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PART I

I.100-Series Recommendations

GENERAL STRUCTURE

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SECTION 1

FRAME OF I-SERIES RECOMMENDATIONS

TERMINOLOGY

Recommendation I.110

PREAMBLE AND GENERAL STRUCTURE OF THE I-SERIES RECOMMENDATIONS FOR THE INTEGRATED SERVICES DIGITAL NETWORK (ISDN)

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988)

1 Preamble

1.1 *Introduction*

An ISDN is a network, in general evolving from a telephony Integrated Digital Network (IDN), that provides end-to-end digital connectivity to support a wide range of services, including voice and non-voice services, to which users have access by a limited set of standard multi-purpose user-network interfaces.

This concept requires a family of CCITT Recommendations.

The I-Series Recommendations will provide principles and guidelines on the ISDN concept, as well as a detailed specification of the user-network and internetwork interfaces. They will further contain suitable references so that the detailed Recommendations on specific elements within the network can continue to be developed in the appropriate Recommendation series.

Figure 1/I.110 produces a broad outline of the structure of the I-Series of Recommendations and their relationship to other Recommendations. As shown in the Figure, 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 (see Recommendation I.111).

1.2 *Basis of the I-Series approach*

In order to standardize all necessary aspects of ISDN the CCITT has divided the subject matter into a number of distinct (but obviously related) areas (see Figure 2/I.110). Three of these areas are the following:

1) Services (I.200-Series of Recommendations);

2) Network aspects (I.300-Series of Recommendations);

3) User-network access and interfaces (I.400-Series of Recommendations).

Network aspects are further supported by other Recommendations both inside and outside the I-Series.

The I-Series Recommendations are directed at the following principles:

a) the standardization of services offered to subscribers, so as to enable services to be internationally compatible;

b) the standardization of user-network interfaces, so as to enable terminal equipment to be portable [and to assist in a)];

c) the standardization of network capabilities to the degree necessary to allow user-to-network and network-to-network interworking, so as to achieve a) and b) above.

Figure 1/I.110, p.

The distinction that has been made in this approach between services and network capabilities is perhaps the most important. In the past, each service which was a candidate for standardization was treated in isolation and the necessary standards developed. For the ISDN, a wide range of services has to be considered in a coordinated manner. In addition, in the past there has not been a conscious decision to separate the definition of standards required for services from the definition of the standards for the network capabilities to support these services.

The approach, in the development of the I-Series, has been, first, to establish the broad concepts of the two areas of standards, secondly, to uniquely define these two concepts, and thirdly, to show the relationship between them.

The fourth area shown in Figure 2/I.110, is user equipment. The I-Series includes reference configurations which identify key functional groupings and their physical relationship. The interfaces with the network are explicitly defined; however, the I-Series does not provide a detailed description of any specific terminal element.

Figure 3/I.110 illustrates the relationship between services and network capability areas from a first-order viewpoint; nevertheless the relationship can be seen to be recursive. The figure shows that the driving forces are:

a) what the user wants or is prepared to purchase;

b) the availability of the necessary technology;

c) the economics of developing and enhancing services and the network capabilities.

Figure 2/I.110, p.

Figure 3/I.110, p.

2 List of Recommendations

Part I — General structure — I.100-Series

SECTION 1 — *Frame of I-Series Recommendations — Terminology*

I.110 Preamble and general structure of the I-Series Recommendations

I.111 Relationship with other Recommendations relevant to ISDNs

I.112 Vocabulary of terms for ISDNs

I.113 Vocabulary of terms for broadband aspects of ISDNs

SECTION 2 — *Description of ISDNs*

I.120 Integrated Service Digital Networks (ISDNs)

I.121 Broadband aspects of ISDNs

I.122 Framework for providing additional packet mode services

SECTION 3 — *General modelling methods*

I.130 The method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN

SECTION 4 — *Telecommunication network and science attributes*

I.140 Attribute technique for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN

I.141 ISDN charging capability attributes

Part II — Service capabilities — I.200-Series

I.200 Guidance to the I.200-Series of Recommendations

SECTION 1 — *General aspects of services in ISDN*

I.210 Principles of telecommunication services supported by an ISDN and the means to describe them

SECTION 2 — *Common aspects of services in ISDN*

I.220 Common dynamic description of basic telecommunication services

I.221 Common specific characteristics of services

SECTION 3 — *Bearer services supported by an ISDN*

I.230 Definition of bearer service categories

I.231 Circuit mode bearer service categories

I.232 Packet mode bearer service categories

SECTION 4 — *Teleservices supported by an ISDN*

I.240 Definition of teleservices

I.241 Teleservices supported by an ISDN

SECTION 5 — *Supplementary services in ISDN*

I.250 Definition of supplementary services

I.251 Number identification supplementary services

I.252 Call offering supplementary services

I.253 Call completion supplementary services

I.254 Multiparty supplementary services

I.255 ‘‘Community of interest’’ supplementary services

I.256 Charging supplementary services

I.257 Additional information transfer supplementary services

Part III — Overall network aspects and functions — I.300-Series

SECTION 1 — *Network functional principles*

I.310 ISDN — Network functional principles

SECTION 2 — *Reference models*

I.320 ISDN Protocol reference model

I.324 ISDN network architecture

I.325 Reference configurations for ISDN connection types

I.326 Reference configurations for relative network resource requirements

I.32x ISDN hypothetical reference connections

SECTION 3 — *Numbering, addressing and routing*

I.330 ISDN numbering and addressing principles

I.331 (E.164) Numbering plan for the ISDN era

I.332 Numbering principles for interwork between ISDNs and dedicated networks with different numbering plans

I.333 Terminal selection in ISDN

I.334 Principles relating ISDN numbers/subaddress to the OSI reference model network layer addresses

I.335 ISDN routing principles

SECTION 4 — *Connection types*

I.340 ISDN connection types

SECTION 5 — *Performance objectives*

I.350 General aspects of Quality of Service and network performance in digital networks, including ISDNs

I.351 Recommendations in other Series including network performance objectives that apply at T-reference points of an ISDN

