THE PAN-EUROPEAN ISDN:

PROGRESS AND PROBLEMS

Contents:

INTRODUCTION

This congress and a large number of similar events all over the world impressively show the major attention which is given to the development of ISDN by users, manufacturers and service providers.

This is in particular true in countries, where the penetration of the telephone is already far advanced and where a stagnation of the demand for traditional telephone services is forecasted for the near future. But also in those countries, where the telephone network is still developing, ISDN has gained particular importance as it allows in parallel to the provision of the basic telephone services to the private sector the provision of a number of advanced services to the business users, which are essential for the further development of the economies in these countries.

Accordingly - and this was a first recognition from the analyses of the strategies for telecommunications network development in the Member States of the European Communities - in most countries implementation of ISDN is part of the official governmental programmes.

But already in 1984 it became evident from the comparison of these plans, that only the general concept of ISDN implementation was common, whereas in terms of dates for introduction of services, specifications of these services and of network components and in terms of penetration targets there were significant differences from one country to another.

In view of the major policy goals for the telecommunications policy of the European Community, which have been established in 1984 and have been reaffirmed on 30 June 1988 by the Council in Luxembourg, co-ordination was needed in order to:

> create or ensure Community-wide network integrity.

> promote the creation of Europe-wide services including standardisation

> create progressively an open common market for telecommunication services

> develop an open Community-wide market for terminal equipment.

THE GAP REPORT AND THE COUNCIL RECOMMENDATION OF 22.12.86

The "Analysis and Forecasting Group" (Groupe Analyses et Provision - GAP), being a subgroup of the Senior Officials Group on Telecommunication (SOG-T) and dealing with specific question of telecommunications services and network development in the Community, published in June 1985 after in depth discussion with all involved parties its "Proposal for the co-ordinated introduction of the Integrated Services Digital Network (ISDN) in the Community " - the famous GAP report on ISDN. Based on this report the Commission presented on 20 May 1986 a Proposal for a Council Recommendation (COM (86) 205) which was adopted by the Council on 22 December 1986 (86/659/EEC).

All Member States were in agreement that in the years to come ISDN will play the central role in the evolution of the telecommunications network. Based on the on-going digitisation of the telephone network it offers the possibility of extending digital services using current technology through the existing telecommunications infrastructure, including the less favoured regions of the Community, and it represents a major step towards the future Integrated Broadband Communications (IBC).

The Recommendation reflects the recognition that only with the co-ordinated introduction of ISDN, across Europe, will many of the benefits of ISDN be obtained. For this reason the Recommendation not only aims at initiating a number of concrete activities in the Member States but also and in particular at developing a political commitment to pursue actively the following major objectives:

provision of a range of harmonised and compatible services for all Community users and creation of new means of communication using sound, the written word and images;

establishment of a common European market in telecommunications and data processing terminals enabling the European telecommunications industries to maintain and increase their share of world markets;

closer cooperation, at Community level, between the Telecommunications Administrations;

- proper attention to data security and user privacy at the Community level.

Bearing in mind these objectives, the Recommendation has placed particular emphasis on the following means:

Stimulating the process for the creation of technical standards at precise interfaces. Of particular importance is the interface for the connection of user equipment (terminals) to the ISDN in order to achieve full compatibility of terminals at a European level and enable, by cooperation between manufacturers, consolidation of terminal production, leading to much stronger economies of scale across a market comparable with those of the United States and Japan.

A co-ordinated approach to the implementation of ISDN in particular with regard to the timing for the implementation of the various phases, thus using the opportunity to transform the current unco-ordinated development of national ISDNs into a Community-wide approach.

Precise targets for the penetration of ISDN and the related services in terms of number of ISDN accesses and geographic availability. Within the co-ordinated approach it is necessary to reach a critical mass of subscribers before a totally demand-driven policy can be followed.

The detailed recommendations as they were set out in the Annex to the Council Recommendation are concerning:

Services to be defined and specified in detail by the end of 1986 in order to be provided in all Member States starting from 1988 (phase 1)

Services to be s ecified b the end of 1987 and which mi ht be im lemented durin the period 1988 to 1993 (phase 2)

<u>Services to be specified by the end of 1990</u> (phase 3)

<u>Numbering, addressing and signalling</u>

<u>Tariff considerations</u>

Tariff for all services, including telephony, should be less dependant on distance than at present.

Tariffs for teleservices which use the same bearer capabilities should be independent of the teleservice. On the contrary, all value-added by the network should be charged independently of the utilisation of the bearer capabilities.

