portugal

IPQ Instituto Português da Qualidade
Rua José Estêvão, 83-A
P-1199 Lisboa Codex
Tel: + 351.1.523978

IPQ Instituto Português da Qualidade
Rua José Estêvão, 83-A
P-1199 Lisboa Codex
Tel: + 351.1.523978

Spain

AENOR Asociación Española de Normalización
y Certificación
Fernández de la Hoz 52
E-28010 Madrid 15
Tel: + 34.1.4104851

AEE Asociación Electrotécnica
y Electrónica Española
Avenida de Brasil 7
E-Madrid 20
Tel: + 34.1.5567664

United Kingdom

BSI British Standards Institution
2 Park Street
UK-London W1A 2BS
Tel: + 44.71.6299000

BEC British Electrotechnical Committee
2 Park Street
UK-London W1A 2BS
Tel: + 44.71.6299000

EFTA Members of CEN

Austria

ON Österreichisches Normungsinstitut
Heinestraße, 38
Postfach 130
A-1021 Wien 2
Tel: + 43.222.267535

Finland

SFS Suomen Standardisoimisliitto r.y.
5 A 7 Bulevardi
P.O. Box 205
SF-00121 Helsinki 12
Tel: + 358.0.645601

Iceland

STRI Technological Institute of Iceland
Keldnaholt
IS-112 Reykjavik
Tel: + 354.1.687000

Norway

NSF Norges Standardiseringsforbund
Homansbyen
P.O. Box 7020
N-0306 Oslo 3
Tel: + 47.2.466094

Sweden

SIS Standardiseringskommissionen i Sverige
11 Tegnégatan
P.O. Box 3295
S-10366 Stockholm
Tel: + 46.8.6135200

Switzerland

SNV Schweizerische Normen-Vereinigung
Kirchenweg, 4
CH-8032 Zürich
Tel: + 41.1.3844747

EFTA Members of CENELEC

ÖVE Österreichischen Verband für Elektrotechnik
Eschenbachgasse, 9
A-1010 Wien
Tel: + 43.222.5876373

SESKO Finnish Electrotechnical Standards Association
P.O. Box 134
SF-00211 Helsinki 21
Tel: + 358.0.69631

The Icelandic Council for Standardization
Technological Institute of Iceland
Keldnaholt
IS-110 Reykjavik
Tel: + 354.1.687000

NEK Norsk Elektroteknisk Komite
Harbitzalléen 2, Skøyen
Postboks 280
N-0212 Oslo 2
Tel: + 47.2.526950

SEK Svenska Elektriska Kommissionen
Kistagången, 19
Box 1284
S-164 28 Kista Stockholm
Tel: + 46.8.7507820

CES Comité Electrotechnique Suisse
Postfach
CH-8034 Zürich
Tel: + 41.1.3849111

SOME RELEVANT COMMUNITY ACTS

- Council Directive 83/189/EEC of 28 March 1983
- Council Resolution 85/C136/01 of 7 May 1985
- Council Directive 86/361/EEC of 24 July 1986
- Council Decision 87/95/EEC of 22 December 1986
- Council Resolution 90/C10/01 of 21 December 1989
- Amended proposal COM (90)263 final for a Council Directive on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity.

COUNCIL DIRECTIVE

of 28 March 1983

laying down a procedure for the provision of information in the field of technical standards and regulations

(83/189/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Articles 100 and 213 thereof,

Having regard to the proposal from the Commission ⁽¹⁾,

Having regard to the opinion of the European Parliament ⁽²⁾,

Having regard to the opinion of the Economic and Social Committee ⁽³⁾,

Whereas the prohibition of quantitative restrictions on the movement of goods and of measures having an equivalent effect is one of the basic principles of the Community;

Whereas barriers to trade resulting from technical regulations relating to products may be allowed only where they are necessary in order to meet essential requirements and have an objective in the public interest of which they constitute the main guarantee;

Whereas it is essential for the Commission to have the necessary information at its disposal before the adoption of technical provisions; whereas, consequently, the Member States which are required to facilitate the achievement of its task pursuant to Article 5 of the Treaty must notify it of their projects in the field of technical regulations;

Whereas all the Member States must also be informed of the technical regulations contemplated by any one Member State;

Whereas the Commission and the Member States must also be allowed sufficient time in which to propose amendments to a contemplated measure, in order to remove or reduce any barriers which it might create to the free movement of goods;

Whereas the Commission must also have the option of proposing or adopting a Community directive governing the subject of the national measure contemplated;

Whereas, in the two instances set out above, the Member State in question must, pursuant to the general obligations laid down in Article 5 of the Treaty, defer implementation of the contemplated measure for a period sufficient to allow either a joint examination of the proposed amendments or the preparation of the proposal for a Council Directive or of the Commission Directive; whereas the time limits laid down in the Agreement of the representatives of the Governments of the Member States meeting within the Council of 28 May 1969 providing for standstill and notification to the Commission ⁽⁴⁾, as amended by the Agreement of 5 March 1973 ⁽⁵⁾, have proved inadequate in the cases concerned and should accordingly be extended;

Whereas the procedure concerning the standstill arrangement and notification of the Commission contained in the abovementioned Agreement of 28 May 1969 remains applicable to products subject to that procedure which are not covered by this Directive;

Whereas, in practice, national technical standards may have the same effects on the free movement of goods as technical regulations;

Whereas it would therefore appear necessary to inform the Commission of draft standards under similar conditions to those which apply to technical regulations; whereas, pursuant to Article 213 of the Treaty, the Commission may, within the limits and under the conditions laid down by the Council in accordance with the provisions of the Treaty, collect any information and carry out any checks required for the performance of the tasks entrusted to it;

Whereas it is also necessary for the Member States and the standards institutions to be informed of standards contemplated by standards institutions in the other Member States;

⁽¹⁾ OJ No C 253, 1. 10. 1980, p. 2.

⁽²⁾ OJ No C 144, 15. 6. 1981, p. 122.

⁽³⁾ OJ No C 159, 29. 6. 1981, p. 23.

⁽⁴⁾ OJ No C 76, 17. 6. 1969, p. 9.

⁽⁵⁾ OJ No C 9, 15. 3. 1973, p. 3.

Whereas it is necessary to set up a Standing Committee, the members of which will be appointed by the Member States with the task of helping the Commission to examine draft national standards and cooperating in its efforts to lessen any adverse effects thereof on the free movement of goods,

HAS ADOPTED THIS DIRECTIVE:

Article 1

For the purposes of this Directive, the following meanings shall apply:

1. 'technical specification', a specification contained in a document which lays down the characteristics required of a product such as levels of quality, performance, safety or dimensions, including the requirements applicable to the product as regards terminology, symbols, testing and test methods, packaging, marking or labelling;
2. 'standard', a technical specification approved by a recognized standardizing body for repeated or continuous application, with which compliance is not compulsory;
3. 'standards programme', document listing the subjects for which it is intended to draw up or alter a standard;
4. 'draft standard', document containing the text of the technical specifications concerning a given subject, which is being considered for adoption in accordance with the national standards procedure, as that document stands after the preparatory work and as circulated for public comment or scrutiny;
5. 'technical regulation', technical specifications, including the relevant administrative provisions, the observance of which is compulsory, *de jure* or *de facto*, in the case of marketing or use in a Member State or a major part thereof, except those laid down by local authorities;
6. 'draft technical regulation', the text of a technical specification including administrative provisions, formulated with the aim of enacting it or of ultimately having it enacted as a technical regulation, the text being at a stage or

preparation at which substantial amendments can still be made;

7. 'product', industrially manufactured products other than agricultural products within the meaning of Article 38 (1) of the Treaty, products for human or animal consumption, medicinal products within the meaning of Directive 65/65/EEC (1) and cosmetic products within the meaning of Directive 76/768/EEC (2).

Article 2

1. The Commission and the standards institutions in List 1 annexed hereto shall be informed each year, not later than 31 January, of the standards programmes drawn up by the national institutions in List 2 annexed hereto. This information shall be brought up to date every quarter. The Commission may amend or supplement these lists on the basis of communications from the Member States.
2. Standards programmes shall indicate in particular whether the standard:
 - will be the transposition in full of an existing international or European standard,
 - will be the transposition of an international or European standard incorporating certain national divergences or amendments,
 - will be a new national standard,
 - will constitute an amendment of a national standard.

After consulting the Committee referred to in Article 5, the Commission may draw up rules for the codified presentation of this information and a plan and criteria for the presentation of standards programmes designed to facilitate their comparison.

3. The Commission shall keep this information at the disposal of the Member States in a form in which the different programmes can be compared.

Article 3

The Commission and the standards institutions shall be informed if one or more standards institutions:

(1) OJ No 22, 9. 2. 1965, p. 369/65.
 (2) OJ No L 262, 27. 9. 1976, p. 169.

- wish to be involved passively or actively (by sending an observer) in activities planned by other standards institutions,
- wish a European standard or any other document leading to uniform technical specifications to be drawn up.

Article 4

At least every four months the standards institutions referred to in List I and the Commission shall receive all new draft standards, except where such standards merely transpose the full text of an international or European standard.

When a draft is communicated it shall be indicated whether the standard will be:

- the transposition of an international or European standard incorporating certain national divergences or amendments,
- a new national standard, or
- an amendment of a national standard.

Article 5

A Standing Committee shall be set up consisting of representatives appointed by the Member States who may call on the assistance of experts or advisers; its chairman shall be a representative of the Commission.

The Committee shall draw up its own rules of procedure.

Article 6

1. The Committee shall meet at least twice a year with the representatives of the standards institutions referred to in List I.

2. The Commission shall submit to the Committee a report on the implementation and application of the abovementioned procedures and proposals aimed at eliminating existing or foreseeable barriers to trade.

3. The Committee shall express its opinion on the communications and proposals referred to in paragraph 2 and may in this connection propose, in particular, that the Commission:

- request the European standards institutions to draw up a European standard within a given time limit,

- ensure where necessary, in order to avoid the risk of barriers to trade, that initially the Member States concerned decide amongst themselves on appropriate measures,
- take all appropriate measures.

4. The Committee must be consulted by the Commission:

- (a) before any amendment is made to the lists in the Annex (Article 2 (1));
- (b) when drawing up the rules for the codified presentation of information and the plan and criteria for the presentation of standards programmes (Article 2 (2));
- (c) when deciding on the actual system whereby the exchange of information provided for in this Directive is to be effected and on any change to it;
- (d) when reviewing the operation of the system set up by this Directive (Article 11).

5. The Committee may be consulted by the Commission on any preliminary draft technical regulation received by the latter.

6. Any question regarding the implementation of this Directive may be submitted to the Committee at the request of its chairman or of a Member State.

7. The proceedings of the Committee and the information to be submitted to it shall be confidential.

However, the Committee and the national authorities may, provided that the necessary precautions are taken, consult, for an expert opinion, natural or legal persons, including persons in the private sector.

Article 7

1. Member States shall take all appropriate measures to ensure that their standards institutions do not draw up or introduce standards in the field in question while the European standard referred to in the first indent of Article 6 (3) is being drawn up. This undertaking shall lapse unless a European standard has been introduced within six months following expiry of the time limit fixed in accordance with the said indent.

2. Paragraph 1 shall not apply to the work of standards institutions undertaken at the request of the

public authorities to draw up technical specifications or a standard for specific products for the purpose of enacting a technical regulation for such products.

Member States shall communicate all requests of the kind referred to in the preceding subparagraph to the Commission as draft technical regulations, in accordance with Article 8 (1), and shall state the grounds for their enactment.

Article 8

1. Member States shall immediately communicate to the Commission any draft technical regulation, except where such technical regulation merely transposes the full text of an international or European standard, in which case information regarding the relevant standard shall suffice; they shall also let the Commission have a brief statement of the grounds which make the enactment of such a technical regulation necessary, where these are not already made clear in the draft.

The Commission shall immediately notify the other Member States of any draft it has received; it may also refer this draft to the Committee for its opinion.

2. The Commission and the Member States may make comments to the Member State which has forwarded a draft technical regulation; that Member State shall take such comments into account as far as possible in the subsequent preparation of the technical regulation.

3. At the express request of a Member State or the Commission, Member States shall communicate to them, without delay, the definitive text of a technical regulation.

4. The information supplied under this Article shall be confidential.

However, the Committee and the national authorities may, provided that the necessary precautions are taken, consult, for an expert opinion, natural or legal persons, including persons in the private sector.

Article 9

1. Without prejudice to paragraph 2, Member States shall postpone the adoption of a draft technical regulation for six months from the date of the notification referred to in Article 8 (1) if the Commission or another Member State delivers a detailed opinion, within three months of that date, to the effect that the measure envisaged must be amended in order to eliminate or reduce any barriers which it might create to the free movement of goods.

2. The period in paragraph 1 shall be 12 months if, within three months following the notification referred to in Article 8 (1), the Commission gives notice of its intention of proposing or adopting a Directive on the subject.

