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INTEGRATED SERVICES DIGITAL NETWORK (ISDN) SERVICE CAPABILITIES

B-ISDN SERVICE ASPECTS

ITU-T Recommendation I.211

(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.211 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 Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.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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INTRODUCTION

This Recommendation should be interpreted as a guideline to the objective of providing detailed Recommendations on specific standardized services to be supported by a B-ISDN. The purpose is

- i) to provide a classification of such services;
- ii) to provide some considerations on the means to describe services based on the description method as defined in Recommendation I.130;
- iii) to give a basis for the definition of the network capabilities required by B-ISDN.

The service concepts considered in this Recommendation are in accordance with 2/I.210.

The Recommendation takes into account some of the known and relevant aspects of the B-ISDN including:

- capabilities to increase flexibility to both user and network operator including independent call and connection control;
- the quality of service implications of information being structured and transported in cells;
- capabilities for flexible bandwidth allocation;
- capabilities for the provision of service timing information;
- the overall interface capabilities.

The Recommendation also gives guidance on video coding aspects taking into account the characteristics of the ATM based network and recommends a common approach to video coding for all visual services including both interactive and distribution type services.

Recommendation I.211**B-ISDN SERVICE ASPECTS***(Geneva, 1991; revised in Helsinki, 1993)***1 Classification of broadband ISDN services****1.1 General**

This subclause describes the classification of broadband services, the definition of those service classes, and gives examples of services in each service class proposed to be supported by the B-ISDN.

This classification does not take into account the location or the implementation of the functions either in the network or in the terminals. This classification is primarily from the point of view of the network and not from the user point of view.

Depending on their communication functions and applications, the services to be supported by the B-ISDN may be internationally standardized and offered by the Administration as bearer services or teleservices.

1.2 Service classes

Depending on the different forms of the future broadband communication and their applications, two main service categories have been identified: interactive services and distribution services. The interactive services are subdivided into three classes of services, viz., the conversational services, the messaging services, and the retrieval services. The distribution services are represented by the class of distribution services without user individual presentation control and the class of distribution services with user individual presentation control (see Figure 1).

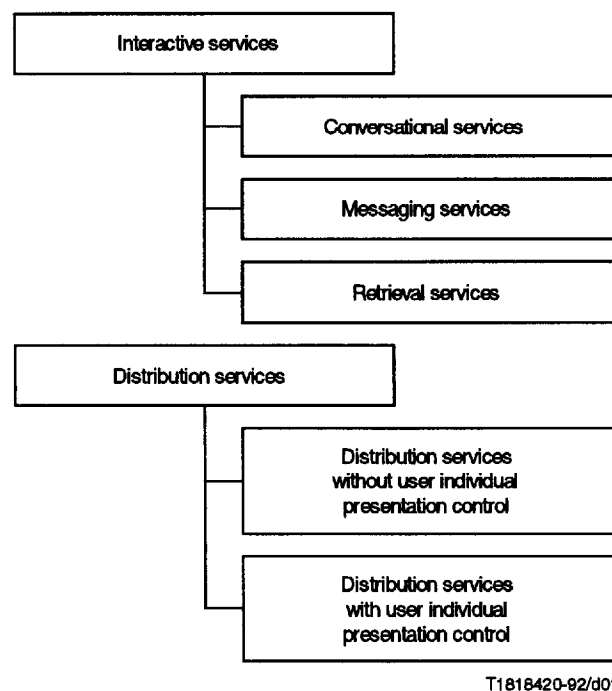


FIGURE 1/I.211
Classification of broadband services

1.3 Definition of service classes

conversational services: Conversational services in general provide the means for bidirectional communication with real-time (no store-and-forward) end-to-end information transfer from user to user or between user and host (e.g. for data processing). The flow of the user information may be bidirectional symmetric, bidirectional asymmetric and in some specific cases (e.g. such as video surveillance), the flow of information may be unidirectional. The information is generated by the sending user or users, and is dedicated to one or more of the communication partners at the receiving site.

Examples of broadband conversational services are videotelephony, video conference and high speed data transmission.

messaging services: Messaging services offer user-to-user communication between individual users via storage units with store-and-forward, mailbox and/or message handling (e.g. information editing, processing and conversion) functions.

Examples of broadband messaging services are message handling services and mail services for moving pictures (films), high resolution images and audio information.

retrieval services: The user of retrieval services can retrieve information stored in information centres provided for public use. This information will be sent to the user on his demand only. The information can be retrieved on an individual basis. Moreover, the time at which an information sequence is to start is under the control of the user.

Examples are broadband retrieval services for film, high resolution image, audio information, and archival information.

distribution services without user individual presentation control: These services include broadcast services. They provide a continuous flow of information which is distributed from a central source to an unlimited number of authorized receivers connected to the network. The user can access this flow of information without the ability to determine at which instant the distribution of a string of information will be started. The user cannot control the start and order of the presentation of the broadcasted information. Depending on the point of time of the user's access, the information will not be presented from the beginning.

Examples are broadcast services for television and audio programmes.

distribution services with user individual presentation control: Services of this class also distribute information from a central source to a large number of users. However, the information is provided as a sequence of information entities (e.g. frames) with cyclical repetition. So, the user has the ability of individual access to the cyclical distributed information and can control start and order of presentation. Due to the cyclical repetition, the information entities selected by the user will always be presented from the beginning.

One example of such a service is full channel broadcast videography.

1.4 Identification of possible broadband services

Table 1 contains examples of possible services, their applications and some possible attribute values describing the main characteristics of the services.

The identification and full specification of specific services for standardization can only be completed after a thorough examination of the needs of users by e.g. market research. The full specification of such services should be based on the application of appropriate description methodology.

2 General network aspects of broadband services

2.1 General

The purpose of this subclause is to give guidance concerning some of the important aspects which need to be taken into account when supporting and developing services for the B-ISDN.