I.352 Network performance objectives for call processing delays

Part IV — ISDN user-network interfaces — I.400-Series

SECTION 1 — *ISDN user-network interfaces*

I.410 General aspects and principles relating to Recommendations on ISDN user-network interfaces

I.411 ISDN user-network interfaces — Reference configurations

I.412 ISDN user-network interfaces — Interface structures and access capabilities

SECTION 2 — *Application of I-Series Recommendations to ISDN user-network interfaces*

I.420 Basic user-network interface

I.421 Primary rate user-network interface

SECTION 3 — *ISDN user-network interfaces: Layer 1 Recommendations*

I.430 Basic user-network interface — Layer 1 specification

I.431 Primary rate user-network interface — Layer 1 specification

I.43x Higher rate user-network interfaces

SECTION 4 — *ISDN user-network interfaces: Layer 2 Recommendations*

I.440 (Q.920) ISDN user-network interface data link layer — general aspects

I.441 (Q.921) ISDN user-network interface data link layer specification

SECTION 5 — *ISDN user-network interfaces: Layer 3 Recommendations*

I.450 (Q.930) ISDN user-network interface layer 3 — general aspects

I.451 (Q.931) ISDN user-network interface layer 3 specification for basic call control

I.452 (Q.932) ISDN user-network interface layer 3 specification — generic procedures for the control of ISDN supplementary services

SECTION 6 — *Multiplexing, rate adaptation and support of existing interfaces*

I.460 Multiplexing, rate adaptation and support of existing interfaces

I.461 (X.30) Support of X.21 and X.21 | fIbis and X.20 | fIbis based Data Terminal Equipments (DTEs) by an ISDN

I.462 (X.31) Support of packet mode terminal equipment by an ISDN

I.463 (V.110) Support of Data Terminal Equipments (DTEs) with V-series type interfaces by an ISDN

I.464 Multiplexing, rate adaptation and support of existing interfaces for restricted 64 kbit/s transfer capability

I.465 Support by an ISDN of data terminal equipment with V-Series type interfaces with provision for statistical multiplexing

SECTION 7 — *Aspects of ISDN affecting terminal requirements*

I.470 Relationship of terminal functions to ISDN

Part V — Internetwork interfaces — I.500-Series

I.500 General structure of ISDN interworking Recommendations

I.510 Definitions and general principles for ISDN interworking

I.511 ISDN-to-ISDN Layer 1 internetwork interface

I.515 Parameter exchange for ISDN interworking

I.520 General arrangements for network interworking between ISDNs

I.530 Network interworking between an ISDN and a public switched telephone network (PSTN)

I.540 (X.321) General arrangements for interworking between Circuit-Switched Public Data Networks (CSPDNS) and Integrated Services Digital Networks (ISDNs) for the provision of data transmission services

I.550 (X.325) General arrangements for interworking between Packet Switched Public Data Networks (PSPDNs) and Integrated Services Digital Networks (ISDNs) for the provision of data services

I.560 (V.202) Requirements to be met in providing the telex service within the ISDN

Part VI — Maintenance principles — I.600-Series

Recommendation I.111

RELATIONSHIP WITH OTHER RECOMMENDATIONS RELEVANT TO ISDNs

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988)

The I-Series of Recommendations applies to the general concept and to the network capabilities of an ISDN mainly insofar as they appear at user-network interfaces and internetwork interfaces. Moreover, the detailed specifications of ISDN interfaces are contained in the I-Series of Recommendations.

The specific aspects within the network, and ancillary features that are necessary to support the above, will continue to be covered wholly or in part, by the appropriate Series of Recommendations. Such aspects may include:

— technical characteristics of component parts and their performance objectives (e.g. transmission systems, switching systems, interexchange signalling systems);

— network synchronization;

— maintenance and operation;

— services;

— tariffs and charging.

Some of the existing Recommendations for telephony and other dedicated service networks are directly applicable also to ISDNs. However, other Recommendations in those Series may need to be developed in order to cover applications in an ISDN.

References to other Recommendations relevant to ISDNs and/or used in developing I-Series Recommendations are listed in Table 1/I.111.

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H.T. [T1.111]

TABLE 1/I.111

References to other Recommendations relevant to ISDNs

vide **vide**

{

Access, user-network (I.400-Series)

—

Q.920, Q.930

Adaptation, terminal (I.460-Series)

—

X.30, X.31

—

V.110, V.120

Bearer services

—

X.25, X.31, X.300

—

G.711

Charging (I.141, I.326)

—

D.93, D.200-Series

Digital switching

—

Q.500-Series

Digital transmission

—

G.700-Series, G.800-Series, G.900-Series

Exchange, digital local

—

Q.511 to Q.517

Interworking: digital hierarchies

—

G.802

Interworking, ISDN and other networks (I.500-Series)

—

X.1, X.2, X.10, X.15, X.25, X.30, X.31, X.71, X.75, X.81

—

X.180, X.181, X.300-Series

—

V.110, V.120

—

U.12, U.202

—

Q.921, Q.931

Interworking, signalling systems

—

Q.120 to Q.180, Q.251 to Q.300, Q.310 to Q.490

—

Q.600-Series, Q.700-Series

—

X.75

Management and maintenance (I.600-Series)

—

M.20, M.21, M.22, M.24, M.30, M.36, M.40

—

M.122, M.125

—

M.250, M.251, M.550, M.555, M.557

—

M.770, M.782

—

G.601, G.700-Series, G.821, G.900-Series

—

Q.512, Q.542, Q.940

Modelling (I.130-Series, I.140-Series, I.300-Series)