3. Paragraphs 1 and 2 shall not apply in those cases where, for urgent reasons relating to the protection of public health or safety, a Member State is obliged to prepare technical regulations in a very short space of time in order to enact and introduce them immediately without any consultations being possible. In such cases the Member State in question shall in the notification provided for in Article 8 state the grounds warranting the urgent adoption of the measures.

Article 10

Articles 8 and 9 shall not apply where Member States honour their obligations arising out of Community Directives or commitments arising out of an international agreement where they result in the adoption of uniform technical specifications in the Community.

Article 11

No later than four years following the date of notification of this Directive the Commission, in close cooperation with the Committee referred to in Article 5, shall review the operation of the procedures laid down in this Directive and, if need be, submit any relevant proposals for amending them.

Article 12

1. Member States shall bring into force the measures necessary in order to comply with this Directive within 12 months following its notification and shall forthwith inform the Commission thereof.

2. Member States shall ensure that the texts of the main provisions of national law which they adopt in the field governed by this Directive are communicated to the Commission.

Article 13

This Directive is addressed to the Member States.

Done at Brussels, 28 March 1983.

For the Council
The President
J. ERTL

ANNEX

LIST 1

Standards institutions

- AFNOR (France):**
Association française de normalisation,
Tour Europe, Cedex 7,
F-92080 Paris-La-Défense
- UTE (France):**
Union technique de l'électricité (UTE),
12, place des États-Unis,
F-75703 Paris Cedex 16
- BSI (United Kingdom):**
British Standards Institution,
2 Park Street,
UK-London W1A 2BS
- BEC (United Kingdom):**
British Electrotechnical Committee,
British Standards Institution,
2 Park Street,
UK-London W1A 2BS
- DS (Denmark):**
Dansk Standardiseringsråd,
Aurehøjvej 12,
Postboks 77,
DK-2900 Hellerup 12
- DEK (Denmark):**
Dansk Elektroteknisk Komite (DEK),
Strandgade 36 st.,
DK-1401 København K
- DIN (Germany):**
DIN Deutsches Institut für Normung e.v.,
Burggrafenstrasse 4-10,
Postfach 1107,
D-1000 Berlin 30
- DKE (Germany):**
Deutsche Elektrotechnische Kommission im DIN und
VDE (DKE),
Stresemannallee 15,
D-6000 Frankfurt am Main 70
- ELOT (Greece):**
Hellenic Organization for Standardization (ELOT),
Didotou 15,
GR-Athens 144
- IBN (Belgium):**
Institut belge de normalisation, Belgisch Instituut voor
Normalisatie
29, avenue de la Brabançonne (laan)
B-1040 Bruxelles/Brussel
- CEB (Belgium):**
Comité électrotechnique (CEB)
(Belgisch Elektrotechnische Comité (BEC)),
3, galerie Ravenstein, bte 11,
B-1000 Bruxelles
- IIRS (Ireland):**
Institute for Industrial Research and Standards,
Ballymun Road,
IRL-Dublin 9
- ETCI (Ireland):**
Electro-Technical Council of Ireland (ETCI),
Institute for Industrial Research and Standards,
Ballymun Road,
IRL-Dublin 9
- Luxembourg:**
Inspection du travail et des mines,
2, rue des Girondins,
L-Luxembourg
- NNI (Netherlands):**
Nederlands Normalisatie Instituut,
Postbus 5059,
NL-2600 GB Delft
- NEC (Netherlands):**
Nederlands Elektrotechnisch Comité (NEC),
Kalfjeslaan 2,
NL-2623 AA Delft T
- UNI (Italy):**
Ente nazionale italiano di unificazione,
piazza Armando Diaz 2,
I-20123 Milano
- CEI (Italy):**
Comitato elettrotecnico italiano (CEI),
viale Monza 259,
I-20126 Milano
- CEN:**
Comité européen de normalisation,
rue de Brederode,
Bruxelles
- CENELEC:**
Comité européen de normalisation
électrotechnique,
rue de Brederode,
Bruxelles

LIST 2

National standards institutions in the Member States of the European Community

(Same as those in List 1 except for CEN and CENELEC)

I

(Information)

COUNCIL

COUNCIL RESOLUTION

of 7 May 1985

on a new approach to technical harmonization and standards

(85/C 136/01)

THE COUNCIL,

in extension of its conclusions on standardization, approved on 16 July 1984 (Annex I);*emphasizes* the urgent need to resolve the present situation as regards technical barriers to trade and dispel the consequent uncertainty for economic operators;*emphasizes* the importance and desirability of the new approach which provides for reference to standards — primarily European standards, but national ones if need be, as a transitional measure — for the purposes of defining the technical characteristics of products, an approach outlined by the Commission in its communication of 31 January 1985, which follows certain guidelines adopted by the European Parliament in its resolution of 16 October 1980 and forms part of the extension of the Council's conclusions of 16 July 1984;*aware that* the new approach will have to be accompanied by a policy on the assessment of conformity, calls on the Commission to give this matter priority and to expedite all its work in this area;*approves* the guidelines encapsulated in the list of principles and main elements to be embodied in the main part of the Directives (Annex II to this resolution);*calls on* the Commission to submit suitable proposals as soon as possible.

—

ANNEX I

CONCLUSIONS ON STANDARDIZATION

Approved by the Council on 16 July 1984

The Council believes that standardization goes a long way towards ensuring that industrial products can be marketed freely and also towards creating a standard technical environment for undertakings in all countries, which improves competitiveness not only on the Community market but also on external markets, especially in new technology.

It recognizes that the objectives being pursued by the Member States to protect the safety and health of their people as well as the consumer are equally valid in principle, even if different techniques are used to achieve them.

Accordingly, the Council adopts the following principles for a European standardization policy:

- agreement by the Member States to keep a constant check on the technical regulations which are applied — whether *de jure* or *de facto* — on their territory so as to withdraw those which are obsolete or unnecessary;
- agreement by the Member States to ensure the mutual recognition of the results of tests and the establishment, where necessary, of harmonized rules as regards the operation of certification bodies;
- agreement to early Community consultation at an appropriate level, in accordance with the objectives of Directive 189/83/EEC where major national regulatory initiatives or procedures might have adverse repercussions on the operation of the internal market;
- extension of the Community practice in matters of technical harmonization of entrusting the task of defining the technical characteristics of products to standards, preferably European but if necessary national, where the conditions necessary for this purpose, particularly as regards health protection and safety, are fulfilled;
- a very rapid strengthening of the capacity to standardize, preferably at European level, with a view to facilitating on the one hand harmonization of legislation by the Community and on the other industrial development, particularly in the field of new technologies, since this could in specific circumstances involve the Community in introducing new procedures to improve the drawing up of standards (e.g. standardization bureaux, *ad hoc* committees). The adoption of European standards would be submitted to the European standardization bodies for approval.

In high technology sectors particularly, subjects should be identified where common specifications and standards will make for efficient exploitation of the Community dimension and the opening of public works and supply contracts so that the decisions required in this connection may be taken.

ANNEX II

GUIDELINES FOR A NEW APPROACH TO TECHNICAL HARMONIZATION AND STANDARDS

The following are the four fundamental principles on which the new approach is based:

- legislative harmonization is limited to the adoption, by means of Directives based on Article 100 of the EEC Treaty, of the essential safety requirements (or other requirements in the general interest) with which products put on the market must conform, and which should therefore enjoy free movement throughout the Community,
- the task of drawing up the technical specifications needed for the production and placing on the market of products conforming to the essential requirements established by the Directives, while taking into account the current stage of technology, is entrusted to organizations competent in the standardization area,

- these technical specifications are not mandatory and maintain their status of voluntary standards,
- but at the same time national authorities are obliged to recognize that products manufactured in conformity with harmonized standards (or, provisionally, with national standards) are presumed to conform to the 'essential requirements' established by the Directive. (This signifies that the producer has the choice of not manufacturing in conformity with the standards but that in this event he has an obligation to prove that his products conform to the essential requirements of the Directive.)

In order that this system may operate it is necessary:

- on the one hand that the standards offer a guarantee of quality with regard to the 'essential requirements' established by the Directives,
- on the other hand that the public authorities keep intact their responsibility for the protection of safety (or other requirements envisaged) on their territory.

The quality of harmonized standards must be ensured by standardization mandates, conferred by the Commission, the execution of which must conform to the general guidelines which have been the subject of agreement between the Commission and the European standardization organizations. In so far as national standards are concerned their quality must be verified by a procedure at Community level managed by the Commission, assisted by a standing committee composed of officials from national administrations.

At the same time safeguard procedures must be provided for, under the management of the Commission assisted by the same committee, in order to allow the competent public authorities the possibility of contesting the conformity of a product, the validity of a certificate or the quality of a standard.

In following this system of legislative harmonization in each area in which it is feasible, the Commission intends to be able to halt the proliferation of excessively technical separate Directives for each product. The scope of Directives according to the 'general reference to standards' formula should encompass wide product categories and types of risk.

The Community could on the one hand, therefore, complete the extremely complex undertaking of harmonizing technical legislation and on the other hand promote the development and application of European standards. These are essential conditions for the improvement of the competitiveness of its industry.

OUTLINE OF THE PRINCIPLES AND MAIN ELEMENTS WHICH SHOULD MAKE UP THE BODY OF THE DIRECTIVES

A. JUSTIFICATIONS

Amongst the traditional principles justifying a Directive the following aspects should be emphasized:

- Member States have the responsibility of ensuring safety on their territory (in the home, at the workplace, etc.) of persons, domestic animals and goods, or the respect of other essential protection requirements in the general interest such as health, consumer or environmental protection etc., with regard to the hazards covered by the Directive itself (1);
- the national provisions ensuring such protection must be harmonized in order to ensure the free movement of goods, without lowering existing and justified levels of protection in the Member States;
- CEN and CENELEC (one or the other, or both according to the products covered by the Directive) are the competent bodies to adopt European harmonized standards within the scope of the Directive, in accordance with the guidelines which the Commission, after consultation of the Member States, has signed with these bodies (2).

(1) For reasons of convenience and ease of drafting the rest of this document refers only to safety.

(2) For specific sectors of industrial activity other competent European bodies for the drawing up of technical specifications could be involved.

1. In this outline a general approach is developed which should be applied according to the needs for legislation by Directives based on Article 100 of the Treaty relating to sectors or families of products as well as types of hazard.
2. The object of the Directive will be specified in each sphere of application according to the types of hazard (safety, health, environmental, consumer protection, etc.) and should the need arise to the circumstances (in the home, at the place of work, under road traffic conditions, during leisure activities, etc.).
3. Where appropriate, it should be stated that the Member States may make provision, in accordance with Community law, for national regulations concerning the conditions for use of products covered by the scope of the Directive.
4. Concerning the objective mentioned in the second principle, it is obvious that it is carried into effect by the very adoption of the Directive under Article 100 of the Treaty, as the essential safety requirements contained in it are of such a nature as to ensure the pursuit of such an objective.

B. MAIN ELEMENTS

I. Scope

Definition of the range of products covered, as well as the nature of the hazards it is intended to avert.

The scope should be defined in such a way that a consistent approach to the action is ensured, and that the proliferation of Directives on specific products is avoided. Moreover, it should be noted that the enacting terms of such a Directive do not preclude the possibility of several Directives being adopted on one and the same product according to the various types of hazard associated with that product (for example, mechanical safety of a machine on the one hand and pollution by that machine on the other hand).

II. General clause for placing on the market

The products covered by the Directive may be placed on the market only if they do not endanger the safety of persons, domestic animals or goods when properly installed and maintained and used for the purposes for which they are intended.

1. The Directives would provide for total harmonization as a general rule. Consequently, any product placed on the market falling within the scope of the Directive must be in conformity with the requirements of the Directive. In certain specific conditions, optional harmonization for certain products may prove to be opportune. The outline Directive, however, is drawn up with a view to total harmonization.

Appropriate solutions could be envisaged in order to take account of the need to support, in some Member States, a harmonious move towards the introduction of a system of binding regulations, in order in particular to ensure the establishment of appropriate certification infrastructures.

Point II therefore represents a general clause setting out the responsibilities of the Member States in relation to the placing of goods on the market.

2. In order to respect the general principle on which the outline Directive is based, which is to leave to the trade the choice of the means of attestation of conformity and thus to prohibit Member States from setting up any system of control prior to placing on the market (except, of course, in cases where prior control is required by specific Directives for special sectors, as is moreover clearly provided for in point VIII), it is obvious that the national authorities in order to acquit themselves of their responsibilities set out in this clause must be allowed to exercise control on the market by way of spot checks.
3. In certain cases, in particular with regard to the protection of workers and consumers, the conditions set out in this clause may be strengthened (foreseeable use).

III. Essential safety requirements

Description of the safety requirements which are essential for the application of the general clause in point II with which all products covered by the Directive must conform.