An agreement should be obtained on the ratio between the monthly rental for the primary rate access (2 048 kbit/s) and that for the basic access (144 kbit/s).

A ratio of the order of 10 might be discussed.

<u>Interworking between national ISDN trials</u>

Those administrations implementing national trials of ISDN before the full implementation of the present recommendations should endeavour, where provided, to interconnect these services in order to increase early experience of ISDN in Europe.

<u>Level of penetration</u>

The administrations should pan to provide by 1993 ISDN accesses for a number equivalent to 5 % of 1983 subscriber main lines.

The territorial coverage should be sufficient to permit 80 % of customers to have the option of the ISDN access.

<u>This Recommendation was and still is the basic guide-line for the Europe-wide implementation of ISDN.</u>

THE FIRST ANNUAL PROGRESS REPORT

The Commission was called upon by the Council Recommendation to present an Annual Progress report concerning its implementation. The first progress report was presented to the European Parliament and the Council on 31 October 1988 (COM(88) 589). According to this report the following observations have been made.

<u>During the period in question, the Integrated Services Digital Network has gained substantial credibility</u> in the Community with users, industry, and Telecommunications Administrations.

The Recommendation has provided a <u>focal point for ISDN implementation</u> planning by the Telecommunication Administrations in the Member States. Reported plans for ISDN

implementation demonstrate a recognition of the value of compliance with the Recommendation's programme for ISDN implementation.

To this extent, the Recommendation has served successfully one of its major purposes, i.e. to promote the introduction of ISDN products and services.

Despite this positive recognition, it has to be stated that the major objectives, as adopted by the Council in this Recommendation, have been achieved only in part.

The time schedule for the Community-wide availability of harmonised and compatible ISDN services has slipped significantly - even for the minimum set of services which have been recommended to be implemented before the end of 1988;

The application of national specifications or specific options of the international standards has resulted in differing designs for terminals across Member States so that terminals used in one country cannot necessarily be used in another.

Not all of the Telecommunications Administrations which have expressed their Intention to implement the Recommendation have been fully involved in the co-ordination at European level.

The questions concerning data security and user privacy have been dealt with in some cases at the national level, but different technical and regulatory solutions will create additional problems for Community-wide provision of services in the near future.

I think an appreciation of the situation up to the end of 1988 must take into account a number of factors:

delays in the world-wide definition of complete and stable ISDN stands, giving rise to a dangerous situation in Europe, where decisions have already had to be taken at national level;

the lead-time needed for translating the available standards into industrial products and for the adjustment of existing equipment;

problems in matching industrial plans with the strategic objectives of the Recommendation;

the still limited consciousness on the part of users of the opportunies opened up for them by the availability of ISDN services.

Despite these factors and not withstanding the problems described in the Report it is important to emphasize the positive aspects and the considerable efforts of Member States at national and international level concerning the implementation of the Council Recommendation:

the consideration efforts, in particular through the quadripartite collaboration between British Telecom, Deutsche Bundespost, France Ul&om and Socita Italiano per la Telecomunicazioni, that have contributed to the definition of services and to the standardisation and interconnectivity of networks in Europe;

the measures taken by various Telecommunications Administrations to achieve the objectives of the Recommendation on the national level, on the basis of still incomplete international standards as soon as they become available;

the activities of various Member States to accelerate Europe-wide availability of ISDN by bi-lateral and multi-lateral agreements on the provision of international ISDN services.

Through these efforts, Europe has succeeded, despite the general difficulties that have been encountered, in maintaining:

the conceptual lead of the Community in comparison with the United States and Japan concerning the commercial offering of ISDN services and the related opportunity for industry and users to prepare themselves for the future implementation and use of advanced ISDN services;

the opportunity for European industry to take the lead in a very advanced technological domain, with regard to definition of standards as well as provision of equipment and components.

THE COUNCIL RESOLUTION ON THE FURTHER STRENGTHENING OF CO-OPERATION

The general awareness of the need for a common approach and the contributions from the Member States to this Report suggested a concrete opportunity to reach the objectives of the Recommendation by an additional effort on the Community level.

On 5 November 1988 at the informal meeting of the Telecommunications Ministers in Athens, the annual report had been welcomed and the findings and proposed policy orientations have been endorsed.

The Commission was invited to prepare a formal position for the next Telecommunications Council according to the proposed policy orientations.