—
Q.65, Q.71, Q.80, Q.500-Series, Q.700-Series
—
X.200, X.300
—
Z.100-Series
Numbering (I.330-Series)
—
E.163, E.164, E.165, E.166, E.167
—
F.69
—
X.121, X.122, X.200
—
Q.921, Q.931, Q.932
—
T.90
Parameter exchange (I.515)
—
V.32, V.100, V.110, V.120
—
G.725
—
X.21, X.21 | fIbis
, X.25, X.30, X.31
—
Q.931, Q.932, Q.764
} {
Performance (I.350-Series)
—
G.100-Series
—
G.821, G.822, G.823 and G.824
—
P.56, P.66 and P.84
Protection
—
K.20
—
K.22
—
K.23
Routing (I.335)
—
E.164, E.170 to E.172, E.502
—
G.801
—
X.110
—
Q.600-Series, Q.700-Series, Q.930, Q.931
Signalling, user-network (I.440-Series, I.450-Series)
—
Q.920 to Q.940
Signalling, inter-exchange (SS No. 7)
—
Q.701 to Q.714, Q.761 to Q.766, Q.771 to Q.774
Speech encoding
—
G.711, G.721, G.722, G.723, G.725
Supplementary services (I.250-Series)
—
Q.932

— Q.71 to Q.99	
— X.2	
Switching	
— Q.500-Series	
Telephony, transmission quality	
— G.100-Series	
Teleservices (I.240-Series)	
— E-Series	
— F-Series	
— X-Series	
— T-Series	
— U.201	
— G.711, G.722	
Terminals (I.470)	
— T.90	
— E.330, E.331	
— P.31	
— V.110, V.120, V.230	
Tones and announcements (I.530)	
— E.184	
— V.25	
Transmission	
— G.700-Series, G.800-Series, G.900-Series	
Vocabulary (I.112, I.113)	
— G.701	
}	

Tableau 1/I.111 [T1.111], p. 4

Recommendation I.112

VOCABULARY OF TERMS FOR ISDNs

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988)

1 Introduction

This Recommendation consists primarily of those terms and definitions that are considered essential to the understanding and application of the principles of an Integrated Services Digital Network (ISDN). They are not exclusive to ISDNs and are also recommended for application, insofar as they are relevant, to other types of telecommunication networks.

Included are some terms that are already defined in other Recommendations. However, the definitions given here embrace only the essential concepts and on that basis it is considered that they are not inconsistent with the more specialized definitions that appear in those other Recommendations.

A small number of the terms and definitions in this Recommendation are duplicated in Recommendation G.701. References to these definitions are given in brackets, for example { 00 } as an aid to ensuring consistency between the two Recommendations in the event of future amendments.

According to the conventions applied in this Recommendation, any term in common usage but whose use is deprecated in the sense defined, is shown as in the following example: ‘‘419 functional group [functional grouping]’’.

Where a truncated term is widely used in an understood context the complete term is quoted following the colloquial form, for example, ‘‘111 circuit, telecommunication circuit’’.

Annex A to this Recommendation contains an alphabetical list of all of the terms contained in this Recommendation.

CONTENTS

2 Vocabulary of terms

2.1 *General*

101 **communication**

F: *communication*

S: *comunicaci´on*

The transfer of information according to agreed conventions.

Note — In French and Spanish the corresponding terms ‘‘communications’’ and ‘‘comunicaci´on’’ have additional specific meanings in telecommunication.

102 **signal** { 00 }

F: *signal*

S: *señal*

A physical phenomenon one or more of whose characteristics may vary to represent information.

103 **analogue signal** { 00 }

F: signal analogique

S: señal anal´ogica

A signal one of whose characteristic quantities follows continuously the variations of another physical quantity representing information.

104 **discretely-timed signal** { 00 }

F: signal (temporel) discret

S: señal discretamente temporizada

A signal composed of successive elements in time, each element having one or more characteristics which can convey information, for example, its duration, its waveform and its amplitude.

105 **digital signal** { 00 }

F: signal num´erique

S: señal digital

A discretely-timed signal in which information is represented by a number of well-defined discrete values that one of its characteristic quantities may take in time.

Note — The term may be qualified to indicate the digit rate, for example: ‘‘140 Mbit/s digital signal’’.

106 **transmission** { 00 }

F: transmission

S: transmisi´on

The action of conveying signals from one point to one or more other points.

Note 1 — Transmission can be effected directly or indirectly, with or without intermediate storage.

Note 2 — The use of the English word ‘‘transmission’’ in the sense of ‘‘emission’’ is deprecated.

107 **digital transmission** { 00 }

F: transmission num´erique

S: transmisi´on digital

The transmission of digital signals by means of a channel or channels that may assume in time any one of a defined set of discrete states.

108 **channel, transmission channel** { 00 }

F: voie, voie de transmission

S: canal, canal de transmisi´on

A means of unidirectional transmission of signals between two points.

Note 1 — Several channels may share a common path; for example each channel may be allocated a particular frequency band or a particular time slot.

Note 2 — The term may be qualified by the nature of the transmitted signals, by the bandwidth, by the digit rate, or by an arbitrary designation.

Note 3 — See also Term 414, access channel.

109 **digital channel, digital transmission channel** { 00 }

F: voie numérique, voie de transmission numérique

S: canal digital, canal de transmisión digital

The means of unidirectional digital transmission of digital signals between two points.

110 **telecommunication** { 00 }

F: télécommunication

S: telecomunicación

Any transmission and/or emission and reception of signals representing signs, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems.

111 **circuit, telecommunication circuit** { 00 }

F: circuit, circuit de télécommunications

S: circuito, circuito de telecomunicación

A combination of two transmission channels permitting bi-directional transmission of signals between two points, to support a single communication.

Note 1 — If the telecommunication is by nature unidirectional (for example: long distance television transmission), the term ‘‘circuit’’ is sometimes used to designate the single channel providing the facility.

Note 2 — In a telecommunication network use of the term ‘‘circuit’’ is generally limited to a telecommunication circuit directly connecting two switching devices or exchanges, together with associated terminating equipment.

Note 3 — A telecommunication circuit may permit transmission in both directions simultaneously (duplex) or not simultaneously (simplex).

Note 4 — A telecommunication circuit that is used for transmission in one direction only is sometimes referred to as a unidirectional telecommunication circuit. A telecommunication circuit that is used for transmission in both directions (whether simultaneously or not) is sometimes referred to as a bidirectional telecommunication circuit.