1. The essential safety requirements which must be met in the case of products which can be put on the market shall be worded precisely enough in order to create, on transposition into national law, legally binding obligations which can be enforced. They should be so formulated as to enable the certification bodies straight away to certify products as being in conformity,

having regard to those requirements in the absence of standards. The degree of detail of the wording will depend on the subject matter. If the basic requirements for safety are observed, the general clause in point II can be applied

2. Amendments to these requirements can be made only by means of a new Council Directive under Article 100 of the Treaty.

IV. Free movement clause

Obligation on the Member States to accept, under the conditions referred to in point V, the free movement of products which conform to points II and III.

1. Free movement will be ensured in the case of products declared to conform to the protection requirements laid down in the Directive, without recourse as a general rule to prior verification of compliance with the requirements set out in point III, it being understood that note 2 of point II also applies in this case.

The interpretation to be given to this provision should not have the consequence that third party certification is to be systematically required by the sectoral Directives.

2. The actual aim of the Directives in question is to cover all essential requirements, but in the exceptional case of cover proving incomplete, it would always be possible for a Member State to act under Article 36 of the Treaty.

V. Means of proof of conformity and effects

1. Member States shall presume to be in conformity with points II and III products which are accompanied by one of the means of attestation described in point VIII declaring that they are in conformity with:

(a) the harmonized standards adopted by the European standardization body which is particularly competent within the scope of this Directive, when these standards are adopted in accordance with the general guidelines agreed between that body and the Commission and the references of which are published in the *Official Journal of the European Communities*; such publication should, moreover, also be carried out by the Member States;

(b) or as a transitional measure, and in so far as harmonized standards do not exist in the field covered by such standards, national standards referred to in paragraph 2.

2. Member States shall communicate to the Commission the text of those national standards which they consider to meet points II and III. The Commission shall forthwith forward this text to the other Member States. In accordance with the procedure laid down in paragraph 2 of Point VI, the Commission shall notify the Member States of the national standards which enjoy the presumption of conformity with points II and III.

Member States are required to publish the references of these standards. The Commission shall also ensure that they are published in the *Official Journal of the European Communities*.

3. Member States shall accept that the products for which the manufacturer has not applied any standard (because of absence of a standard as laid down in paragraphs 1 (a) and (b) above or for other exceptional reasons, are considered to be in conformity with points II and III, when their conformity is demonstrated by one of the means of attestation set out in point VIII, paragraph 1 (a) and (b).

1. Only those means of attestation provided for in point VIII necessarily carry presumption of conformity.

2. The presumption of conformity is constituted by the fact that the conformity of a product to harmonized or national standards is declared by one of the means of attestation set out in point VIII. When the product is not in conformity with a standard, because the standards do not exist or because the manufacturer, for example in cases of innovation, prefers to apply other manufacturing criteria of his choice, conformity to points II and III is declared by the means of an attestation delivered by an independent body.

3. In cases under point V, paragraphs 1 and 3, Member States will therefore have the right, for the presumption to operate, to request at any time one of the means of attestation set out in point VIII.

4. The drafting and adoption of the harmonized standards mentioned in paragraph 1 (a) by the CEN and CENELEC, these bodies being generally considered to be the 'European standards bodies which are particularly competent', and the obligation relating to transposition into national standards are governed by these two bodies' internal rules and their regulations relating to standards work. The internal rules of CEN and CENELEC are in the process of being harmonized.

However, it is not ruled out that the harmonized standards referred to in paragraph 1 (a) will be prepared outside CEN and CENELEC by other bodies which may assume these functions in particular areas; in such cases adoption of the harmonized standards shall be submitted for approval by CEN/CENELEC. In any case, the drafting and introduction of the harmonized standards referred to in point V must be subject to the guidelines agreed between the Commission and these organizations. The guidelines deal in particular with the following principles and conditions:

- the availability of suitable staff and technical infrastructure at the standards body which the Commission mandates to proceed with standardization;
- the association of public authorities and interested circles (in particular manufacturers, users, consumers, unions);
- the adoption of harmonized standards and their transposition into national standards or, at least, the annulment of diverging national standards under conditions approved by the Commission when drawing up a frame of reference for standardization after consultation with the Member States.

5. In the selection of national standards, due consideration will be given to any practical difficulties arising from that selection.

National standards are selected only on a transitional basis. Accordingly, when a selection decision is made, the relevant European bodies will in principle be sent instructions to draft and adopt the corresponding European standards within a given period of time and under the conditions stated above.

VI. Management of the list of standards

1. Where a Member State or the Commission considers that harmonized standards or drafts thereof do not fully satisfy points II and III, the Commission or the Member State shall bring this to the attention of the committee (point X) setting out the reasons. The committee shall give an opinion as a matter of urgency.

The Commission shall, in the light of the committee's opinion, notify the Member States of the necessity of withdrawing or not withdrawing the standard from the publication referred to in point V, paragraph 1 (a). It shall inform the European standards body concerned and, if necessary, give it a new or revised mandate.

2. On receipt of the communication referred to in point V, paragraph 2, the Commission shall consult the committee. After the committee has given its opinion, the Commission shall, within a given period, notify the Member States whether the national standard in question should or should not enjoy presumption of conformity and, if so, be subject to national publication of its references.

If the Commission or a Member State considers that a national standard no longer fulfils the conditions for presumption of conformity to the safety requirements, the Commission shall consult the committee. In the light of the opinion of the committee, it shall notify the Member States whether or not the standard in question should continue to enjoy presumption of conformity and in the latter case be withdrawn from the publications referred to in point V, paragraph 2.

As indicated above (see notes to point V, paragraph 2) the Member States have the power to decide which of their national standards may be considered to be in conformity with points II and III and thus be subject to the Commission confirmation procedure.

VII. Safeguard clause

1. Where a Member State finds that a product might compromise the safety of individuals, domestic animals or property, it shall take all appropriate measures to withdraw or prohibit the placing on the market of the product in question or to restrict its free movement even if it is accompanied by one of the means of attestation referred to in point VIII.

Within a given period of time, and only when the product in question is accompanied by one of the means of attestation provided for in point VIII, the Member State shall inform the Commission of such a measure. It will indicate the reasons for its decision and in particular whether the non-conformity results from:

- (a) non-compliance with points II and III (when the product does not conform to any standard);
 - (b) incorrect application of the standards referred to in point V;
 - (c) a shortcoming in the standards themselves.
2. The Commission shall consult the Member States concerned as soon as possible. If the Member State which has taken measures intends to maintain them, the Commission shall refer the matter to the committee within a specified period. Where the Commission, after consultation of the committee, finds that the action is justified it shall, also within a given period of time, inform the Member State in question and point out to the other Member States that (all else being equal) they are also obliged to prevent the product in question from being placed on the market.
 3. Where failure of the product to comply with points II and III results from a shortcoming in the harmonized standards or in the national standards, the consequences shall be those set out in point VI.
 4. Where the non-conforming product is accompanied by a means of attestation issued by an independent body or by the manufacturer, the competent Member State shall take the appropriate measures against the author of the attestation and inform the Commission and the other Member States.
 5. The Commission shall ensure that all Member States are kept informed of the progress and of the outcome of this procedure.

This point describes the consequences when recourse by a Member State to the safeguard clause appears to be justified. It does not give any indication on the consequences when recourse does not appear to be justified after expiry of the Community examination procedure, because in such cases the general rules of the Treaty apply.

VIII. Means of attestation of conformity

1. The means of attestation referred to in point V which the trade may use are:
 - (a) certificates and marks of conformity issued by a third party;
 - (b) results of tests carried out by a third party;
 - (c) declaration of conformity issued by the manufacturer or his agent based in the Community. This may be coupled with the requirement for a surveillance system;
 - (d) other means of attestation which could possibly be determined in the Directive.
2. The choice by trade and industry between these different means may be limited, or even removed, according to the nature of the products and hazards covered by the Directive.
3. National bodies authorized to issue marks or certificates of conformity shall be notified by each Member State to the Commission and to the other Member States.
 1. The appropriate means of attestation will be established and expanded in the specific Directives taking into account the special requirements of their scope. It must be borne in mind that the certification bodies designated by the Member States for cases (a) and (b) will have to intervene in particular in the absence of standards and where the manufacturer does not observe standards (see point V, paragraph 3).
 2. The bodies referred to in paragraph 3 must carry out their duties according to recognized international practices and principles and especially in accordance with ISO Guides. The responsibility for the control of the operation of these bodies lies with the Member States. Questions concerning the carrying out of tests and certification may be put before the committee set up under point IX.

3. With regard to the manufacturer's declaration of conformity, the national authorities have the right to ask the manufacturer or the importer to communicate the data relating to the tests carried out concerning safety etc., when they have good grounds for believing that a product does not offer the degree of safety required in all respects. Refusal on the part of the manufacturer or the importer to communicate these data constitutes sufficient reason to doubt the presumption of conformity.
4. The determination of a limitative list of means of attestation only concerns the system of presumption of conformity but cannot have the effect of restricting the possibility for a member of the trade to prove, by any means he sees fit within the framework of a dispute or court proceedings, the conformity of the product with points II and III.

IX. Standing committee

A standing committee shall be set up chaired by a representative of the Commission and consisting of representatives appointed by the Member States who may avail themselves of the help of experts or advisers.

The committee shall be convened by its chairman either on his own initiative or at the request of a Member State.

The committee shall draw up its own rules of procedure.

X. Tasks and operation of the committee

1. The committee shall carry out the tasks entrusted to it by virtue of the foregoing points.
2. Furthermore, any question regarding the implementation of a Directive may be submitted to the committee.

The tasks of the committee shall be concerned with the implementation of the Directive. The object of the consultation of the Committee prior to the publication of the references of the national standards is more to provide for a forum for the discussion of the objections which the Commission or a Member State may formulate, than to carry out a systematic examination of the entire contents of the standards.

Criteria for choosing the priority areas in which this approach could initially be applied

1. The need to find a new approach to the harmonization of technical regulations, based on 'general reference to standards' and following the lines described earlier, is the outcome of a number of conditions (outlined in the first part of this communication) backed up by the experience already acquired by the Community. Consequently it is a general principle, the validity of which will have to be assessed in practical terms in the various areas in which it will be applied.

The Council took a similar view in its 'Conclusions' of 16 July 1984 when it confirmed the general need for an extension of the 'general reference to standards' practice, but only provided the necessary conditions were fulfilled, i. e. as regards the obligation on public authorities to protect the health and safety of their citizens.

2. Before the priority areas in which this approach should initially be applied can be chosen, it is therefore necessary to establish a number of selection criteria to be taken into consideration, criteria which cannot be taken separately.
 - (a) Since the approach calls for the 'essential requirements' to be harmonized and made mandatory by Directives based on Article 100 of the Treaty, the 'general reference to standards' approach will be appropriate only where it is genuinely possible to distinguish between 'essential requirements' and 'manufacturing specifications'. In other words, in all areas in which the essential requirements in the public interest are such that a large number of manufacturing specifications have to be included if the public authorities are to keep intact their responsibility for protection of their citizens, the conditions for the 'general reference to standards' approach are not fulfilled as this approach would have little sense. In the light of this statement areas involving safety protection certainly appear to have priority over those involving health protection (which applies to the scope of Directive 83/189).

- (b) If 'general reference to standards' is to be possible, the area concerned must be covered by, or be capable of being covered by, standardization. Areas which are inherently ill suited to standardization work are certainly the areas referred to in (a) above where the need for regulations is felt unanimously throughout the Community. In other areas there is a standardization capacity or potential and in the latter case the Community should encourage it in close cooperation with both the industry concerned and the European standards bodies, whilst ensuring that the interests of consumers are taken into account.
- (c) The progress of technical harmonization work in the Community under the general programme established by the Council resolutions of 1969 and 1973 varies greatly from one industrial sector to another. In manufacturing industry (which appears at first sight better to fulfil the abovementioned criteria) most of the Directives adopted concern three areas: motor vehicles, metrology and electrical equipment.
- The new approach will therefore have to take this state of affairs into account and concentrate mainly on other areas in which there is a lack of Community activities (e.g. many engineering products and building materials) without calling into question regulations that are already well advanced (for example those referring to motor vehicles). The case of electrical equipment is different: this is the only area to have been tackled by a Directive of the 'general reference to standards' type and should certainly be included in the priority areas for all such products not yet covered, in view of the extremely important part played in this area by international and European standardization.
- (d) One of the main purposes of the new approach is to make it possible to settle at a stroke, with the adoption of a single Directive, all the problems concerning regulations for a very large number of products, without the need for frequent amendments or adaptations to that Directive. Consequently in the selected areas there should be a wide range of products sufficiently homogeneous to allow common 'essential requirements' to be defined. This general criterion is, however, based mainly on practical and labour-saving considerations. There is nothing to prevent a single type of product, in certain cases, from being covered by the 'general reference to standards' formula if all the abovementioned criteria are met.
- (e) Finally, mention should be made of one criterion that the Commission, in agreement with industry, has always regarded as essential. There must be grounds for considering that the existence of different regulations does in practice genuinely impede the free movement of goods. In some cases, however, even if these grounds are not obvious, a Directive may appear necessary to protect an essential public interest uniformly throughout the Community.
-