In addition, Member States have proposed to the Commission a certain number of actions in order to remedy current deficiencies in the Community-wide introduction of ISDN:

The Commission deemed it appropriate to produce a formal expression of the consensus achieved to date, and therefore submitted on 6 December 1988 a "Proposal for a Council Resolution on the Strengthening of the further co- ordination of the introduction of ISDN in the Community up to 1992 (COM (88) 695)". This proposal has been further elaborated by the Council Working Group and the Permanent Representatives and on 27 April 1989 the Council reached an agreement about the contents of a Resolution which will finally adopted after consideration by the linguistic service.

The Council recognized the existence of a unique opportunity to create the conditions for:

the availability of a sufficient set of truly Europe-wide compatible ISDN services by 1992, building on the initial phase of introduction of ISDN.

the end-to-end compatibility of those services and the availability of low cost terminals, which can be connected to and operated with the ISDN implementation in any Member State without any modification (terminal portability).

the optimation of the competitiveness of the European terminal equipment industry, including PABXs, and the full integration of the less-favoured regions of the

Community in the emerging ISDN, by appropriate measures, in accordance with the STAR programme.

The Council considers the following measures as necessary:

acceleration of the establishment of common specifications, based on European standards taking due account of world-wide standardisation, for equipment and interfaces at the European level, by concentration and good use of available resources within the framework of the European standardisation system and, in particular, of the European Telecommunications Standards Institute (ETSI).

seeking of a commitment from manufacturers to contribute, within the framework of European standardisation and as rapidly as possible, to the development of European standards and common specifications for terminals and PABXs. These standards and specifications should make it possible to guarantee end-to end compatibility and terminal portability.

the application of the related aspcets of ONP to ISDN, taking into account the procedures of the framework Directive as soon as this will be adopted.

further discussion on the European level regarding user privacy protection requirements and requirements concerning the security of communications in the context of features of new services, in accordance with the Resolution of the European Parliament of 12 December 1986 on the ISDN Recommendation.

The Council invites the Telecommunications Administrations

to implement a "Memorandum of Understanding" between the Telecommunications Administrations on the provision of at least a minimum set of pan-European ISDN services and features and on the introduction a common ISDN signalling system. This should take account of Community competition rules and progress on standards and the objective of the creation of an open Community-wide market for telecommunications services for all market participants, particularly for value-added services. Information on the implementation of this Memorandum should be communicated to the Commission in time.

The Council invites the Commission and the Telecommunications Administrations

-       to undertake all necessary efforts to strengthen the further co-ordination for the introduction of ISDN in the European Community.

to intensify the consultations between the Telecommunications Administrations of all Member States on the implementation of the coming period of ISDN specification work and implementation, with the objective of the opening of a set of pan-European commercial services available before 31 December 1992.

The Council invites the Member States

to promote the provision of the experts necessary for drawing up European standards as the basis for the common specifications considered above, in particular in the framework of the European Telecommunication Standards Institute (ETSI), and promote the creation of the necessary conditions, in particular with regard to training.

The Council invites the Commission

> **to invite the Directors General of the Telecommunications Administrations** to **meetings with the Commission when appropriate in order to discuss questions and problems which may arise concerning the co-ordination of the introduction of ISDN, in** particular aspects **of pan-European services.**

> to **issue mandates to ETSI in addition to the adopted work** programme as necessary **and appropriate for the acceleration of the production of European** standards as the basis for **common ISDN specifications, in accordance with** existing Community procedures.

> to **evaluate the application of the related aspects of ONP to ISDN,** taking into account **the procedures of the framework Directive as soon as this will be adopted.**

> **to evaluate the feasibility of joint research and development which may be required for the implementation of common terminals and equipment for a single or for several ISDN services in the appropriate frameworks.**

> **to examine the possibilities for stepping up future support for the implementation of ISDN in the less favoured regions of the Community, taking into account the results of the evaluation of the STAR programme.**

THE MEMORANDUM OF UNDERSTANDING - IMPLEMENTATION OF AN EUROPEAN ISDN BY 1992

Ladies and **Gentlemen, it is a great pleasure for me to be able** to teil you that one **of these proposals of particular importance have been taken up in the meantime by the Telecommunications Administrations. Prepared by the Quadripartite Group and elaborated in the framework of CEPT, a Memorandum of Understanding has been established, aiming at the implementation of a European ISDN service by 1992.**

The purpose of this agreement is to provide a framework for all the necessary measures to be taken by the parties in concertation to ensure the opening of commercial European public ISDN services in their respective countries by 1992. This shall provide amongst other things standard access interfaces whereby users are provided with common services, supplementary services and access arrangements.

