Background information for the press: Euro-ISDN and FURIE '93

1. EURIE '93

EURIE '93 = EUROPEAN ISDN Event 1993

The Euro-ISDN Event will be held from December 14th to 16th, 1993. It will include over 30 showrooms and open houses in all major European cities, hosted and organized by the national public network operators (PNOs). Highlighted will be applications providing European solutions for end users. Besides local presentations the event will focus on applications demonstrating international networking.

An opening ceremony taking place on December 14th in Brussels will kick off EURIE '93. During the ceremony, officers from the European Community will address the other European sites via videoconferencing.

Some of the PNOs will integrate a conference into their national showcase.

A handbook giving an overview of Euro-ISDN (tariffs, national availability, international connections, applications, service contact points, test labs), as well as a description of the showcased products and applications at EURIE '93, will be distributed to showroom visitors and sold after the event.

More details about the event will be released following the next organizational meeting in mid-September.

2. Background Information: ISDN

a. ISDN access

According to the international standards for ISDN developed by CCITT, users can access an **ISDN** in one of two ways:

ISBN basic access, where the user is presented with two 64 kbit/s channels (for voice and/or data, known as "B-channels") and one 16 kbit/s channel (the "D channel") for signaling and, if needed, for packet-switched data communications by the user. ISDN basic access is often referred to as "2B+D").

'SIN primary access for large sites, where the user is presented with 30 B channels of 64 kbit/s (23 channels in North America) and one 64 kbit/s D channel for signaling and data ("308+D").

b. Customer premises equipment behind the 'SIN basic access

A customer with ISDN basic access may attach it to a single terminal such as a telephone, or a small switch such as a key system with several terminals attached. Alternatively, the user may attach a passive bus to the basic access. This can support up to eight terminals which contend for capacity on the two B channels and the D channel of the basic access. These terminals might include voice handsets, fax terminals, PCs and others. As well as specially designed ISDN terminals the customer might use existing equipment attached to the bus via terminal adaptors.

c. The Benefits of ISDN

i. The ideal network for all information flows

In simple terms, ISDN - Integrated Services Digital Network - combines in one network the services which, until recently, required separate networks. At present the telephone network handles most voice calls, telefax messages and occasional data communication to most destinations in the world. ,SIN brings together many of these services in one public network. It combines the multipoint accessibility of the telephone and data networks with the high speed and availability of leased circuits. At the press of a button, ISDN gives you a host of top quality voice and data services - simultaneously - over the same line.

In the course of a telephone conversation it is, for example, possible to do the following at the same time:

- Exchange data, graphics
- Send and receive messages
- Receive or initiate an additional telephone conversation
- Send or receive a telefax.

íi. Lower p ices and greater efficiency

The cost of an ISDN subscription is slightly higher than for a telephone. Several alternative rates are offered for communications. Price levels for speech are the same as in the telephone network, while for data communications it is possible to use time or volume rates or a combination of these.

- Time rates are based on the time used (total elapsed seconds)

- Volume rates are based on the volume transferred (packet switching)

ISDN will often lead to significant overall cost savings and greater efficiency due to the new areas of application, greater capacity and flexibility of use.

iii. Inexpensive and advanced equipment for users

User equipment is produced on a worldwide basis for both the corporate and private market. This means substantial volumes of user equipment resulting in lower prices.

iv. Simple to install, easy to transfer

Existing telephone subscriptions can in most instances be changed simply to an ISDN subscription, and as a rule a company switchboard can be upgraded to an ISDN switchboard.

An ISDN subscription can be transferred and reconfigured simply and quickly in the event of a reorganization, move, etc.

N. Greater security and faster transmission

1501 contains security functions which mean that telephone and data communications are transmitted equally securely, and with several routing possibilities, compared with transmission via leased lines/a separate corporate network.

With ISDN a new generation of telefax is being introduced, which is capable of transferring an A4 page in 2-4 seconds. The text quality will be at least as good as that with a laser printer. *vi. New services and possibilities*

ISDN makes possible many new telecommunications applications which will enable businesses to operate more efficiently and provide opportunities to establish new business areas.

New services developed for ISDN will be readily available for all existing ISDN subscribers.

3. Background Information: Euro-ISDN

The goal of Euro-ISDN is to establish the most modern telecommunications network within Europe...

- tп meet communication needs of residential and small and medium business customers, as well as large multi-nationals
- it is based on up-to-date, available and stable technology
  - integrated digital network
  - common channel signaling n" 7
- tп ensure end-to-end inter-operability of an extended set of bearer services, supplementary services and tele-services for the support of various customer applications
- to establish full geographical coverage
- with high quality performance.

A second goal is to create a common European market for:

- customer premises equipment
- Standardized customer applications.

Euro-ISDN has two key elements:

- the ISDN standards being drawn up by the European Telecommunications Standards Institute (ETSI), established in 1988
- the Memorandum of Understanding (ISDN-MOU) on the implementation of a European **ISDN** Service, concluded in 1989.

a. Introduction of Euro-ISDN in Europe

26 public network operators from 2.0 European countries have signed a Memorandum of Understanding (as mentioned above, ISDI-MOU) agreeing to the introduction of a common European ISDN - Euro-ISDN by the end of 1993.