112 **digital circuit, digital telecommunication circuit** { 00 }

F: circuit numérique, circuit numérique de télécommunications

S: circuito digital, circuito de telecomunicación digital

A combination of two digital transmission channels permitting bidirectional digital transmission between two points, to support a single communication.

Note 1 — If the telecommunication is by nature unidirectional (for example: long distance television transmission), the term ‘‘digital circuit’’ is sometimes used to designate the single digital channel providing the facility.

Note 2 — In a telecommunication network, use of the term ‘‘digital circuit’’ is generally limited to a digital telecommunication circuit directly connecting two switching devices or exchanges, together with associated terminating equipment.

Note 3 — A digital telecommunication circuit may permit transmission in both directions simultaneously (duplex), or not simultaneously (simplex).

Note 4 — A digital telecommunication circuit that is used for transmission in one direction only is sometimes referred to as a unidirectional digital telecommunication circuit. A digital telecommunication circuit that is used for transmission in both directions (whether simultaneously or not) is sometimes referred to as a bidirectional digital telecommunication circuit.

113 **switching**

F: commutation

S: conmutaci´on

The process of interconnecting functional units, transmission channels or telecommunication circuits for as long as is required to convey signals.

114 **digital switching**

F: *commutation numérique*

S: *conmutación digital*

Switching by means that may assume in time any one of a defined set of discrete signal states, in order to convey digital signals.

115 **exchange**

F: *commutateur [central]*

S: *central*

An aggregate of traffic carrying devices, switching stages, controlling and signalling means, and other functional units at a network node that enables subscriber lines, telecommunication circuits and/or other functional units to be interconnected as required by individual users.

116 **digital exchange**

F: *commutateur numérique*

S: *central digital*

An exchange that switches digital signals by means of digital switching.

117 **integrated digital transmission and switching**

F: *transmission et commutation numériques intégrées*

S: *transmisión y conmutación digitales integradas*

The direct (digital) concatenation of digital transmission and digital switching, that maintains a continuous digital transmission path.

2.2 *Services*

201 **service, telecommunication service**

F: *service, service de télécommunications*

S: *servicio, servicio de telecomunicación*

That which is offered by an Administation or RPOA to its customers in order to satisfy a specific telecommunication requirement.

Note — Bearer service and teleservice are types of telecommunication service. Other types of telecommunication service may be identified in the future.

202 **bearer service**

F: *service support*

S: *servicio portador*

A type of telecommunication service that provides the capability for the transmission of signals between user-network interfaces.

Note — The ISDN connection type used to support a bearer service may be identical to that used to support other types of telecommunication service.

203 **teleservice [telecommunication service]**

F: *t´el´eservice*

S: *teleservicio, servicio final*

A type of telecommunication service that provides the complete capability, including terminal equipment functions, for communication between users according to protocols established by agreement between Administrations and/or RPOAs.

204 **teleaction service [telemetry service]**

F: service de téléaction [service de télémesure]

S: servicio de teleacción

A type of telecommunication service that uses short messages, requiring a very low transmission rate, between the user and the network.

Note — Examples of teleaction services are: telealarm, telecommand, telealerting.

205 **demand service, demand telecommunication service**

F: service à la demande, service de télécommunications à la demande

S: servicio por demanda, servicio de telecomunicación por demanda

A type of telecommunication service in which the communication path is established almost immediately, in response to a user request effected by means of user-network signalling.

206 **reserved circuit service, reserved circuit telecommunication service**

F: service de circuit réservé, service de circuit de télécommunications réservé

S: servicio de circuito reservado, servicio de telecomunicación de circuito reservado

A type of telecommunication service in which the communication path is established at a time specified in advance by the user, in response to a user request effected by means of user-network signalling.

Note — The duration of the communication, or the time of release of the communication path, may also be specified in advance by the user.

207 **permanent circuit service, permanent circuit telecommunication service**

F: service de circuit permanent, service de circuit de télécommunications permanent

S: servicio de circuito permanente, servicio de telecomunicación de circuito permanente

A type of telecommunication service in which the communication path is established in response to a customer request effected by means of an operational or administrative message.

Note — Release of the communication path is effected in a similar way to its establishment.

208 **service attribute, telecommunication service attribute**

F: attribut de service, attribut de service de télécommunications

S: atributo de servicio, atributo de servicio de telecomunicación

A specified characteristic of a telecommunication service.

Note — The value(s) assigned to one or more service attributes may be used to distinguish that telecommunication service from others.

2.3 *Networks*

301 **link, transmission link**

F: liaison, liaison de transmission

S: enlace, enlace de transmisión

A means of transmission with specified characteristics between two points.

Note — The type of the transmission path or the capacity is normally indicated, e.g. radio link, coaxial link, or 2048 kbit/s link.

302 **digital link, digital transmission link** { 00 }

F: liaison numérique, liaison de transmission numérique

S: enlace digital, enlace de transmisión digital

The whole of the means of digital transmission of a digital signal of specified rate between two digital distribution frames (or equivalent).

Note 1 — A digital link comprises one or more digital sections and may include multiplexing and/or demultiplexing, but not switching.

Note 2 — The term may be qualified to indicate the transmission medium used, for example: ‘‘digital satellite link’’.

Note 3 — The term always applies to the combination of ‘‘go’’ and ‘‘return’’ directions of transmission, unless stated otherwise.

Note 4 — The term ‘‘digital path’’ is sometimes used to describe one or more digital links connected in tandem, especially between equipments at which the signals of the specified rate originate and terminate.

303 **node, switching node**

F: noeud, noeud de commutation

S: nodo, nodo de conmutaci´on

A point at which switching occurs.

Note — The term ‘‘node’’ is sometimes used to refer to a point at which circuits are interconnected by means other than switching. In such a

case a suitable qualification should be used, for example: ‘‘synchronization node’’.

304 **digital switching node**

F: noeud de commutation num´erique

S: nodo de conmutaci´on digital

A node at which digital switching occurs.

305 **network, telecommunication network**

F: r´eseau, r´eseau de t´el´ecommunications

S: red, red de telecomunicaci´on

A set of nodes and links that provides connections between two or more defined points to facilitate telecommunication between them.

