INTERNATIONAL TELECOMMUNICATION UNION

ITU-T I.120

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

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INTEGRATED SERVICES DIGITAL NETWORK (ISDN)

GENERAL STRUCTURE

INTEGRATED SERVICES DIGITAL NETWORKS (ISDNs)

ITU-T Recommendation I.120

(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.120 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 Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.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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INTEGRATED SERVICES DIGITAL NETWORKS (ISDNs)

(Malaga-Torremolinos, 1984; amended at Helsinki 1993)

1 Principles of ISDN

1.1 The main feature of the ISDN concept is the support of a wide range of voice and non-voice applications in the same network. A key element of service integration for an ISDN is the provision of a range of services using a limited set of connection types and multipurpose user-network interface arrangements.

1.2 ISDNs support a variety of applications including both switched and non-switched connections. Switched connections in an ISDN include both circuit-switched and packet-switched connections and their concatenations.

1.3 As far as practicable, new services introduced into an ISDN should be arranged to be compatible with 64 kbit/s switched digital connections.

1.4 An ISDN will contain intelligence for the purpose of providing service features, maintenance and network management functions. This intelligence may not be sufficient for some new services and may have to be supplemented by either additional intelligence within the network, or possibly compatible intelligence in the user terminals.

1.5 A layered protocol structure should be used for the specification of the access to an ISDN. Access from a user to ISDN resources may vary depending upon the service required and upon the status of implementation of national ISDNs.

1.6 It is recognized that ISDNs may be implemented in a variety of configurations according to specific national situations.

1.7 Based on these principles the I-Series Recommendations have been developed. Figure 1 provides a broad outline of the structure of the I-Series of Recommendations and their relationship to other Recommendations. As shown in Figures, the current structure of the I-Series documentation is subdivided into seven major parts. Other I-Series documents may be added as the need arises. In addition, to support the implementation of the ISDN concepts, Recommendations have been produced and others will be produced in other series by the appropriate specialist group.

2 Network evolution towards ISDN

2.1 ISDNs are based on the concepts developed for telephone IDNs and may evolve by progressively incorporating additional functions and network features including those of any other dedicated networks such as circuit-switching and packet-switching for data so as to provide for existing and new services.

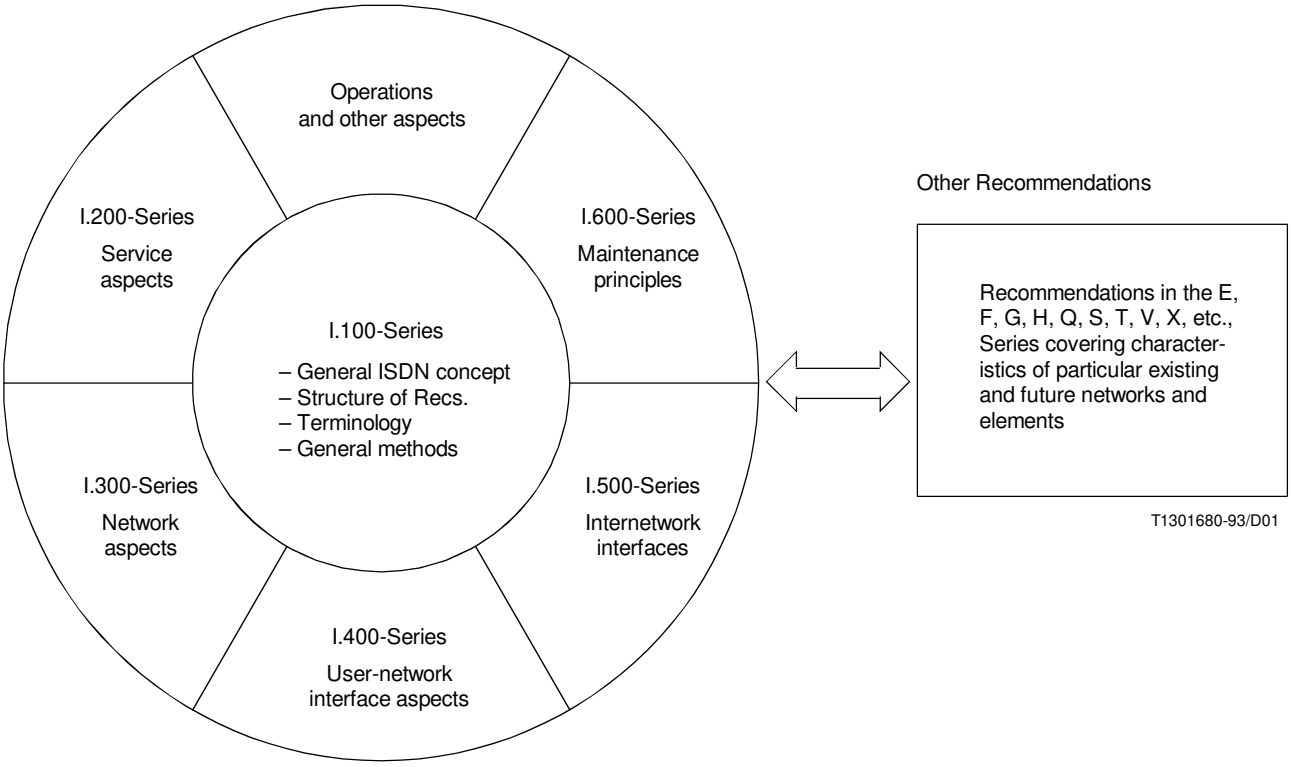
2.2 The transition from an existing network to a comprehensive ISDN may require a period of time extending over one or more decades. During this period arrangements must be developed for the interworking of services on ISDNs and services on other networks.

2.3 In the evolution towards an ISDN, digital end-to-end connectivity will be obtained via plant and equipment used in existing networks, such as digital transmission, time-division multiplex switching and/or space-division multiplex switching. Existing relevant Recommendations for these constituent elements of an ISDN are contained in the appropriate series of Recommendations of CCITT and of CCIR.

2.4 In the early stages of the evolution of ISDNs, some interim user-network arrangements may need to be adopted in certain countries to facilitate early penetration of digital service capabilities. Arrangements corresponding to national variants may comply partly or wholly with I-Series Recommendations. However, the intention is that they will not be specifically included in the I-Series.

3 Evolution of ISDNs

An evolving ISDN may also include switched connections at bit rates higher and lower than 64 kbit/s. Recommendation I.121 gives the broadband aspects of ISDN.



NOTE – Models, reference configurations, tools, methods, are contained in the appropriate I-Series Recommendations.

FIGURE 1/I.120

Structure of I-Series Recommendations and their relationship with other Recommendations