COUNCIL DIRECTIVE

of 24 July 1986

on the initial stage of the mutual recognition of type approval for telecommunications terminal equipment

(86/361/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament ⁽¹⁾,

Having regard to the opinion of the Economic and Social Committee ⁽²⁾,

Whereas the mutual recognition of type approval for telecommunications terminal equipment features in the Commission communication to the Council of 18 May 1984 on telecommunications, in the Council recommendations of 12 November 1984 concerning the implementation of harmonization in the field of telecommunications and the first phase of opening up access to public telecommunications contracts, and in the Council conclusions of 17 December 1984 concerning a Community telecommunications policy;

Whereas the market in telecommunications terminal equipment and use of the full potential of the new telecommunications services are of considerable importance for the economic development of the Community;

Whereas it is absolutely essential to establish or consolidate a specifically European industrial potential in the technologies concerned;

Whereas it is highly desirable to make rapid progress towards establishing a common market in this sector, in particular in order to offer the industry an improved base for its operations and to facilitate the adoption of a joint position with respect to third countries;

Whereas the mutual recognition of type approval for telecommunications terminal equipment constitutes a major step towards the creation of an open and unified market for such equipment;

Whereas, since situations differ and technical and administrative constraints exist in the Member States, progress towards this objective should be made in stages;

Whereas in particular the mutual recognition of conformity tests on mass-produced terminal equipment should

constitute an initial stage of the mutual recognition of type approval for such equipment;

Whereas such an approach must be based on the definition of common technical specifications based on international standards and specifications and on the harmonization of general technical requirements for testing, measuring and approval procedures in the areas of telecommunications and information technology;

Whereas a general standardization programme is being implemented in the field of information technology in compliance with the Standards Code of the General Agreement on Tariffs and Trade (GATT);

Whereas there is a need for a more comprehensive framework to be drawn up in preparation for a second stage which would create an open and unified market in telecommunications terminal equipment, bearing in mind that for telecommunications this has to include both the free movement of equipment and unimpeded connection to networks, in accordance with the harmonized requirements;

Whereas Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits ⁽³⁾ and Council Directive 83/189/EEC of 28 March 1983 laying down a procedure for the provision of information in the field of technical standards and regulations ⁽⁴⁾ are applicable, *inter alia*, to the fields of telecommunications and information technology;

Whereas the Memorandum of Understanding between the European Conference of Postal and Telecommunications Administrations (CEPT) and the Commission concerning standards and type approval for telecommunications equipment and the general guidelines agreed with the Joint European Standards Institution CEN-CENELEC henceforth make it possible to entrust specialized technical harmonization work to those bodies;

Whereas the mechanism introduced by certain CEPT administrations, including those of the Community Member States, under the agreement drawn up at Copenhagen on 15 November 1985, incorporates a formal adoption procedure and an undertaking to implement certain CEPT recommendations, which are then designated as 'NETS' (Normes européennes de télécommunications);

⁽¹⁾ OJ No C 36, 17. 2. 1986, p. 55.

⁽²⁾ OJ No C 303, 25. 11. 1985, p. 2.

⁽³⁾ OJ No L 77, 26. 3. 1973, p. 29.

⁽⁴⁾ OJ No L 109, 26. 4. 1983, p. 8.

Whereas it is necessary to set up a Committee, with the task of assisting the Commission in implementing this Directive and in progressively implementing the mutual recognition of type approval for terminal equipment,

HAS ADOPTED THIS DIRECTIVE :

Article 1

The Member States shall implement the mutual recognition of the results of tests of conformity with common conformity specifications for mass-produced telecommunications terminal equipment in accordance with the detailed rules set out in this Directive.

Article 2

For the purposes of this Directive :

1. 'telecommunications administrations' means the administrations or private operating agencies recognized in the Community and providing public telecommunications services ;
2. 'terminal equipment' means equipment directly or indirectly connected to the termination of a public telecommunications network to send, process or receive information ;
3. 'technical specification' means a specification contained in a document which lays down the characteristics required of a product such as levels of quality, performance, safety or dimensions, including the requirements applicable to the product as regards terminology, symbols, testing and test methods, packaging, marking and labelling ;
4. 'international technical specification in telecommunications' means the technical specification of all or some characteristics of a product, recommended by such organizations as the Comité international téléphonique et télégraphique (CCITT) or the CEPT ;
5. 'common technical specification' means a technical specification drawn up with a view to uniform application in all Member States of the Community ;
6. 'standard' means a technical specification adopted by a recognized standards body for repeated or continuous application, compliance with which is not compulsory ;
7. 'international standard' means a standard adopted by a recognized international standards body ;
8. 'approved testing laboratory' means a laboratory the conformity of which with the accreditation system established by the CEPT in close cooperation with specialized organizations and any relevant national accreditation organizations has been verified, with particular reference to the relevant ISO guides, by the appropriate Member State or a body recognized as

competent by that State and which is approved by that Member State or body recognized as competent for conducting conformity tests on terminal equipment ;

9. 'certificate of conformity' means the document certifying that a product or service conforms to given standards or technical specifications ;
10. 'type approval of terminal equipment' means the confirmation delivered by the competent authority of a Member State that a particular terminal equipment type is authorized or recognized as suitable to be connected to a particular public telecommunications network ;
11. 'conformity specification' means a document giving a precise and full description of the technical characteristics of the relevant terminal equipment (such as safety, technical parameters, functions and procedures and service requirements) together with a precise definition of the tests and test methods enabling the conformity of the terminal equipment with the prescribed technical characteristics to be verified ;
12. 'type approval specification' means a specification setting out the full and precise requirements that must be satisfied by terminal equipment to be granted type approval. It includes the conformity specification and also administrative requirements and, where appropriate, requirements concerning quality control operations to be carried out during the manufacture of the equipment ;
13. 'common conformity specification' means a conformity specification used in all the Community Member States by the authority competent for testing the conformity of terminal equipment. It also includes, where appropriate, requirements made necessary in a given State by historical network peculiarities or established national provisions concerning the use of radio frequencies ;
14. 'common type approval specification' means a type approval specification which is used in all the Community Member States by all the authorities empowered to grant type approval for terminal equipment. It includes the common conformity specification and also administrative requirements and, where appropriate, requirements concerning quality control operations to be carried out during the manufacture of the equipment ;
15. 'NET' (Norme européenne de télécommunications) is an approved technical specification recommendation of the CEPT or part or parts thereof which the signatories of the Memorandum of Understanding, established at the meeting of Directors-General of CEPT Administrations, in Copenhagen on 15 November 1985, adopted in accordance with the procedures set down in that Memorandum ;

16. 'mutual recognition of the results of conformity tests on terminal equipment' means a situation where, when an approved laboratory or the competent authority in a Member State issues a certificate, accompanied by test data and identification details, stating that a terminal is in conformity with a common conformity specification or a part thereof, that certificate is recognized in the other Member States, so that if the terminal in question is the subject of an application for type approval in another Member State, it no longer has to be subjected to the tests for verifying conformity with that specification, or with the part of that specification concerning the tests carried out;
17. 'essential requirements' means those aspects of common conformity specifications of such importance as to necessitate compliance as a matter of legal obligation for the implementation of the mutual recognition of the results of conformity tests on terminal equipment as an integral part of the type approval procedure. These essential requirements are at present:
- user safety in so far as this requirement is not covered by Directive 73/23/EEC,
 - safety of employees of public telecommunications network operators in so far as this requirement is not covered by Directive 73/23/EEC,
 - protection of public telecommunications networks from harm,
 - interworking of terminal equipment, in justified cases.

Article 3

The Council, acting in accordance with the rules of the Treaty on a proposal from the Commission, shall supplement as necessary the list of essential requirements and shall make them more specific where necessary for certain products.

Article 4

The Commission shall:

1. draw up each year, after consulting the Committee referred to in Article 5 and with due regard to the general programme of standardization in the information technology sector:
 - a list of international standards and international technical specifications in telecommunications to be harmonized,
 - a list of terminal equipment for which common conformity specifications should be drafted as a matter of priority, on the basis above all of the essential requirements,
 - a timetable for this work;
2. request the CEPT to draw up the common conformity specifications in the form of NETs, within the speci-

fied time limits; in so doing the latter shall, when appropriate, consult other specialized standardization organizations such as the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC).

Article 5

1. In carrying out the tasks referred to in Article 4, the Commission shall be assisted by a Committee, which shall be the Working Party of Senior Officials on Telecommunications. The members of the Committee may be assisted by experts or advisers according to the nature of the question under discussion. The Committee shall be chaired by a Commission representative.
2. Apart from the cases listed in this Directive, the Commission shall consult the Committee on:
 - (a) the broad objectives and the future needs of the telecommunications standardization policy;
 - (b) problems raised by the approval of testing laboratories, and in particular the accreditation system referred to in Article 2 (8) and any amendment to that system which may appear necessary;
 - (c) the effect of technological progress on specification work already under way and the possible need to give a new or revised mandate to the CEPT.

At the request of its Chairman or of a Member State, the Committee may consider any question relating to the implementation of this Directive.

3. The Committee shall adopt its own rules of procedure.
4. The Secretariat of the Committee shall be provided by the Commission.

Article 6

1. For the purposes of this Directive, a 'NET' shall be regarded as the equivalent of the common conformity specification.

Reference to NETs shall be published in the *Official Journal of the European Communities*.

2. Without prejudice to the cases referred to in Article 8, the competent authorities of the Member States shall not have any further tests carried out in respect of a particular type of terminal equipment where results of tests carried out in accordance with Article 7 have given rise to the issue of a certificate of conformity with the relevant common conformity specification, the references to which are published in the *Official Journal of the European Communities*. Such certificate of conformity shall be recognized for the purposes of type approval of the terminal equipment in question.

3. The common conformity specifications shall be used in all Member States by the competent authorities for any verification demanded for type approval purposes of the relevant terminal equipment.

The procedure for exceptions referred to in Article 7 (4) may also be applied by the competent authorities of the Member States in respect to the first subparagraph.

Article 7

1. Member States shall inform the Commission of the authority or authorities competent in their territory to issue type approval for terminal equipment. The Commission shall publish a list of these authorities in the *Official Journal of the European Communities*.

2. Member States shall send the Commission a list of the laboratories which they have approved, or which have been approved by bodies recognized by them as competent, for the purpose of verifying the conformity of terminal equipment with the common conformity specifications. They shall regularly submit a report on the activities of these laboratories in the field covered by this Directive. Such lists and reports shall be transmitted to the Committee referred to in Article 5 for information.

3. For the purposes of Article 6, the certificate of conformity issued by the approved laboratory which has carried out the tests must be accompanied by the data obtained from the measurements performed during the conformity tests, all the information necessary for precise identification of the terminal equipment on which the tests were made and a precise indication of the common conformity specification, or part thereof, used for the tests.

4. Member States shall ensure that telecommunications administrations use common conformity specifications when purchasing terminal equipment covered by such specifications except in the following cases :

- (a) where the equipment is to replace equipment connected to the network before the adoption of common conformity specification and is to the same technical specification as the equipment it replaces, or where, during any transition period between two systems, which is accepted as necessary and which is defined within the NET, a Member State needs to add a limited number of pieces of equipment complying with the specification of the first system. In both cases, the Commission shall be informed when such a waiver is invoked and kept informed of the number of pieces of equipment involved ; this information shall be given to the Committee referred to in Article 5 ;
- (b) where a careful consultation of the market — i.e. including the publication of a call for declarations of

interest in the *Official Journal of the European Communities* — shows there is no offer at economically acceptable conditions for such terminal equipment complying with those common conformity specifications. In this case, on the basis of an unavoidable need, a Member State may, for a limited period of time, apply only a part of the characteristics set out in the common conformity specifications. The Member State shall inform the Commission immediately and also state what departures from the common conformity specification it intends to permit. The Commission shall consult the Committee referred to in Article 5 as a matter of urgency and may request the CEPT to revise the particular common conformity specification. In addition, the Committee shall review the situation at least every six months during the period when this waiver is applied.

In the event that a request for revision is not made to the CEPT then his waiver shall cease when another Member State presents evidence to the Committee that terminal equipment conforming to that common conformity specification has been connected to its public telecommunication networks on a normal commercial basis.

However, a Member State may have the waiver extended provided that the Commission, on the advice of the Committee referred to in Article 5, agrees that the technical and economic conditions are sufficiently different in the two Member States as to warrant such an extension.

5. The Member States shall consult within the Committee referred to in Article 5, so as to create conditions of fair competition for carrying out the same series of conformity tests in all the approved laboratories.

Article 8

1. A Member State may, after examining the common conformity specification and the test results, suspend recognition of a certificate of conformity issued for the purpose of type approval :

- (a) if it discovers shortcomings regarding the application of the common conformity specification ;
- (b) if it discovers that the common conformity specification itself fails to meet the essential requirements which it is supposed to cover.

If it exercises this option, the Member State concerned shall immediately inform the Commission and the other Member States, stating the reasons for its decision.

