INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

I.410

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

**INTEGRATED SERVICES DIGITAL
NETWORK (ISDN)**

ISDN USER-NETWORK INTERFACES

**GENERAL ASPECTS AND PRINCIPLES
RELATING TO RECOMMENDATIONS
ON ISDN USER-NETWORK INTERFACES**

ITU-T Recommendation I.410

(Extract from the *Blue Book*)

NOTES

1   ITU-T Recommendation I.410 was published in Fascicle III.8 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2   In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Recommendation I.410

GENERAL ASPECTS AND PRINCIPLES RELATING TO
RECOMMENDATIONS ON ISDN USER-NETWORK INTERFACES

(Malaga-Torremolinos, 1984)

1   General

1.1   Recommendation I.120 gives the conceptual principles on which an ISDN should be based. The main feature of an ISDN is the support of a wide range of service capabilities, including voice and nonvoice applications, in the same network by offering end-to-end digital connectivity.

1.2   A key element of service integration for an ISDN is the provision of a limited set of standard multipurpose user-network interfaces. These interfaces represent a focal point both for the development of ISDN network components and configurations and for the development of ISDN terminal equipment and applications.

1.3   An ISDN is recognized by the service characteristics available through user-network interfaces, rather than by its internal architecture, configuration or technology. This concert plays a key role in permitting user and network technologies and configurations to evolve separately.

2   Interface applications

Figure 1/I.410 shows some examples of ISDN user-network interfaces. The following cases are identified, corresponding to:

1)   access of a single ISDN terminal;

2)   access of a multiple ISDN terminal installation;

3)   access of multiservice PBXs, or local area networks, or, more generally, of private networks;

4)   access of specialized storage and information processing centres.

In addition, depending on the particular national regulatory arrangements, either ISDN user-network interfaces or internetwork interfaces may be used for access of:

5)   dedicated service networks;

6)   other multiple services networks, including ISDNs.

3   Interface Recommendation objectives

User-network interface Recommendations should allow:

1)   different types of terminals and applications to use the same interface;

2)   portability of terminals from one location to another (office, home, public access points) within one country and from one country to another country;

3)   separate evolution of both terminal and network equipment, technologies and configurations;

4)   efficient connection with specialized storage and information processing centres and other networks.
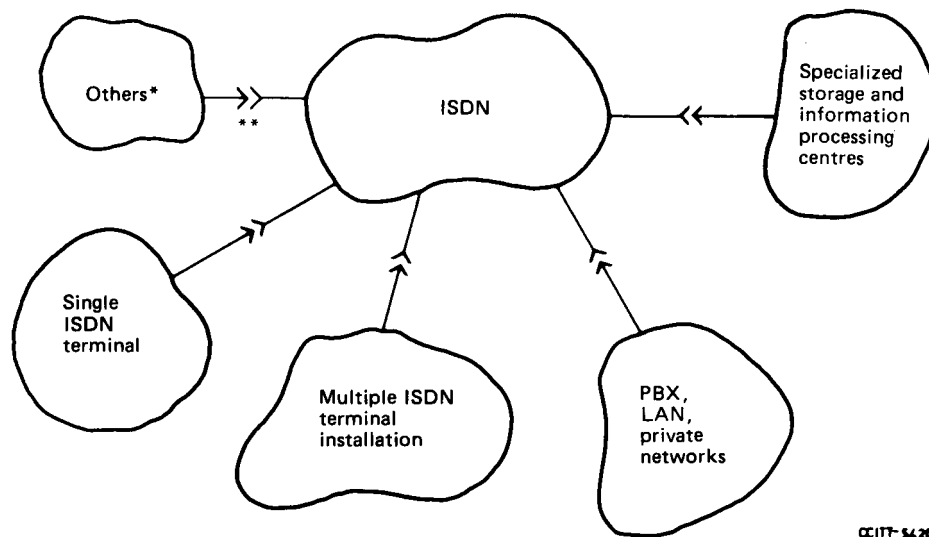
FIGURE 1/I.410

ISDN user-network interface examples

User-network interfaces should be designed to provide an appropriate balance between service capabilities and cost/tariffs, in order to meet service demand easily.

4   Interface characteristics

User-network interfaces are specified by a comprehensive set of characteristics, including:

1)   physical and electromagnetic (including optical) characteristics;

2)   channel structures and access capabilities;

3)   user-network protocols;

4)   maintenance and operation characteristics;

5)   performance characteristics;

6)   service characteristics.

A layered approach has been adopted for the definition of ISDN user-network interfaces according to the ISDN protocol reference model, Recommendation I.320.

5   Interface capabilities

In addition to the multiservice capability, an ISDN user-network interface may allow for capabilities such as the following:

1)   multidrop and other multiple terminal arrangements;

2)   choice of information bit rate, switching mode, coding method, etc., on a call-by-call or other (e.g. semi-permanent or subscription time option) basis, over the same interface according to the user's need,

3)   capability for compatibility checking in order to check whether calling and called terminals can communicate with each other.

6   Other I-Series Recommendations

6.1   The reference configurations for ISDN user-network interfaces define the terminology for various reference points and the types of functions that can be provided between reference points. Recommendation I.411 contains the reference configurations and shows significant applications.

6.2   The number of different interfaces is kept to a minimum. Recommendation I.412 defines a limited set of interface structures, and possible access capabilities for the ISDN user-network interfaces. A distinction is necessary between the interface structure and the access capability supported by the particular network access arrangement.

6.3   The user-network interfaces, as defined in Recommendations I.420 and I.421, are applicable to a wide range of situations without modification (e.g. to both reference points S and T, as defined in Recommendation I.411).