The agreed target for the commencement of the European ISDN service in accordance with this MOU is 1992. **All parties, by this MOU, commit themselves to the necessary co-operation activities, in particular the development of the necessary standards by ETSI** by December **1989. In order to provide some limited flexibility to complete the necessary development, procurement, installation and interconnection of equipment, it is agreed that this work will be completed and services opened by all** parties at December 1993, at the latest.

The parties shall support an evolutionary process taking into account the phases indicated in the annex **to the Council Recommendation on ISDN** (86/659/EEC). Starting from the **basis of the CCITT Recommendations for ISDN the parties shall support the** definition of **the necessary standards in the open forum provided by ETSI.**

The parties at least shall offer a <u>minimum set of services, in particular the circuit mode 64 kbit/s unrestricted bearer service, the audio bearer service and a number of supplementary services.</u> A large number of additional services and supplementary services nearly identical with those identified by the GAP report are recognised as commercially valid for ISDN and shall therefore be based on uniform standards. The parties agree that <u>all services identified , when offered, will comply with the agreed relevant ETSI standards.</u>

Furthermore, the parties agree to cooperate in the study of proposals for future services with a view to their inclusion in later phases of ISDN in Europe.

Offering of the additional services is dependent on the development of the market and will be based on commercial considerations.

The parties have as a common goal the objective of <u>enabling the interchangeability of terminals.</u> Interchangeability in this context implies that any terminal implemented to the required standards (e.g. Nets) can be connected to and operate with the ISDN provided by each party.

<u>This MOU has been signed in the meantime by 23 Telecommunications Organisations from 18 European countries.</u>

It is the opinion of the Commission that this approach will constitute an important step for the consolidation of the Community-wide or even Europe-wide introduction of ISDN. It will be a remarkable signal to all parties involved, in particular to the users and - hopefully - also to terminal manufacturers.

As far as the content of the MOU is concerned, the Commission is of the opinion, that it should be possible to increase the number of services to be implemented by 1992 at least for the Member States as the actual list of mandatory services does by far not cover the spectrum of services which had been recommended in 1986.

The Commission has invited the Member States for any proposals, what could be done to reach this objective in order to keep the pacemaking role of the Member States in this important area.

FURTHER ACTIVITIES

The Council of the European Communities has indicated with its new Resolution a <u>clear guidance for the required future activities</u> for a successful implementation of ISDN in Europe by 1992, both to the Commission as to the Member States and their Administrations.

First <u>discussions</u> and <u>consultations</u> with SOG-T and the Directors General of PTT have already taken place.

Concerning the <u>acceleration</u> of <u>standardisation</u> the ETSI Strategic Review Committee has prepared a workplan for the completion of standards by the end of this year. The Commission fully supports its conclusions and stresses the need for its proposals - in particular the set up of a task force - to become operational without delay immediately.

The Commission is prepared to support this activity also in financial terms and by any additional measures which might be required.

Concerning the development of ISDN terminals, the Commission has analysed the situation. Two activities seem to be important and possible on the Community level:

the setting up of common R & D projects in the existing frameworks leading to some major basic prototype terminals by the end of 1990;

the development of common technical specifications for purchasing by telecommunications operators.

A field of particular importance - even if sensitive in view of the actual discussions on the Commission's activities for the liberalisation of services - is the application of the Open Network Provision (ONP) concept to ISDN.

The establishment of harmonized conditions for open access to, and the open use of, the public telecommunications network infrastructure and public telecommunications services (Open Network Provision - ONP) in the Community has been identified as essential for the achievement of a common market for telecommunications services up to 1992, in which the free provision of services provided via telecommunications networks is ensured.

ONP aims at the definition of

harmonised technical interfaces and service features

harmonised usage conditions

harmonised tariff principles

for use of the network and some basic services.

There is now a unique chance to establish in parallel to or even in advance of the physical implementation of the Europe-wide ISDN a complementary set of harmonised conditions for the use of ISDN.

The Commission has started the preparatory work on this subject which will be the next item for GAP, hopefully starting its work by the end of this year.

LET ME CONCLUDE

The recent past has seen substantial progress with the implementation of a pan-European ISDN.

As it was recognised by the Council of the European Communities there is now a unique opportunity to ensure

> the availability of a set of truly pan-European commercial ISDN services up to 1992 building on the initial phase of introduction of ISDN as set out in the Annex of Recommendation 86/65F9/EEC.

> the end-to-end compatibility of those services and the availability of low cost terminals, which can be connected to and operated with the ISDN in any Member State.

Further common efforts will be needed, but the commitment of all involved parties now demonstrate a clear recognition of the value of compliance with the common approach.