2. Where the decision of the Member State concerns the electrical safety of users of terminal equipment, the procedures set out in Article 9 of Directive 73/23/EEC shall apply.

3. If the reasons given for the Member State's decision are as described in paragraph 1 (a), the Commission shall immediately consult the Member States concerned. If no agreement is reached without four weeks, the Commission shall seek the opinion of one of the approved laboratories notified in accordance with Article 7 which is based outside the territory of the Member States concerned. The Commission shall communicate the opinion of this laboratory to all the Member States, which may submit their comments to it within a period of one month.

After taking note of any such comments the Commission shall, if necessary, formulate appropriate recommendations or opinions.

If in preparing its opinion a laboratory consulted unavoidably incurs expenditure, which may if necessary include additional tests, the Commission will defray that expenditure on production of documentary evidence. If, however, further to an opinion a decision to suspend recognition of a certificate of conformity is not maintained, the Member State which took it shall reimburse the Commission, in accordance with the procedures for payment then negotiated with the Member State.

4. If the reasons invoked in support of the Member State's decision are as described in paragraph 1 (b), the Commission shall refer the matter to the Committee referred to in Article 5, which shall express its opinion as a matter of urgency. On the basis of that opinion the Commission shall decide whether or not to withdraw the common specification in question from the list published in the *Official Journal of the European Communities*. If it withdraws the specification, the Commission shall inform the CEPT and may entrust it with a further brief.

5. If a Member State considers that terminal equipment which has already been approved does not meet one or more of the essential requirements, it may revoke the

type approval granted and shall in that case immediately apply the procedures set out in paragraphs 1 and 2.

Article 9

The Commission shall examine the detailed rules for the second stage of the establishment of a market in telecommunications terminal equipment without internal frontiers covering, in particular, the implementation of mutual recognition of type approval for terminal equipment. To this end it shall submit proposals to the Council within a period of two years following the implementation of this Directive.

Article 10

This Directive shall not prejudice the application of Directive 83/189/EEC.

Article 11

1. Member States shall introduce the measures necessary to comply with this Directive within a period of not more than one year following adoption thereof. It shall forthwith inform the Commission thereof.

2. Member States shall ensure that the Commission is informed of the main provisions of national law which they adopt in the field governed by this Directive.

Article 12

This Directive is addressed to the Member States.

Done at Brussels, 24 July 1986.

For the Council

The President

A. CLARK

II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DECISION

of 22 December 1986

on standardization in the field of information technology and telecommunications

(87/95/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 235 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament⁽¹⁾,

Having regard to the opinion of the Economic and Social Committee⁽²⁾,

Whereas the standards applicable in the field of information technology and the activities necessary for their preparation must, in particular, take account of:

- the complexity of the technical specifications and the precision required to ensure the exchange of information and data and the compatible operating of systems;
- the need to ensure rapid publication of standards so that undue delays do not result in the early obsolescence of texts that have been overtaken by the speed of technological change;
- the need to encourage the application of international standards for exchange of information and data on a basis which will establish their credibility from the standpoint of practical implementation;
- the economic importance of the role played by standardization in contributing to the creation of a Community market in this field;

Whereas Directive 83/189/EEC⁽³⁾ enables the Commission, the Member States and the standards institutions to

be informed of the intentions of standards institutions to draw up or to amend a standard, and whereas, under the terms of that Directive, the Commission may establish terms of reference for work on standardization of common interest to be undertaken jointly and at an early stage;

Whereas that Directive does not contain all the provisions necessary for the implementation of a Community policy on standardization in the field of information technology and telecommunications;

Whereas the increasing amount of technical overlap between the different fields of standardization, particularly in the case of information technology and telecommunications, is such as to justify close cooperation between standards institutions, which should collaborate in order to deal with these matters of common interest;

Whereas agreements have been recently concluded by the Commission within the framework of the Memorandum of Understanding signed with the European Conference of Postal and Telecommunications Administrations (CEPT) and in the context of the general guidelines approved with the joint standardization organization European Committee for Standardization/European Committee for Electrotechnical Standardization (CEN/CENELEC);

Whereas Directive 86/361/EEC⁽⁴⁾ sets out programmes for work on common technical specifications (corresponding to Normes Européennes de Télécommunication (NETs)) for this field by the European Conference of Postal and Telecommunications Administrations in consultation, where appropriate, with the European Committee for Standardization and the European Committee for Electrotechnical Standardization;

⁽¹⁾ OJ No C 36, 17. 2. 1986, p. 55.

⁽²⁾ OJ No C 303, 25. 11. 1985, p. 2.

⁽³⁾ OJ No L 109, 26. 4. 1983, p. 8.

⁽⁴⁾ OJ No L 217, 5. 8. 1986, p. 21.

Whereas the field of public procurement orders is suitably placed to encourage wider acceptance of open systems interconnection information and data exchange standards through reference to them in purchasing;

Whereas it is necessary to entrust a committee with the task of assisting the Commission in its pursuance and management of the objectives and activities laid down by the Decision,

HAS DECIDED AS FOLLOWS :

Article 1

For the purposes of this Decision :

1. '*technical specifications*' means a specification contained in a document which lays down the characteristics required of a product, such as levels of quality, performance, safety or dimensions, including the requirements applicable to the product as regards terminology, symbols, testing and test methods, packaging, marking or labelling;
2. '*common technical specification*' means a technical specification drawn up with a view to uniform application in all the Member States of the Community;
3. '*standard*' means a technical specification approved by a recognized standards body for repeated or continuous application, compliance with which is not compulsory;
4. '*international standard*' means a standard adopted by a recognized international standards body;
5. '*Draft International Standard (DIS)*' means a draft standard adopted by a recognized international standards body;
6. '*international technical specification in telecommunications*' means the technical specification of all or some characteristics of a product, recommended by such organizations as the Comité international télégraphique et téléphonique (CCITT) or the CEPT;
7. '*European standard*' means a standard which has been approved pursuant to the statutes of the standards bodies with which the Community has concluded agreements;
8. '*European pre-standard*' means a standard adopted under the reference (EPS) in accordance with the statutory rules of the standards bodies with which the Community has concluded agreements;
9. '*functional standard*' means a standard worked out to yield a complex function required to ensure systems interoperability and generally obtained by the linking together of several existing reference standards and

adopted in accordance with the statutory rules of standards bodies;

10. '*functional specification*': the specification which defines, in the field of telecommunications, the application of one or more open system interconnection standards in support of a specific requirement for communication between information technology systems (standards recommended by such organizations as the 'Comité international télégraphique et téléphonique' (CCITT) or the CEPT);
11. '*technical regulation*' means the technical specifications, including the relevant administrative provisions, the observance of which is compulsory, *de jure* or *de facto*, in the case of marketing or use in a Member State or a major part thereof, except those laid down by local authorities;
12. '*certification of conformity*' means the activity whereby the conformity of a product or service to given standards or other technical specifications is certified by means of a certificate or mark of conformity;
13. '*information technology*' means the systems, equipment, components and software required to ensure the retrieval, processing and storage of information in all centres of human activity (home, office, factory, etc.), the application of which generally requires the use of electronics or similar technology;
14. '*public procurement orders*' means those :
 - defined in Article 1 of Directive 77/62/EEC (1);
 - concluded for the supply of equipment relating to information technology and telecommunications, irrespective of the sector of activity of the contracting authority;
15. '*telecommunications authorities*' means recognized authorities or private enterprises in the Community which provide public telecommunications services.

Article 2

In order to promote standardization in Europe and the preparation and application of standards in the field of information technology and functional specifications in the field of telecommunications, the following measures, subject to Article 3 (2) and Article 4, shall be implemented at Community level :

- (a) regular, at least annual, determination on the basis of international standards, draft international standards or equivalent documents, of the priority standardization requirements with a view to the preparation of work

(1) OJ No L 13, 15. 1. 1977, p. 1.

programmes and the commissioning of such European standards and functional specifications as may be deemed necessary to ensure the exchange of information and data and systems interoperability ;

(b) on the basis of international standardization activities :

— the European standards institutions and specialized technical bodies in the information technology and telecommunications sector shall be invited to establish European standards, European prestandards or telecommunications functional specifications having recourse, if necessary, to the drafting of functional standards, to ensure the precision required by users for exchange of information and data and systems interoperability. Such bodies shall base their work on international standards, draft international standards or international technical specifications in telecommunications. Where an international standard, draft international standard or international technical specification in telecommunications offers clear provisions allowing its uniform application, these provisions will be adopted unaltered in the European standard, European prestandard, or telecommunication functional specification. Only where such clear provisions do not exist in the international standard, draft international standard or international technical specification in telecommunications, the European standard, European prestandard, or telecommunication functional specification will be written to clarify or, where necessary, supplement the international standard, draft international standard or international technical specification in telecommunications while avoiding divergence from it ;

— the same bodies shall be invited to prepare technical specifications which may form the basis of European standards or European prestandards in the absence of, or as a contribution to the production of, agreed international standards for the exchange of information and data and systems interoperability ;

(c) measures to facilitate the application of the standards and functional specifications, in particular by means of coordinating Member States' activities in :

— the verification of the conformity of products and services to the standards and functional specifications on the basis of test requirements specified ;

— the certification of conformity to standards and functional specifications in accordance with properly harmonized procedures.

(d) promotion of the application of standards and functional specifications relating to information technology and telecommunications in public sector orders and technical regulations.

Article 3

1. The specific objectives of the measures proposed are described in the Annex to this Decision.

2. This Decision shall cover :

— standards in the field of Information Technology as set out in Article 5

— functional specifications for the services specifically offered over public telecommunications networks for exchange of information and data between information technology systems.

3. This Decision shall not cover :

— common technical specifications for terminal equipment connected to the public telecommunications networks, which are covered by Directive 86/361/EEC

— specifications for the equipment forming any part of the telecommunications networks themselves.

Article 4

In determining requirements as regards standardization and in drawing up a work programme for standardization and the preparation of functional specifications, the Commission shall refer in particular to the information communicated to it pursuant to Directive 83/189/EEC.

The Commission, after consulting the Committee provided for in Article 7, shall entrust the technical work to the competent European standards organizations or specialised technical bodies (CEN, CENELEC and CEPT) requesting them, if necessary, to draw up corresponding European standards or functional specifications. The mandates to be given to these organizations shall be referred for agreement to the Committee provided for under Article 5 of Directive 83/189/EEC in accordance with the procedures of the said Directive. No mandate shall be issued which overlaps with any part of work programmes commenced or drawn up under Directive 86/361/EEC.

Article 5

1. Taking account of the differences between existing national procedures, Member States shall take the necessary steps to ensure that reference is made to :

— European standards and European prestandards as described in Article 2 (b) ;

— international standards when accepted in the country of the contracting authority ;

in public procurement orders relating to information technology so that these standards are used as the basis for the exchange of information and data for systems interoperability.

2. In order to provide end-to-end compatibility, Member States shall take the necessary steps to ensure that their telecommunications administrations use functional specifications for the means of access to their public telecommunication networks for those services specifically intended for exchange of information and data between information technology systems which themselves use the standards mentioned in paragraph 1.

3. Application of this Article shall take account of special circumstances as outlined below which may justify the use of standards and specifications other than those provided for in this Decision :

- the need for operational continuity in existing systems, but only as part of clearly defined and recorded strategies for subsequent transition to international or European standards or functional specifications ;
- the genuinely innovative nature of certain projects ;
- where the standard or functional specification in question is technically inadequate for its purpose on the grounds that it does not provide the appropriate means of achieving information and data exchange or systems interoperability, or that the means (including testing) do not exist to establish satisfactorily conformity of a product to that standard or functional specification or where, in the case of European Pre-Standards, these lack the necessary stability for application. It shall be open to other Member States to demonstrate to the Committee referred to in Article 7 that equipment conforming to the standard had been used satisfactorily, and that use of this waiver was not justified ;
- where, after careful consultation of the market, it is found that important reasons related to cost-effectiveness make use of the standard or functional specification in question inappropriate. It would be open to other Member States to demonstrate to the Committee referred to in Article 7 that equipment conforming to that standard had been used satisfactorily on a normal commercial basis, and that use of this waiver was not justified.

4. In addition, Member States may require reference, on the same basis as in paragraph 1, to draft international standards.

5. Contracting authorities relying upon paragraph 3 shall record their reasons for doing so, if possible, in the initial tender documents issued in respect of the procurement, and in all cases shall record these reasons in their internal documentation and shall supply such information on request to tendering companies and to the Committee referred to in Article 7 whilst respecting

commercial confidentiality. It shall also be possible for complaints about use of derogations referred to in paragraph 3 to be made direct to the Commission.

6. The Commission shall ensure that the provisions of this Article are applied in the case of all Community projects and programmes, including public procurement orders financed from the Community budget.

7. Contracting authorities, if they consider it necessary, may apply other specifications to contracts of a value lower than 100 000 ECU, provided that these purchases will not prevent the use of the standards mentioned in paragraphs 1 and 2 in any contract of a greater value than the sum mentioned in this paragraph. The need for the derogation or the level of the threshold established in this paragraph will be reviewed within three years of the bringing into application of this Decision.