306 **digital network, integrated digital network**

F: r´eseau num´erique, r´eseau num´erique int´egr´e

S: red digital, red digital integrada

A set of digital nodes and digital links that uses integrated transmission and switching to provide digital connections between two or more defined points to facilitate telecommunication between them.

307 **integrated services network**

F: r´eseau avec int´egration des services

S: red de servicios integrados

A network that provides or supports a range of different telecommunication services.

308 **integrated services digital network (ISDN)**

F: r´eseau num´erique avec int´egration des services (RNIS)

S: red digital de servicios integrados (RDSI)

An integrated services network that provides digital connections between user-network interfaces.

309 **connection**

F: connexion, cha **|** *ne de connexion*

S: conexi´on

A concatenation of transmission channels or telecommunication circuits, switching and other functional units set up to provide for the transfer of signals between two or more points in a telecommunication network, to support a single communication.

310 **digital connection** { 00 }

F: connexion num´erique

S: conexi´on digital

A concatenation of digital transmission channels or digital telecommunication circuits, switching and other functional units set up to provide for the transfer of digital signals between two or more points in a telecommunication network, to support a single communication.

311 **switched connection**

F: connexion commut´ee

S: conexi´on conmutada

A connection that is established by means of switching.

Note — A switched connection may be used to support both demand and reserved circuit services.

312 **non-switched connection**

F: connexion non commut´ee

S: conexi´on no conmutada

A connection that is established without the use of switching, for example by means of hard-wired joints.

313 **exchange connection**

F: connexion de commutateur

S: conexi´on de central

A connection that is established through an exchange, between the terminations on that exchange, of two or more channels or circuits.

314 **ISDN connection**

F: connexion RNIS

S: conexi´on de RDSI

A connection that is established through an ISDN between specified ISDN interfaces.

315 **connection attribute, ISDN connection attribute**

F: attribut de connexion, attribut de connexion RNIS

S: atributo de conexi´on, atributo de conexi´on de RDSI

A specified characteristic of an ISDN connection.

Note — The value(s) assigned to one or more connection attributes may be used to distinguish that connection from others.

316 **connection type, ISDN connection type**

F: type de connexion, type de connexion RNIS

S: tipo de conexi´on, tipo de conexi´on de RDSI

A description of a set of ISDN connections that consists of stated values of one or more ISDN connection attributes.

317 **connection element, ISDN connection element**

F: ´el´ement de connexion, ´el´ement de connexion RNIS

S: elemento de conexi´on, elemento de conexi´on de RDSI

A part of an ISDN connection which has stated values of one or more ISDN connection attributes.

318 **switched connection element, switched ISDN connection element**

F: ´el´ement de connexion commut´ee, ´el´ement de connexion RNIS commut´ee

S: elemento de conexi´on conmutada, elemento de conexi´on conmutada de RDSI

An ISDN connection element that is established by means of switching.

319 **non-switched connection element, non-switched ISDN connection element**

F: ´el´ement de connexion non commut´ee, ´el´ement de connexion RNIS non commut´ee

S: elemento de conexi´on no conmutada, elemento de conexi´on no conmutada de RDSI

An ISDN connection element that is established without switching.

320 **point-to-point ISDN connection**

F: connexion RNIS point-`a-point

S: conexi´on de RDSI punto a punto

An ISDN connection that is established between two specified ISDN interfaces.

321 **point-to-multipoint ISDN connection**

F: connexion RNIS point-multipoints

S: conexi´on de RDSI punto a multipunto

An ISDN connection that is established between a single specified ISDN interface, and more than one other specified ISDN interface.

2.4 *Access*

401 **user, user of a telecommunication network**

F: usager, usager d'un r´eseau de t´el´ecommunications

F: usuario, usuario de una red de telecomunicaci´on

A person or machine delegated by a customer to use the services and/or facilities of a telecommunication network.

402 **user access, user-network access**

F: acc`es d'usager, acc`es d'usager-r´eseau

S: acceso de usuario, acceso usuario-red

The means by which a user is connected to a telecommunication network in order to use the services and/or facilities of that network.

403 **function**

F: fonction

S: función

A set of processes defined for the purpose of achieving a specified objective.

Note — Functions may be ordered in a logical hierarchy.

404 **layer [level]**

F: couche [niveau]

S: capa [nivel]

A conceptual region that embodies one or more functions between an upper and a lower logical boundary within a hierarchy of functions.

Note — The Open Systems Interconnection (OSI) reference model has seven layers.

405 **protocol**

F: *protocole*

S: *protocolo*

A formal statement of the procedures that are adopted to ensure communication between two or more functions within the same layer of a hierarchy of functions.

406 **access protocol**

F: *protocole d'acc`es*

S: *protocolo de acceso*

A defined set of procedures that is adopted at an interface at a specified reference point between a user and a network to enable the user to employ the services and/or facilities of that network.

407 **user-user protocol**

F: *protocole d'usager à usager*

S: *protocolo usuario-usuario*

A protocol that is adopted between two or more users in order to ensure communication between them.

408 **interface** { 00 }

F: *interface*

S: *interfaz*

The common boundary between two associated systems.

409 **user-network interface**

F: *interface usager-r´eseau*

S: *interfaz usuario-red*

The interface between the terminal equipment and a network termination at which interface the access protocols apply.

410 **layer interface**

F: *interface de couche*

S: *interfaz de capa*

The interface between adjacent layers of hierarchy of layers.

411 **physical interface**

F: *interface physique*

S: *interfaz físico*

The interface between two equipments.

412 **interface specification**

F: *spécification d'interface*

S: *especificación de interfaz*

A formal statement of the type, quantity, form and order of the interconnections and interactions between two associated systems, at their interface.

413 **physical interface specification [physical interface]**

F: *spécification d'interface physique [interface physique]*

S: *especificación de interfaz físico [interfaz físico]*

A formal statement of the mechanical, electrical, electromagnetic and optical characteristics of the interconnections and interactions between two associated equipments, at their interface.

