



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

I.520

(03/93)

**INTEGRATED SERVICES DIGITAL
NETWORK (ISDN)**

INTERNETWORK INTERFACES

**GENERAL ARRANGEMENTS FOR NETWORK
INTERWORKING BETWEEN ISDNs**

ITU-T Recommendation I.520

(Previously "CCITT Recommendation")

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation I.520 was revised by the ITU-T Study Group XVIII (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

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

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Recommendation I.520

GENERAL ARRANGEMENTS FOR NETWORK
INTERWORKING BETWEEN ISDNs*(Melbourne, 1988; amended at Helsinki, 1993)*

1 Introduction

The number of ISDNs existing in the world is increasing and more than one ISDN may exist even within a single country. Therefore, ISDN-ISDN network interfaces should be standardized to facilitate the interworking between ISDNs and to extend connectivity world-wide.

2 Scope

The purposes of this Recommendation are

- 1) to identify the general arrangements for ISDN-ISDN interworking, and
- 2) to define the functions and other requirements for the ISDN-ISDN interface.

Recommendation I.324 defines the reference point between two interconnected ISDNs to be the N_x reference point. This Recommendation identifies other Recommendations which should be applied to the N_x reference point and clarifies the functions and requirements for interworking at the N_x reference point.

3 Required information and information handling

Figure 1 illustrates the general configuration for interworking between two ISDNs. The information given in Tables 1, 2 and 3, when required, has to be carried by Signalling System No. 7 (SS No. 7) ISUP and X.75, and is handled at the IWF in one of the following ways:

- i) information is terminated at the IWF and is not transferred to other ISDNs;
- ii) information is interpreted at the IWF and is transferred to other ISDNs;
- iii) information is transferred through the IWF transparently;
- iv) information is newly generated at the IWF.

Tables 1, 2 and 3 also show the classification of information into the above four categories for circuit mode bearer services, circuit mode supplementary services and packet mode bearer services, respectively.

Additional information required specifically for OAM (Operational, Administrative and Maintenance) functions is for further study.

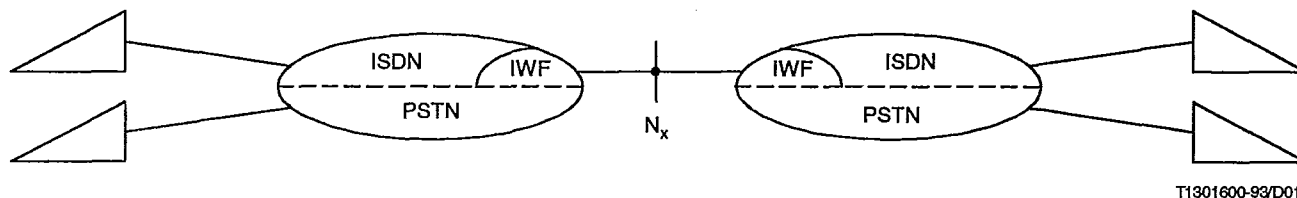


FIGURE 1/I.520

General configuration for interworking between two ISDNs

TABLE 1/I.520

Information required for IWF between ISDNs for circuit mode bearer services

Category	Required information	Rec. Q.931 information element	Rec. Q.763 parameter name
i	First transit network subsequent to IWF	Transit network selection	Transit network selection
ii	Called party number (Note 1) Calling party's category (Note 2) Bearer capability Call indicators (Note 3) Use of satellite (Note 4)	Called party number/Key pad (Unnecessary) Bearer capability (Unnecessary) (Unnecessary)	Called party number/Subsequent number Calling party's category Transmission medium requirements User service information Forward call indicators Backward call indicators Nature of connection indicators
iii (Note 8)	Calling party number Subaddress Calling party's category Terminal compatibility (Note 5) User-to-user signalling Cause Charge	Calling party number Subaddress (Unnecessary) Low layer compatibility High layer compatibility User-to-user information element Cause (Unnecessary)	Calling party number Access transport Calling party's category Access transport User-to-user information Cause indicator Charge information
iv	Cause for interworking Charging information (Note 6) Change of services (Note 7)	Cause (Unnecessary) (Should be defined)	Cause indicator Charge information (Should be defined)

NOTES

- 1 For charging use.
- 2 For discrimination of priority call/ordinary call.
- 3 These indicators are used to identify:
 - a) international incoming call,
 - b) available end-to-end signalling system,
 - c) charged call/noncharged call.
- 4 When a satellite circuit is employed for an interworking call at the interworking point, this information is processed at the IWF. If a satellite circuit is not employed for a call, this information is transferred through the IWF transparently.
- 5 There may be cases where the terminal compatibility information is processed (see 5.4).
- 6 This information is used only when access charging is necessary.
- 7 All ISDNs do not necessarily provide identical services (or connection types). When a change of services occurs at the IWF, the network should send the indication for change of services and may solicit acceptance of change of services to a calling user in certain cases (see 5.3.1).
- 8 The information in this category is transferred through the IWF transparently.