Article 6

When drafting or amending technical regulations in areas covered by this Decision, Member States shall refer to the standards referred to in Article 5 whenever these meet in an appropriate fashion the required technical specifications of the regulation.

Article 7

1. An advisory committee, called the 'Senior Officials Group on standardization in the field of Information Technology' shall assist the Commission in its pursuance of the objectives and its management of the activities laid down by the Decision. It shall consist of representatives appointed by the Member States, who may call on the assistance of experts or advisers : its chairman shall be a representative of the Commission. For telecommunication issues the competent committee is the 'Senior Officials Group for Telecommunications' provided for in Article 5 of Directive 86/361/EEC.

2. The Commission shall consult the Committee when determining Community priorities, implementing measures referred to in the Annex, when dealing with matters concerning the verification of conformity to standards, monitoring the implementation of Article 5 and other matters relating to standardization in the field of information technology and telecommunications, or other fields which overlap. It shall also consult the Committee on the report referred to in Article 8.

3. The Commission shall coordinate the activities of these Committees with the Committee provided for in Article 5 of Directive 83/189/EEC in particular where there is a potential overlap in issuing requests to European standards institutions under this Decision and that Directive.

4. Any questions regarding the implementation of this Decision may be submitted to the Committee at the request of the Chairman or a Member State.

5. The Committee shall meet at least twice a year.

6. The Committee shall adopt its own rules of procedure.

7. The Secretariat of the Committee shall be provided by the Commission.

Article 8

Every two years the Commission shall submit a progress report to the European Parliament and the Council on standardization activities in the information technology sector. This report shall refer to the implementing arrangements adopted within the Community, the results obtained, the application of those results in public procurement contracts and national technical regulations, and, in particular, their practical significance for certification.

Article 9

This Decision shall not prejudice the application of Directive 83/189/EEC and Directive 86/361/EEC.

Article 10

This Decision shall be brought into application one year from the date of its publication in the *Official Journal of the European Communities*.

Article 11

This Decision is addressed to the Member States.

Done at Brussels, 22 December 1986.

For the Council

The President

G. SHAW

ANNEX**MEASURES FOR STANDARDIZATION IN THE FIELD OF INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS****1. Aims**

- (a) to contribute to the integration of the internal Community market in the information technology and telecommunications sector ;
- (b) to improve the international competitiveness of Community manufacturers by allowing for greater market uptake in the Community of equipment manufactured to recognized European and international standards ;
- (c) to facilitate the exchange of information throughout the Community, by reducing the obstacles created by incompatibilities arising from the absence of standards or their lack of precision ;
- (d) to ensure that user requirements are taken into account by giving users greater freedom to assemble their systems in a manner guaranteeing operating compatibility and, consequently, improved performance at a lower cost ;
- (e) to promote the application of standards and functional specifications in public sector orders.

2. Description of measures and activities to be undertaken**2.1. *Preparation of work programmes and definition of priorities***

The drawing-up of work programmes and assignment of priorities taking account of Community requirements and the economic impact of these activities from the standpoint of users, producers and telecommunications administrations. The tasks to be performed at this level may include, in particular :

- 2.1.1. gathering detailed information on the basis of national and international programmes, presentation of that information in a form which facilitates comparative analysis and preparation of the summaries required for the work of the Committee ;
- 2.1.2. The dissemination of that information, the examination of requirements and the consultation of interested parties ;
- 2.1.3. synchronization of the work programmes with international standardization activities ;
- 2.1.4. the management of work programmes ;
- 2.1.5. the preparation of reports describing the execution of the activities and the practical results of their implementation.

2.2. *The execution of standardization activities in the field of information technology*

Execution of the work programmes necessitates the implementation of a series of activities, responsibility for which is generally entrusted to CEN/CENELEC and to the CEPT and which correspond to the different stages of activity that must be completed in order to ensure the credibility of standards.

These activities include :

- 2.2.1. the refinement of international standards in an effort to remove the ambiguities and options that distort the function of standards designed to guarantee the exchange of information and the compatible operation of systems ;
- 2.2.2. the drafting of prestandards in cases justified by the excessive delays of international standardization procedures, or of standards required in the Community context in the absence of international standards ;
- 2.2.3. the definition of the conditions to be fulfilled in order to establish complete conformity to a standard ;
- 2.2.4. the preparation of test standards or test specifications included in the standards and the organization of procedures and structures to enable test laboratories to check conformity to those standards on a properly harmonized basis.

2.3. *Activities affecting the telecommunications sector*

The standardization measures which concern the telecommunications sector include two types of activity :

- the drafting of functional specifications, based on international or European standards/specifications where they exist, for the means of access to public telecommunication networks for those services specifically intended for exchange of information and data between information technology systems. This technical work comes under the harmonization activities carried out in the telecommunications section and is entrusted to CEPT following the procedures described in Directive 86/361/EEC,
- the work to be carried out in the field common to information technology and to telecommunications requires increased cooperation between the competent technical bodies (i.e. CEN/CENELEC/CEPT). It should raise the degree of convergence so that the standards and functional specifications can be applied in as many ways as possible and in a harmonized manner following the procedure described in Directive 83/189/EEC.

2.4. *Complementary measures*

This part of the programme covers the following measures :

2.4.1. specific metrological activities relating to :

- promotion of the development of test and validation instruments and formal description techniques,
- support for the case of references, particularly in the case of applications requiring the use of functional standards based on a number of standards in combination ;

2.4.2. the promotion of the preparation of manuals giving guidance on the application of standards for the final user ;

2.4.3. the promotion of demonstrations in respect of the operating compatibility achieved as a result of the application of a standard. The main aim of this action will be to make the test and metrological instruments defined in 2.4.1. available for use in different projects and to ensure that development standards are experimented with ;

2.4.4. the promotion of arrangements that go beyond the framework of industrial standardization, depend on agreements concluded in particular fields of professional activity and contribute to the efficient exchange of information (travel agency transactions, automation of money transactions, computerization of customs documents, robotics, office automation, micro-computing, etc.) ;

2.4.5. studies and projects relating specifically to standardization in the field of information technology.

3. **Measures relating to the application of standards in the public procurement sector**

Determination of the most efficient methods of ensuring the rapid application of the standards and technical specifications within the context of the present Decision while assuring appropriate linking with activities depending on Directive 77/62/EEC (¹).

(¹) OJ No L 13, 15. 1. 1977, p. 1.

I

(Information)

COUNCIL

COUNCIL RESOLUTION

of 21 December 1989

on a global approach to conformity assessment

(90/C 10/01)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

RECALLING its resolution of 7 May 1985 on a new approach to technical harmonization and standards ⁽¹⁾ in which it stated that the new approach should be accompanied by a policy on the assessment of conformity;

RECALLING the objectives of the Single European Act, including the strengthening of economic and social cohesion;

STRESSES the importance of a global approach in this area, as outlined by the Commission in its communication of 24 July 1989 ⁽²⁾, with the aim of creating the conditions which will enable the principle of mutual recognition of proofs of conformity to operate in both the regulatory and the non-regulatory sphere;

TAKING INTO CONSIDERATION the basic lines of that approach,

HEREBY ADOPTS the following guiding principles for a European policy on conformity assessment:

- a consistent approach in Community legislation should be ensured by devising modules for the various phases of conformity assessment procedures and by laying down criteria for the use of those procedures, for the designation and notification of bodies under those procedures, and for use of the EC mark,
- generalized use of the European standards relating to quality assurance (EN 29 000) and to the

requirements to be fulfilled by the abovementioned bodies concerned (EN 45 000), the setting-up of accreditation systems and the use of techniques of intercomparison should be promoted in all Community Member States as well as at Community level,

- the promotion of mutual recognition agreements on certification and testing between bodies operating in the non-regulatory sphere is essential for the completion of the internal market; the setting-up of a flexible, unbureaucratic testing and certification organization at European level with the basic role of promoting such agreements and of providing a prime forum within which to frame them should significantly contribute to the furtherance of that objective,
- possible differences in levels of development in the Community and in industrial sectors with regard to quality infrastructure (especially calibration and metrology systems, testing laboratories, certification and inspection bodies, and accreditation systems) such as are likely to have an adverse effect on the operation of the internal market should be studied with a view to the preparation of a programme of Community measures, possibly including budgetary measures, as soon as possible,
- in its relations with third countries the Community will endeavour to promote international trade in regulated products, in particular by concluding mutual recognition agreements on the basis of Article 113 of the Treaty in accordance with Community law and with the Community's international obligations, while ensuring in the latter case that:

- the competence of the third country bodies is and remains on a par with that required of their Community counterparts,

⁽¹⁾ OJ No C 136, 4. 6. 1985, p. 1.

⁽²⁾ OJ No C 231, 8. 9. 1989, p. 3, and OJ No C 267, 19. 10. 1989, p. 3.

-
- the mutual recognition arrangements are confined to reports, certificates and marks drawn up and issued directly by the bodies designated in the agreements,
 - in cases where the Community wishes to have its own bodies recognized, the agreements establish a balanced situation with regard to the advantages derived by the parties in all matters

relating to conformity assessment for the products concerned.

The Commission is requested to submit recommendations to the Council as soon as possible for detailed negotiating directives under Article 113 of the Treaty.

The Council also calls on the Commission to prepare the measures necessary to put this resolution into practice.

Amended proposal for a Council Directive on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity

COM(90) 263 final — SYN 204

(Submitted by the Commission pursuant to Article 149 (3) of the EEC Treaty on 20 June 1990)

(90/C 187/09)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100A thereof,

Having regard to the proposal from the Commission,

In cooperation with the European Parliament,

Having regard to the opinion of the Economic and Social Committee,

Whereas Council Directive 86/361/EEC⁽¹⁾ introduced the initial stage of the mutual recognition of type approval for telecommunications terminal equipment and in particular in

⁽¹⁾ OJ No L 217, 5. 8. 1986, p. 21.

its Article 9 envisaged a further stage for full mutual recognition of type approval for terminal equipment;

Whereas Council Decision 87/95/EEC (1) sets out the measures to be implemented for the promotion of standardization in Europe and the preparation and implementation of standards in the field of information technology and telecommunications;

Whereas the Commission has issued a Green Paper on the development of the common market for telecommunications services and equipment (2) proposing to accelerate the introduction of the full mutual recognition of type approval as the measure vital for the development of a competitive Community-wide terminal market;

Whereas the Council in its resolution of 30 June 1988 on the development of the common market for telecommunications services and equipment up to 1992 (3) considers as a major goal in the telecommunications policy the full mutual recognition of type approval for terminal equipment on the basis of the rapid development of common European conformity specifications;

Whereas the terminal equipment sector is a vital part of the telecommunications industry which is one of the industrial mainstays of the Community economy;

Whereas the Council resolution of 7 May 1985 (4), provides for a new approach to technical harmonization and standards;

Whereas the field of application of the Directive must be based on a general definition of the term 'terminal equipment' so as to allow the technical development of products;

Whereas Community law, in its present form, provides — notwithstanding one of the fundamental rules of the Community, namely the free movement of goods — that obstacles to movement within the Community, resulting from disparities in national legislation relating to the marketing of products must be accepted in so far as such requirements can be recognized as being necessary to satisfy imperative requirements; whereas, therefore, the harmonization of laws in this case must be limited only to those requirements necessary to satisfy the essential requirements relating to terminal equipment; whereas these requirements must replace the relevant national requirements because they are essential;

Whereas the essential requirements must be satisfied in order to safeguard the general interest; whereas these requirements must be applied with discernment to take account of the state of the art at the time of manufacture and economic requirements;

Whereas Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits (5) and Council Directive 83/189/EEC of 28 March 1983 laying down a procedure for the provision of information in the field of technical standards and regulations (6), as amended by Directive 88/182/EEC (7), are applicable, *inter alia*, to the fields of telecommunications and information technology;

Whereas Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of Member States relating to electromagnetic compatibility (8) is applicable, *inter alia*, to the fields of telecommunications and information technology;

Whereas in respect of the essential safety requirements and in order to help manufacturers to prove conformity to these essential requirements it is desirable to have standards harmonized at European level for the prevention of hazards arising out of the design and manufacture of terminal equipment and in order to allow checks of conformity to the essential requirements; whereas these standards harmonized at European level are drawn up by private-law bodies and must retain their non-binding status; whereas for this purpose the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (Cenelec) are the bodies recognized as competent to adopt harmonized standards in accordance with the general guidelines for cooperation between the Commission and these two bodies signed on 13 November 1984; whereas within the meaning of this Directive a harmonized standard is a technical specification (European standard or harmonization document) adopted by either or both of these bodies, on the basis of a remit from the Commission in accordance with the provisions of Directive 83/189/EEC, and on the basis of the general guidelines referred to above;

Whereas the formal adoption of the statutes of the European Telecommunications Standards Institute (ETSI) on 12 February 1988 creates a new opportunity to produce harmonized standards in the telecommunications field; whereas after implementation by the Member States of the ETSI rules of procedures which depend on their authority it will be possible to introduce ETSI into the framework of European standardization as stipulated in Directive 83/189/EEC;

Whereas in respect of the essential requirements related to interworking with public telecommunications networks, it is in general not possible to comply with such requirements other than by the application of unique solutions; whereas such solutions shall therefore be mandatory;

Whereas it is essential to ensure that notified bodies are of a high standard throughout the Community and meet

(1) OJ No L 36, 7. 2. 1987, p. 31.