414 **access channel [channel]**

F: canal d’accès [canal]

S: canal de acceso [canal]

A designated part of the information transfer capability having specified characteristics, provided at the user-network interface:

Note 1 — The term ‘‘transmission channel’’ is well understood to imply unidirectional working only, and then is commonly abbreviated to ‘‘channel’’. In the special case where the term ‘‘access channel’’ is used to encompass bidirectional working through the user-network interface, it must not be abbreviated to channel.

Note 2 — The term ‘‘access channel’’ may be qualified, for example by H, B or D in which case it is appropriate to abbreviate the term to ‘‘H-channel’’, to ‘‘B-channel’’ or to ‘‘D-channel’’.

Note 3 — Unless otherwise qualified, the access channel characteristics at the user-network interface are assumed to be bidirectional symmetric. When such characteristics are unidirectional, the term ‘‘unidirectional access channel’’ should be used.

415 **interface structure, ISDN user-network interface structure**

F: structure d’interface, structure d’interface RNIS usager-réseau

S: estructura de interfaz, estructura de interfaz usuario-red de la RDSI

The number and type of the access channels that appear at an ISDN user-network interface.

416 **access capability, ISDN access capability**

F: capacité d’accès, capacité d’accès au RNIS

S: capacidad de acceso, capacidad de acceso de la RDSI

The number and type of the access channels at an ISDN access interface that are actually available for telecommunication purposes.

417 **terminal equipment**

F: équipement terminal (ET)

S: equipo terminal

Equipment that provides the functions necessary for the operation of the access protocols by the user.

418 **network termination**

F: terminaison de réseau

S: terminación de red

Equipment that provides the functions necessary for the operation of the access protocols by the network.

Note — The network termination provides essential functions for transmission purposes.

419 **functional group [functional grouping]**

F: groupe fonctionnel [groupement fonctionnel]

S: *grupo funcional [agrupación funcional]*

A set of functions that may be performed by a single equipment.

420 **reference point**

F: *point de référence*

S: *punto de referencia*

A conceptual point at the conjunction of two non-overlapping functional groups.

421 **reference configuration**

F: configuration de référence

S: configuración de referencia

A combination of functional groups and reference points that shows possible network arrangements.

422 **multipoint access**

F: accès multipoint

S: acceso multipunto

User access in which more than one terminal equipment is supported by a single network termination.

423 **access contention**

F: conflit d'accès

S: contienda de accesso

A conflict between the demands made on a network termination in multipoint access.

424 **access contention resolution**

F: résolution des conflits d'accès

S: resolución de contienda de acceso

The arbitration of conflicting demands on a network termination in multipoint access.

2.5 *Signalling*

501 **signalling**

F: signalisation

S: señalización

The exchange of information specifically concerned with the establishment and control of connections, and with management, in a telecommunication network.

502 **channel-associated signalling**

F: signalisation voie par voie

S: señalización asociada al canal

A method of signalling in which signalling information relating to the traffic carried by a single channel is transmitted in the channel itself or in a signalling channel permanently associated with it.

503 **common channel signalling**

F: signalisation sur voie commune, signalisation par canal s´emaphore

S: señalizaci´on por canal com´un

A method of signalling in which signalling information relating to a multiplicity of circuits or functions or for network management, is conveyed over a single channel by addressed messages.

504 **in-slot signalling**

F: signalisation dans le cr´eneau temporel

S: señalizaci´on dentro del intervalo

Signalling associated with a channel and transmitted in a digit time-slot permanently (or periodically) allocated in the channel time-slot.

505 **out-slot signalling**

F: signalisation hors cr´eneau temporel

S: señalizaci´on fuera del intervalo

Signalling associated with a channel and transmitted in one or more separate digit time-slots not within the channel time-slot.

506 **speech digit signalling**

F: signalisation par ´el´ements num´eriques vocaux

S: señalizaci´on por d´igitos de conversaci´on

A type of channel-associated signalling in which digit time-slots primarily used for the transmission of encoded speech are periodically used for signalling.

ANNEX A
(to Recommendation I.112)

Alphabetical list of terms contained in this Recommendation

416 access capability

414 access channel

423 access contention

424 access contention resolution

406 access protocol

103 analogue signal

202 bearer service

108 channel

502 channel-associated signalling

111 circuit

503 common-channel signalling

101 communication

309 connection

315 connection attribute

317 connection element

316 connection type

205 demand service

The number against a term indicates its location in the vocabulary.

410 layer interface

Recommendation I.113

VOCABULARY OF TERMS FOR BROADBAND ASPECTS OF ISDN

(Melbourne, 1988)

1 Introduction

This Recommendation consists primarily of those terms and definitions that are considered essential to the understanding and application of the principles of Broadband Aspects of Integrated Services Digital Network (B-ISDN). They are not exclusive to broadband aspects of ISDN and are recommended also for application, insofar as they are relevant, to other types of telecommunication networks.

Included are terms that may already be defined in other CCITT/CCIR Recommendations. However, the definitions given here embrace only the essential concepts and on that basis it is considered that they are not inconsistent with the more specialized definitions that appear in those Recommendations.

According to the conventions applied in this Recommendation, any term in common usage, but whose use is deprecated, is shown in brackets as in the following example: ‘‘broadband [wideband]’’.

Where a truncated term is widely used in an understood context the complete term is quoted following the colloquial form, for example, ‘‘contribution, contribution application’’.

Some definitions include terms in bold face to indicate that these terms are defined elsewhere in this Recommendation.

Annex A to this Recommendation contains an alphabetical list of all the terms contained in this Recommendation.

2 Vocabulary of terms

(This section is divided into two sub-sections, 2.1 Services, and 2.2 Interfaces, channels and transfer modes. Within each sub-section the terms are listed and defined.)

2.1 *Services*

101 **broadband [wideband]**

F: *large bande*

S: *banda ancha*

A service or system requiring transmission channels capable of supporting rates greater than the primary rate.

102 **broadcast**

F: *diffusion*

S: *difusión*

A value of the service attribute ‘‘communication configuration’’, which denotes unidirectional distribution to all subscribers.