The signatories were network operators from the following countries: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Great Britain, Greece, Ireland, Italy, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey and Yugoslavia. Each of **the** signatories agreed in **the** Mou tп offer both basic and primary rate accesses. Moreover, they committed themselves to providing a range of basic services and supplementary serves. Besides these services, **however,** each national network operator may offer additional services within **Euro-ISDN,** under **the condition that they** conform to the European standard.

7hß MWIJ also laid down that every signatory must provide an international internetwork interface to enable international ISDN connections to be made. The signaling system No. 7 with the ISDN User Part (,SUP) will he used.

It should be noted that the extent of network development is up to the network operator concerned.

b. What does Euro-ISDN do for Europe?

The range of services and supplementary services available with international ISDN connections has so far been restricted due to differences in national standards. The EC Council has therefore recommended a co-ordinated introduction of ISDN in Europe in order to enable unrestricted cross-border use of services and supplementary services.

All MoU signatories must offer certain supplementary services when they introduce Euro-ISDN, namely:
- multiple subscriber number
- direct dialing-in
- calling line identification presentation
- calling line identification restriction
- terminal portability.

Furthermore, the MoU signatories have undertaken to expand the range of services and supplementary servies offered in Euro-ISDN - on the basis of the European standard.

i. The multiple subscriber number:

With national ISDN, precisely ten terminal selection numbers in ascending sequence are available, and are formed by adding an additional digit to the ISDN subscriber number; whereas, with Euro-ISDN, up to ten free subscriber numbers may be allocated - any numbers available in a given exchange area. This means that when the customer switches to Euro-1501 he can, for example, keep his previous subscriber number if he is already connected to a digital exchange.
The multiple subscriber number consists of the whole subscriber number with up to eight digits.
The multiple subscriber number feature is only provided on multiple service accesses.

The terminals with which one wishes to use multiple subscriber numbers must be capable of being set to any sequence of digits. The multiple subscriber number is programmed to the terminal. One can also allocate more than one multiple subscriber number to a terminal.

Services and supplementary services can be installed for an access or for a multiple subscriber number. Each multiple subscriber number can be allocated its own service and supplementary service profile. ln other words, the service features in Euro-ISDN are subscriber-number oriented. In the case of national ISDN these features could only be allotted to a given access. Euro-ISDN thus brings advantages, e.g. for call forwarding. Not all calls to an access are forwarded, but only those for a particular multiple subscriber number.

ii. Direct Dialing- in

Direct dialing-in offers the possibility of dialing direct to a PABX extension. This service is offered by all PABXs supporting at least one basic rate access.

With this service, communication in a company can be optimized without alterations to its structural or functional organization. With a PABX that allows direct dialing in, a specific company employee or terminal can be reached directly by dialing the appropriate extension number. By contrast, where a company PABX does not have this feature, all incoming calls are routed to a central switchboard and must then be put through to the employee concerned.

Direct dialing in also has advantages when, as well as voice communications, text, video or data communications are integrated into the PABX.

ííi. Calling line identification presentation

This service advises the person being celled (subscriber B) of the number of the caller (subscriber A). The number can be displayed on the terminal being called, provided the ISDN terminal supports this service and is set up to use it, s, for exɑmple, with a telephone display panel. Subscriber B is advised of the local area code and subscriber number, or direct dialing in number plus extension.

Advice of subscriber A's number enables subscriber B to find out who the caller is even before he takes the cell. If the telephone has a call list then the callers can be stored in this list if the person being called is, for example, absent from the office. He or she can then look at this list later and return calls as necessary.

This service is, however, of interest not only with regal to telephone calls, but also and in particular with regard to data communication, since the validation of caller numbers can be used to control access to a databank, for example.

iv. *Calling line identification restriction*

Euro-ISDN subscribers are also offered the possibility of restricting presentation of their subscriber number to the called party. With this service, subscriber A can choose between case-by-case or unconditional restriction of calling line identification. If the customer chooses case-by-case restriction, the pre-set operational mode "restrict" or "do not restrict" will be set at the exchange in accordance with the customer's instructions.

For case-by-case restriction it is necessary that the ISDN terminal can support this service feature. Maintenance of this service across and beyond the network boundaries is guaranteed in all cases - i.e. also, for example, to Euro-ISDN accesses in other countries.

N. *Terminal portability*

Terminal portability means that several rooms can be equipped with a single socket each, all of them connected to the same access (multiple-service access). It is thus possible to move from one room to another in the middle of a call, e.g. to continue the call undisturbed.

The connection is maintained while the terminal is unplugged for at least three minutes. This transfer is reported to the Euro-ISDN caller at the other end, e.g. by his telephone display panel. Terminal portability is possible with any call, even if the person on the other end is using, for instance, an ordinary telephone.

4. Sources

This backgrounder has been prepared using the following sources:

Deutsche Bundespost Telekom: "Euro-ISDN: Seamless communications for a Europe without frontiers". Norwegian Telecom International: "ISDN opens a new world of possibilities".

Ovum, Fischer & Lorenz: "European ISDN Atlas 1991".

Pietromarchi, Alessandro, SIP - Italy: "Euro-ISDN", Presentation at European ISDN User Forum (EIUF), March 23, 1993.

PTT Telecom Netherlands: "ISDN: the world of communications at your fingertips".