(2) COM(87) 290.

(3) OJ No C 257, 4. 10. 1988, p. 1.

(4) OJ No C 136, 4. 6. 1985, p. 1.

(5) OJ No L 77, 26. 3. 1973, p. 29.

(6) OJ No L 109, 26. 4. 1983, p. 8.

(7) OJ No L 81, 26. 3. 1988, p. 75.

(8) OJ No L 139, 23. 5. 1989, p. 19.

minimum criteria of competence, impartiality and financial and other independence from clients;

Whereas it is appropriate to set up a committee bringing together parties directly concerned with the implementation of this Directive, in particular the national bodies designated for certifying conformity, to assist the Commission in executing the tasks entrusted to it by this Directive; whereas representatives of the telecommunications organizations, users, consumers, manufacturers, service providers and the trade unions should have the right to be consulted;

Whereas the Member States' responsibility for safety, health and the other aspects covered by the essential requirements on their territory must be recognized in a safeguard clause providing for adequate Community protection procedures;

Whereas the addressees of any decision taken under this Directive must be informed of the reasons for such a decision and the means of appeal open to them;

Whereas the measures aimed at the gradual establishment of the internal market must be adopted by 31 December 1992; whereas the internal market consists of an area without internal frontiers within which the free movement of goods, persons, services and capital is guaranteed,

HAS ADOPTED THIS DIRECTIVE:

CHAPTER I

Scope, placing on the market and free movement

Article 1

1. This Directive shall apply to terminal equipment.
2. For the purposes of this Directive terminal equipment means equipment intended:
 - (a) to be connected to the termination of a public telecommunications network by an electrically conductive system;
and/or
 - (b) to interwork with a public telecommunications network;
and/or
 - (c) to interwork via a public telecommunications network.

For cases (b) and (c) the system of connection to support the interworking may be wire, radio, optical, or other electromagnetic systems.

3. The intended purpose shall be declared by the manufacturer or supplier of the equipment.

Article 2

Member States shall take all necessary steps to ensure that terminal equipment may be placed on the market and put into service only if it complies with the requirements laid down in this Directive when it is properly installed and maintained and used for its intended purpose.

Article 3

Terminal equipment shall satisfy the following essential requirements, when they are relevant:

- (a) user safety in so far as this requirement is not covered by Directive 73/23/EEC;
- (b) safety of employees of public telecommunications network operators in so far as this requirement is not covered by Directive 73/23/EEC;
- (c) protection of the public telecommunications network from harm;
- (d) interworking of terminal equipment with network equipment for the purpose of establishing, modifying, charging for, and clearing real or virtual connections;
- (e) interworking of terminal equipment, in justified cases, as determined in accordance with the procedure laid down in Article 13.

Article 4

Member States shall not impede the placing on the market and the free circulation and use on their territory of terminal equipment which complies with the provisions of this Directive.

Article 5

1. Member States shall presume compliance with the essential requirements referred to in Article 3 (a) and (b) in respect of terminal equipment which is in conformity with the national standards implementing the relevant harmonized standards the references of which have been published in the *Official Journal of the European Communities*. Member States shall publish the references of such national standards.

2. The Commission, in accordance with the procedure laid down in Article 13, shall decide which harmonized standards, implementing the essential requirements referred to in Article 3 (c), (d) and (e) will be transformed in whole or in part into technical regulations compliance with which

shall be mandatory and the references of which shall be published in the *Official Journal of the European Communities*.

Article 6

Where a Member State or the Commission considers that the harmonized standards referred to in Article 5 do not entirely meet or exceed the essential requirements referred to in Article 3, the Commission or the Member State concerned shall bring the matter before the Committee referred to in Article 12, hereinafter referred to as 'the Committee', giving the reasons therefor. The Committee shall deliver an opinion without delay.

In the light of the Committee's opinion and after consultation of the Standing Committee set up by Directive 83/189/EEC, the Commission shall inform the Member States whether or not it is necessary to withdraw references to those standards and any related technical regulations from the *Official Journal of the European Communities*.

Article 7

1. Where a Member State finds that terminal equipment bearing the EC mark under the provisions laid down in chapter III does not comply with the relevant essential requirements when properly used in accordance with the purpose intended by the manufacturer, it shall take all appropriate measures to withdraw such products from the market or to prohibit or restrict their being placed on the market.

The Member State concerned shall immediately inform the Commission of any such measure indicating the reasons for its decision, and in particular whether non-compliance is due to:

- (a) incorrect application of the harmonized standards referred to in Article 5;
- (b) shortcomings in the harmonized standards referred to in Article 5 themselves.

2. The Commission shall enter into consultation with the parties concerned as soon as possible. Where, after such consultation, the Commission finds that any measure as referred to in paragraph 1 is justified it shall immediately so inform the Member State that took the action and the other Member States. Where the decision referred to in paragraph 1 is attributed to shortcomings in the harmonized standards, the Commission, after consulting the parties concerned, shall bring the matter before the Committee within two months if the Member State which has taken the measures intends to maintain them, and shall initiate the procedure referred to in Article 6.

3. Where terminal equipment which does not comply with the relevant essential requirements bears the EC mark the competent Member State shall take appropriate action against whomsoever has affixed the mark and shall inform the Commission and the other Member States thereof.

4. The Commission shall keep the Member States informed of the progress and outcome of this procedure.

CHAPTER II

Conformity assessment

Article 8

1. According to the choice of the manufacturer or his authorized representative established within the Community, terminal equipment shall be subject to either EC type examination, as described in Annex 1, or to EC declaration of conformity, as described in Annex 4.

2. An EC type examination as described in Annex 1 shall be accompanied by a declaration issued according to the EC declaration of conformity to type procedure as described in Annex 2 or 3.

3. The records and correspondence relating to the procedures referred to in this Article shall be in an official language of the Member State where the said procedure will be carried out, or in a language acceptable to the notified body involved.

Article 9

1. Member States shall notify to the other Member States and the Commission the bodies which they have designated for carrying out tasks pertaining to the procedures referred to in Article 8, the specific tasks for which each body has been designated, and the identification codes of the designated bodies.

The Commission shall publish the list of these notified bodies together with the tasks for which they have been designated, in the *Official Journal of the European Communities* and shall keep the list up to date.

2. Member States shall apply the minimum criteria, set out in Annex 5, for the designation of bodies. Bodies that satisfy the criteria fixed by the relevant harmonized standards shall be presumed to satisfy the criteria set out in Annex 5.

3. A Member State that has designated a body shall annul the designation if the body no longer meets the criteria for designation referred to in paragraph 2. It shall immediately inform the other Member States and the Commission accordingly and withdraw the notification.

4. In order to facilitate the determination of conformity of terminal equipment with technical regulations and standards, the notified bodies shall recognize documentation issued by third country relevant bodies, when agreements between the Community and the third country concerned have been concluded on the basis of a mutually-satisfactory understanding.

CHAPTER III

EC mark of conformity and inscriptions

Article 10

1. The EC mark of conformity, which shall consist of the symbol 'CE' in conformity with the specimen in Annex 6, shall be affixed to terminal equipment in a clearly visible, easily legible and indelible form. It shall be followed by the last two digits of the year in which it was affixed.
2. The affixing of marks which are likely to be confused with the EC mark of conformity shall be prohibited.
3. Terminal equipment shall be identified by the manufacturer by means of type, batch, or serial numbers and the manufacturer's name.

Article 11

Where it is established that the EC mark has been affixed to terminal equipment which:

- does not conform to an approved type,
- conforms to an approved type which does not meet the essential requirements applicable to it,

or, where the manufacturer has failed to fulfil his obligations under the relevant EC declaration of conformity,

the notified body shall withdraw the EC type examination certificate as referred to in Annex 1, the EC quality system approval certificate, as referred to in Annex 3 or the EC design examination certificate as referred to in Annex 4, as relevant, notwithstanding any decisions taken pursuant to Article 7.

CHAPTER IV

Committee

Article 12

1. A Standing Committee for terminal equipment is hereby set up. The Committee shall be called the Approvals Committee for Telecommunications Equipment (ACTE). The Committee shall be composed of representatives appointed by the Member States. It shall be chaired by a representative of the Commission. Each Member State shall appoint two representatives. The representatives may be accompanied by experts.

The Committee shall draw up its own rules of procedure.

2. The Commission will periodically consult the representatives of the telecommunications organizations, the consumers, the manufacturers, the service providers and the trade unions and will inform the Committee on the outcome

of such consultations, with a view to taking due account of this outcome.

Article 13

1. The representative of the Commission shall submit to the Committee established in Article 12, a draft of the measures to be taken as referred to in Article 5 (2). The Committee shall deliver its opinion on the draft within a time limit which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148 (2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the Committee shall be weighted in the manner set out in that Article. The chairman shall not vote.

2. The Commission shall adopt the measures envisaged if they are in accordance with the opinion of the Committee.

3. If the measures envisaged are not in accordance with the opinion of the Committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by qualified majority. If, within three months of the proposal being submitted to it, the Council has not acted, the proposed measures shall be adopted by the Commission.

CHAPTER V

Final and transitional provisions

Article 14

1. Where, for a given terminal equipment, harmonized standards as referred to in Article 5 do not exist, national conformity specifications shall be applicable. These national conformity specifications shall not impose requirements beyond those strictly necessary to respect the essential requirements set out in Article 3.

The right to place on the market terminal equipment, which has received national type approval on the basis of national conformity specifications, may be limited to the territory of the Member State where the national conformity specification applies except if it complies with a national specification of another Member State and is intended for re-sale or for use in this Member State.

2. A national authority shall recognize, for the purpose of national type approval, a certificate of conformity to its own national conformity specification, accompanied by the appropriate test reports, which has been issued by an notified

body of another Member State and shall not impose a requirement for any repetition of tests.

A national authority shall recognize, for the purpose of national type approval, a certificate of conformity based on the national conformity specifications of another Member State provided that these conformity specifications are equivalent to those used in the Member State of the authority.

Article 14a

The Commission shall draw up a report every two years on the implementation of this Directive, including progress on drawing up the relevant harmonized standards and on transforming them into mandatory technical regulations, as well as any problems that have arisen in the course of implementation. The report will also outline the activities of the Committee established in Article 12, and assess progress in achieving an open competitive market for terminal equipment at Community level consistent with the essential requirements in Article 3.

Article 15

Directive 86/361/EEC is hereby repealed with effect from (1 January 1992) ⁽¹⁾.

Article 16

1. Member States shall introduce the measures necessary to comply with this Directive referred not later than (1 January 1992) ⁽¹⁾. They shall forthwith inform the Commission thereof.

The provisions adopted pursuant to the first subparagraph shall make express reference to this Directive.

2. Member States shall inform the Commission of the provisions of national law which they adopt in the field governed by this Directive.

Article 17

This Directive is addressed to the Member States.

⁽¹⁾ To be adapted at the date of adoption of the Directive.

ANNEX 1

EC TYPE EXAMINATION

1. The EC type examination is that part of the procedure by which a notified body ascertains and attests that terminal equipment, representative of the production envisaged and hereinafter called the 'type', conforms to the essential requirements that apply to it.
2. The application for EC type examination shall be lodged by the manufacturer or his authorized representative established within the Community with one of the notified bodies designated to carry out EC type examination.

The application shall include:

- the name and address of the manufacturer and, if the application is lodged by the authorized representative, his name and address in addition,
- a written declaration that the application has not been lodged with any other notified body,
- the technical documentation, as described in paragraph 3.

The applicant shall place the type, in the required quantity, at the disposal of the notified body.

3. The technical documentation shall enable understanding of the design, manufacture and operation of the product, so far as is relevant for assessment of conformity of the product with the essential requirements that apply to it.