Note — This term should not be confused with the term ‘‘broadcasting service’’ as defined in the ITU Radio Regulations.

103 **connectionless service**

F: *service sans connexion*

S: *servicio sin conexión*

A service which allows the transfer of information among service subscribers without the need for end-to-end call establishment procedures.

Note — Connectionless services may be used to support both interactive and distribution services.

104 **contribution, contribution application**

F: *contribution*

S: *contribución, aplicación de contribución*

Use of a **broadband** service or channel for transferring audio or video information to user for further **post-production processing** and subsequent **distribution** .

105 **conversational service**

F: service conversationnel

S: servicio conversacional

An **interactive service** which provides for bidirectional communication by means of real-time (no store-and-forward) end-to-end information transfer from user to user or between user and host.

106 **distribution, distribution aplication**

F: distribution

S: disribuci´on, aplicaci´on de distribuci´on

Use of a **broadband** service or channel for transferring audio or video information to a user or a number of users which will not apply **post-production processing** to the information.

107 **distribution service**

F: service de distribution

S: servicio de distribuci´on

Service characterized by the unidirectional flow of information from a given point in the network to other (multiple) locations. Distribution services are subdivided into two classes: **distribution services without user individual presentation control** and **distribution services with user individual presentation control** .

108 **distribution service with user individual presentation control**

F: service distribu´e avec contr | le de pr´esentation par l'usager

S: servicio de distribuci´on con control de la presentaci´on por el usuario

A **distribution service** in which the information is provided as a sequence of information entities (e.g., frames) with cyclical repetition, so that the user has the ability to select individual information entities and can control the start and order of the information.

109 **distribution service without user individual presentation control**

F: service distribu´e sans contr | le de pr´esentation par l'usager

S: servicio de distribuci´on sin control de la presentaci´on por el usuario

A **distribution service** which users can access without having any control over the start and order of the presentation of the distributed information.

110 **enhanced-quality television**

F: t´el´evision de qualit´e am´elior´ee

S: televisi´on de calidad mejorada

Television of quality superior to **existing-quality television** , but less than the quality of high-definition television.

111 **existing-quality television**

F: t´el´evision de qualit´e conventionnelle

S: televisi´on de calidad convencional

Television as defined in conventional 625-line and 525-line television standards, such as NTSC, PAL and SECAM.

112 **interactive service**

F: *service interactif*

S: *servicio interactivo*

A service which provides the means for bidirectional exchange of information between users or between users and hosts. Interactive services are subdivided into three classes of services: **conversational services, messaging services** and **retrieval services** .

113 **messaging service**

F: *service de messagerie*

S: *servicio de mensajer´ia*

An **interactive service** which offers 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.

114 **mixed document**

F: document mixte

S: documento mixto

A document that may contain text, graphics, data, image, and moving picture information as well as voice annotation.

115 **multipoint**

F: multipoint

S: multipunto

A value of the attribute ‘‘communication configuration’’ which denotes that the communication involves more than two network terminations.

116 **post-production processing**

F: post-production (traitment après production)

S: tratamiento de posproducción

Further processing of contributed audio and video information, to change the form or presentation of the information prior to its final utilization.

117 **retrieval service**

F: service de consultation

S: servicio de consulta

An **interactive service** which provides the capability of accessing information stored in database centres. This information will be sent to the user on demand only. The information can be retrieved on an individual basis, i.e., the time at which an information sequence is to start is under the control of the user.

118 **sound retrieval service**

F: service de consultation de programmes sonores

S: servicio de consulta de programas sonoros

On-demand (user initiated) retrieval of music and other audio information.

119 **videomessaging**

F: messagerie vidéo

S: videomensajería

A **messaging service** for the transfer for moving pictures.

2.2 *Interfaces, channels and transfer modes*

201 **asynchronous time-division multiplexing**

F: *multiplexage temporel asynchrone*

S: *multiplexaci´on as´incrona por divisi´on en el tiempo*

A multiplexing technique in which a transmission capability is organized in undedicated slots filled with **cells** with respect to each application's instantaneous real need. In this case, the terminal equipment — i.e. the customer application — defines the actual transmitted bit rate, whatever this rate is, possibly variable during the communication. This technique carries a **labelled interface structure** over a **frame** or a **self-delineating labelled interface** .

202 **asynchronous transfer mode (ATM)**

F: mode de transfert asynchrone (MTA)

S: modo de transferencia asíncrono (MTA)

A **transfer mode** in which the information is organized into **cells** ; it is asynchronous in the sense that the recurrence of cells depends on the required or instantaneous bit rate. **Statistical** and **deterministic** values may also be used to qualify the **transfer mode** .

203 **block**

F: bloc

S: bloque

A unit of information consisting of a **header** and an information field.

204 **block payload**

F: charge utile de bloc

S: carga neta del bloque

The user information bits within a **block** .

205 **broadband access**

F: accès à large bande

S: acceso de banda ancha

An ISDN access able to contain at least one channel capable of supporting a rate greater than the primary rate, or supporting an equivalent information transfer rate.

206 **broadband communication channel**

F: voie de communication à large bande

S: canal de comunicación de banda ancha

A standard portion of the **information payload capacity** , available to the user for ISDN services. A **broadband** communication channel exists only during a call, as set-up by a signalling or administrative procedure. The **throughput** supported by the broadband communication channel may be **deterministic** or **statistical** .

207 **cell**

F: cellule

S: célula

A **block** of fixed length identified by a label at layer 1 of the OSI reference model.

208 **circuit transfer mode**

F: *mode de transfert par circuit*

S: modo de transferencia circuito, modo de transferencia por circuito

A **transfer mode** in which transmission and switching functions are achieved by permanent allocation of channels/bandwidth between the connections.

209 **deterministic, ATM deterministic transfer mode**

F: *mode de transfert asynchrone d´eterministe*

S: determin´istico, modo de transferencia determin´istico MTA

A specific **transfer mode** of the **asynchronous transfer mode** (ATM) in which the maximum information transfer capacity specified for a given service is provided to the user throughout a call.

210 **frame**

F: trame

S: trama

A **block** of variable length identified by a label at layer 2 of the OSI reference model, e.g. an HDLC block.