The documentation shall contain so far as relevant for assessment:

- a general description of the type,
- conceptual design and manufacturing drawings and schemes of components, sub-assemblies, circuits, etc.,
- descriptions and explanations necessary for the understanding of said drawings and schemes and the operation of the product,

- a list of the standards referred to in Article 5, applied in full or in part, declarations of conformity to the standards referred to in Article 5 (1) where such standards have been applied, and descriptions of the solutions adopted to meet the essential requirements where the standards referred to in Article 5 (1) have not been applied,
 - results of design calculations made, examinations carried out, etc.,
 - test reports.
4. The notified body shall,
- 4.1. examine the technical documentation, verify that the type has been manufactured in conformity with the technical documentation and identify the elements which have been designed in accordance with the relevant provisions of the standards referred to in Article 5 (1), as well as the elements which have been designed without applying the relevant provisions of those standards;
 - 4.2. perform or have performed the appropriate examinations and necessary tests to check whether, where the standards referred to in Article 5 (1) have not been applied, the solutions adopted by the manufacturer meet the essential requirements of the Directive referred to in Article 3 (a) and (b);
 - 4.3. perform or have performed the appropriate examinations and necessary tests to check that the type complies with the relevant harmonized standards referred to in Article 5 (2).
5. Where the type conforms to the applicable essential requirements the notified body shall issue an EC type examination certificate to the applicant. The certificate shall contain the name and address of the manufacturer, conclusions of the examination, conditions for its validity and the necessary data for identification of the approved type.
- Relevant parts of technical documentation shall be annexed to the certificate and kept by the notified body.
6. The applicant shall keep the notified body that has issued the EC type examination certificate informed of any modification to the approved type.
- Modifications to the approved type must receive additional approval from the notified body that issued the EC type examination certificate where such changes may affect the conformity with the essential requirements or the prescribed conditions for use of the product. This additional approval is given in the form of an addition to the original EC type examination certificate.
7. Each notified body shall publish periodically the relevant information concerning:
- the applications for EC type examination received,
 - the EC type examination certificates and additions issued,
 - the EC type examination certificates and additions refused,
 - the EC type examination certificates and additions withdrawn.
8. The other notified bodies may receive copies of the EC type examination certificates and/or their additions and any annexes.

ANNEX 2

EC DECLARATION OF CONFORMITY TO TYPE

1. This declaration of conformity is that part of the procedure whereby the manufacturer ensures and declares that the products concerned are in conformity with the type as described in the EC type examination certificate and satisfy the requirements of the Directive that apply to them. The manufacturer shall affix the EC mark to each product and draw up a written declaration of conformity.
2. The manufacturer shall take all measures necessary in order that the manufacturing process shall ensure compliance of the manufactured products with the type as described in the EC type examination certificate and with the requirements of the Directive that apply to them.

3. A notified body chosen by the manufacturer shall carry out or have carried out product checks at random intervals. An adequate sample of the final products, taken on site by the notified body, shall be examined and appropriate tests as set out in the relevant standard(s) referred to in Article 5, shall be carried out to check the conformity of the production output with the relevant requirements of the Directive. In those cases where one or more of the products checked do not conform the notified body shall take appropriate measures.

ANNEX 3

EC DECLARATION OF CONFORMITY TO TYPE (PRODUCTION QUALITY ASSURANCE)

1. This declaration of conformity is that part of the procedure whereby a manufacturer who satisfies the obligations of paragraph 2 ensures and declares that the products concerned are in conformity with the type as described in the EC type examination certificate and satisfy the requirements of the Directive that apply to them. The manufacturer shall affix the EC mark to each product and shall draw up a written declaration of conformity.

2. The manufacturer shall operate an approved quality system for production, final product inspection and testing as specified in paragraph 3 and shall be subject to EC surveillance as specified in paragraph 4.

3. Quality system

- 3.1. The manufacturer shall lodge an application for assessment of his quality system with one of the notified bodies designated to carry out quality system approval.

The application shall include:

- all relevant information for the product category envisaged,
- the quality system's documentation,
- an undertaking to carry out the obligations arising from the quality system as approved,
- an undertaking to maintain the quality system as approved to ensure its continuing suitability and effectiveness,
- if applicable, the technical documentation of the approved type and a copy of the EC type examination certificate.

- 3.2. The quality system shall ensure compliance of the products with the type as described in the EC type examination certificate and with the requirements of the Directive that apply to them.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic and orderly manner in the form of written policies, procedures and instructions. This quality system documentation shall ensure a common understanding of the quality programmes, plans, manuals and records.

It shall contain in particular an adequate description of:

- the quality objectives and the organizational structure, responsibilities and powers of the management with regard to product quality,
- the manufacturing, quality control and quality assurance techniques, processes and systematic actions that will be used,
- the examinations and tests that will be carried out before, during and after manufacture and the frequency with which they will be carried out,
- the means to monitor the achievement of the required product quality and the effective operation of the quality system.

- 3.3. The notified body shall assess the quality system to determine whether it satisfies the requirements referred to in paragraph 3.2. It shall presume conformity with these requirements in respect of quality systems that implement the relevant harmonized standard.

The assessment team shall have at least one member experienced as an assessor in the product technology concerned. The evaluation procedure shall include an assessment visit to the manufacturer's premises.

The decision shall be notified to the manufacturer. The notification shall contain the conclusions of the examination and the reasoned assessment decision. Where the notified body decides to approve the quality system it shall issue an EC quality system approval certificate.

- 3.4. The manufacturer or his authorized representative shall keep the notified body that has approved the quality system informed of any intended modification to the quality system.

The notified body shall evaluate the modifications proposed and decide whether the amended quality system will still satisfy the requirements referred to in paragraph 3.2 or whether a re-assessment is required.

It shall notify its decision to the manufacturer. The notification shall contain the conclusions of the examination and the reasoned assessment decision.

4. EC surveillance

- 4.1. The purpose of EC surveillance is to make sure that the manufacturer duly fulfils the obligations arising out of the approved quality system.

- 4.2. The manufacturer shall allow the notified body entrance for inspection purposes to the locations of manufacture, inspection, testing and storage and shall provide it with all necessary information, in particular:

- the quality system documentation,
- the quality records, such as inspection reports and test data, calibration data, qualification reports of the personnel concerned, etc.

- 4.3. The notified body shall periodically carry out audits to make sure that the manufacturer maintains and applies the quality system and shall provide an audit report to the manufacturer.

- 4.4. Additionally the notified body may pay unexpected visits to the manufacturer. During such visits full or reduced audits may be carried out by the notified body. The notified body shall provide a visit report and, if applicable, an audit report to the manufacturer.

5. Each notified body shall publish periodically the relevant information concerning the EC quality system approval certificates issued and withdrawn.

ANNEX 4

EC DECLARATION OF CONFORMITY (FULL QUALITY ASSURANCE)

1. This declaration of conformity is the procedure whereby the manufacturer who satisfies the obligations of paragraph 2 ensures and declares that the products concerned satisfy the requirements of the Directive that apply to them. The manufacturer shall affix the EC mark to each product and draw up a written declaration of conformity.

2. The manufacturer shall operate an approved quality system for design, manufacture and final product inspection and testing as specified in paragraph 3 and shall be subject to EC surveillance as specified in paragraph 4.

3. Quality system

- 3.1. The manufacturer shall lodge an application for assessment of his quality system with a notified body.

The application shall include:

- all relevant information for the product category envisaged,
- the quality system's documentation,
- an undertaking to carry out the obligations arising from the quality system as approved,
- an undertaking to maintain the quality system as approved to ensure its continuing suitability and effectiveness.

- 3.2. The quality system shall ensure compliance of the products with the requirements of the Directive that apply to them.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic and orderly manner in the form of written policies, procedures and instructions. This quality system documentation shall ensure a common understanding of the quality policies and procedures such as quality programmes, plans, manuals and records.

It shall contain in particular an adequate description of:

- the quality objects and the organizational structure, responsibilities and powers of the management with regard to design and product quality,
- the technical design specifications including harmonized standards and technical regulations laid down in Article 5,
- the design control and design verification techniques, processes and systematic actions that will be used when designing the products pertaining to the product category covered,
- the corresponding manufacturing, quality control and quality assurance techniques, processes and systematic actions that will be used,
- the examination and tests that will be carried out before, during, and after manufacture, and the frequency with which they will be carried out,
- the means by which it is ensured that the test and examination facilities respect the requirements for notified bodies designated for testing,
- the means to monitor the achievement of the required design and product quality and the effective operation of the quality system.

- 3.3. The notified body shall assess the quality system to determine whether it satisfies the requirements referred to in paragraph 3.2. It shall presume compliance with these requirements in respect of quality systems that implement the relevant harmonized standard (i.e. EN 29001).

The assessment team shall have at least one member experienced as an assessor in the product technology concerned. The evaluation procedure shall include an assessment visit to the manufacturer's premises.

The decision shall be notified to the manufacturer. The notification shall contain the conclusions of the examination and the reasoned assessment decision.

- 3.4. The manufacturer or his authorized representative shall keep the notified body that has approved the quality system informed of any intended updating of the quality system.

The notified body shall evaluate the modifications proposed and decide whether the amended quality system will still satisfy the requirements referred to in paragraph 3.2 or whether a re-assessment is required.

It shall notify its decision to the manufacturer. The notification shall contain the conclusion of the examination and the reasoned assessment decision.

4. EC surveillance

- 4.1. The purpose of EC surveillance is to make sure that the manufacturer duly fulfils the obligations arising out of the approved quality system.

- 4.2. The manufacturer shall allow the notified body entrance for inspection purposes to the locations of design, manufacture, inspection and testing, and storage, and shall provide it with all necessary information, in particular:

- the quality system documentation,
- the quality records as foreseen by the design part of the quality system, such as results of analyses, calculations, tests, etc.,
- the quality records as foreseen by the manufacturing part of the quality system, such as inspection reports and test data, calibration data, qualification reports of the personnel concerned, etc.

- 4.3. The notified body shall periodically carry out audits to make sure that the manufacturer maintains and applies the quality system and shall provide an audit report to the manufacturer.

- 4.4. Additionally the notified body may pay unexpected visits to the manufacturer. During such visits full or reduced audits may be carried out by the notified body. The notified body shall provide a visit report and, if applicable, an audit report to the manufacturer.

5. Each notified body shall publish periodically the relevant information concerning the quality system approvals issued and withdrawn.
6. Design examination
 - 6.1. The manufacturer shall lodge an application for examination of the design with a notified body.
 - 6.2. The application shall enable understanding of the design, manufacture and operation of the product, and shall enable assessment of conformity with the relevant requirements of the Directive.

It shall include:

 - the technical design specifications, including harmonized standards and technical regulations laid down in Article 5 that have been applied,
 - the necessary supporting evidence for their adequacy. This supporting evidence shall include the results of tests carried out by an in-house notified body designated for testing or on behalf of the manufacturer by a notified body designated for testing.
 - 6.3. The notified body shall examine the application and where the design meets the provisions of the Directive that apply to it shall issue an EC design examination certificate to the applicant. The certificate shall contain the conclusions of the examination, conditions for its validity, the necessary data for identification of the approved design and, if relevant, a description of the product's functioning.
 - 6.4. The applicant shall keep the notified body that has issued the EC design examination certificate informed of any modification to the approved design. Modifications to the approved design must receive additional approval from the notified body that issued the EC examination certificate where such changes may affect the conformity with the essential requirements of the Directive or the prescribed conditions for use of the product. This additional approval is given in the form of an addition to the original EC design examination certificate.
 - 6.5. The notified bodies shall publish periodically the relevant information concerning:
 - the applications for EC design examination received,
 - the EC design examination certificates and additions issued,
 - the EC design examination certificates and additions reissued,
 - the EC design examination certificates and additions refused,
 - the EC design approvals and additional approvals withdrawn.

ANNEX 5

MINIMUM CRITERIA TO BE TAKEN INTO ACCOUNT BY MEMBER STATES WHEN APPOINTING NOTIFIED BODIES

1. The notified body, its director and staff responsible for carrying out the tasks for which the notified body has been designated shall not be a designer, manufacturer, supplier or installer of terminal equipment, nor the authorized representative of any of such parties. They shall not become directly involved in the design, construction, marketing or maintenance of terminal equipment, nor represent the parties engaged in these activities. This does not preclude the possibility of exchanges of technical information between the manufacturer and the notified body.
2. The notified body and its staff must carry out the tasks for which the notified body has been designated with the highest degree of professional integrity and technical competence and must be free from all pressures and inducements, particularly financial, which might influence their judgement or the results of any tests or inspection, especially from persons or groups of persons with an interest in such results.
3. The notified body must have at its disposal the necessary staff and facilities to enable it to perform properly the administrative and technical work associated with the tasks for which it has been designated.

4. The staff responsible for tests or inspections must have:
 - sound technical and professional training,
 - satisfactory knowledge of the requirements of the tests or inspections they carry out and adequate experience of such tests or inspections,
 - the ability to draw up the certificates, records and reports required to authenticate the performance of the test or inspections.
5. The impartiality of test and inspection staff must be guaranteed. Their remuneration must not depend on the number of tests or inspections carried out nor on the results of such tests or inspections.
6. The notified body must take out liability insurance unless its liability is assumed by the State in accordance with national law, or the Member State itself is directly responsible.
7. The staff of the notified body is bound to observe professional secrecy with regard to all information gained in carrying out its tasks (except *vis-à-vis* the competent administrative authorities of the State in which its activities are carried out) under this Directive or any provision of national law giving effect to it.

ANNEX 6



Commission of the
European Communities

200, Rue de la Loi
B-1049 Brussels
Belgium

☎ (02) 235 11 11

Standardization ☎ (02) 235 21 55



Directorate-General XIII
Telecommunications, Information Industries
and Innovation