211 **framed interface**

F: interface tram´ee

S: interfaz entramado

An interface whose serial bit stream is segmented into **periodic physical frames** . Each frame is divided by a fixed partition into an overhead and an **information payload** portion.

212 **header, block header**

F: en-t **|** *te de bloc*

S: encabezamiento, encabezamiento de bloque

The bits within a **block** allocated for **labelled multiplexing** functions.

213 **hybrid interface structure**

F: structure d'interface hybride

S: estructure h´ibrida de interfaz

An interface structure which has a mixture of **labelled channels** and **positioned channels** .

214 **information payload capacity**

F: capacit´e utile d'information

S: capacidad de carga neta de informaci´on

The **interface rate** minus the overhead. The bit rate of the **interface payload** .

215 **interface overhead**

F: charge suppl´ementaire d'interface

S: tara del interfaz

The remaining portion of the bit stream after deducting the **information payload** . The interface overhead may be essential (e.g. framing for an interface shared by users) or ancillary (e.g. performance monitoring).

216 **interface payload**

F: charge utile d'interface

S: *carga neta del interfaz*

The portion of the bit stream of a **framed interface** which can be used for telecommunication services. Any signalling is included in the **interface payload** .

217 **interface rate, interface bit rate**

F: *d´ebit (binaire) de l'interface*

S: *velocidad del interfaz, velocidad binaria del interfaz*

The gross bit rate at the interface, e.g. the bit rate at the boundary between the physical layer and the physical medium.

218 **labelled channel**

F: *voie ´etiquet´ee*

S: *canal etiquetado*

A temporally-ordered collection of all **block payloads** having a common label value.

219 **labelled deterministic channel**

F: *voie ´etiquet´ee d´eterministe*

S: *canal etiquetado determin´istico*

A **labelled channel** that, in each successive interval of specified constant duration, contains on the average a constant number of **blocks** .

220 **labelled interface structure**

F: *structure d'interface ´etiquet´ee*

S: *estructura de interfaz etiquetado*

An interface structure in which all services and signalling are provided by **labelled channels** . A labelled interface structure can be accommodated within a **framed interface** or a **self-delineating labelled interface** .

221 **labelled multiplexing**

F: *multiplexage par ´etiquetage*

S: *multiplexaci´on por etiquetado*

The multiplexing of **labelled channels** by concatenating the **blocks** of the different channels.

222 **labelled statistical channel**

F: *voie ´etiquet´ee statistique*

S: *canal etiquetado estad´istico*

A **labelled channel** in which the payload of the successive **blocks** of the channel is random and/or the block durations are random.

223 **logical signalling channel**

F: *voie logique de signalisation*

S: *canal l´ogico de señalizaci´on*

A logical channel for signalling information with a defined maximum capacity, which is contained within an information channel or a **physical signalling channel** .

224 **network node interface (NNI)**

F: *interface de noeud du r´eseau (INR)*

S: *interfaz de nodo de red (INR)*

The interface between two network nodes (e.g. synchronous digital multiplex equipments, digital exchanges).

225 **packet**

F: *paquet*

S: *paquete*

An information **block** identified by a label at layer 3 of the OSI reference model.

226 **packet transfer mode**

F: mode de transfert par paquet

S: modo de transferencia paquete, modo de transferencia por paquete

A **transfer mode** in which the transmission and switching functions are achieved by **packet** oriented techniques, so as to dynamically share network transmission and switching resources between a multiplicity of connections.

227 **payload module**

F: module de charge utile

S: módulo de carga neta, módulo de carga útil, módulo neto

That portion of the **information payload** within which one or more channels entirely exist.

228 **periodic frame**

F: trame périodique

S: trama periódica

A transmission segment which is repeated at intervals of equal duration (e.g. 125 μsec), and may be delineated by incorporating fixed periodic patterns into the bit stream.

229 **physical frame**

F: trame physique

S: trama física

A segment of a serial logical bit stream at an interface, partitioned into successive segments.

230 **physical signalling channel**

F: voie physique de signalisation

S: canal físico de señalización

A dedicated physical channel (e.g. D-channel) used for signalling information. It may be used to carry other information.

231 **positioned channel**

F: voie identifiée par sa position

S: canal posicionado, canal localizado

A channel that occupies bit positions which form a fixed periodic pattern (e.g. B, H and D-channels in ISDN user interfaces).

232 **positioned interface structure**

F: structure d'interface positionnée

S: *estructura de interfaz posicionado*

A structure in which all services and signalling are provided by **positioned channels** . Such a structure can exist only within a **framed interface** .

233 **self-delineating block**

F: *bloc à auto-cadrage*

S: *bloque autodelimitado*

A **block** with the property that its endpoints can be identified by examining the block itself. A defined pattern or flag at the beginning of each block might serve to demarcate the block.

234 **self-delineating labelled interface**

F: interface étiquetée à auto-cadrage

S: interfaz etiquetado autodelimitado

An interface whose entire serial bit stream consists of a self-delineating **labelled multiplexing** .

235 **statistical, ATM statistical transfer mode**

F: statistique, mode de transfert asynchrone statistique

S: estadístico, modo de transferencia estadístico MTA

A specific transfer mode of the **asynchronous transfer mode** (ATM) in which the average information transfer capacity specified for a given service is provided to the user throughout a call.

236 **synchronous time division multiplexing**

F: multiplexage temporel synchrone

S: multiplexación síncrona por division en el tiempo

A multiplexing technique supporting **the synchronous transfer mode** (STM).

237 **synchronous transfer mode (STM)**

F: mode de transfert (temporel) synchrone (MTS)

S: modo de transferencia síncrono (MTS)

A **transfer mode** which offers periodically to each connection a fixed-length word.

238 **throughput**

F: capacité utile

S: caudal de tráfico, caudal

The number of data bits contained in a **block** (e.g. between the address field and the CRC field of the LAPD-based frames) successfully transferred in one direction across a section per unit time.

239 **transfer mode**

F: mode de transfert

S: modo de transferencia

Aspects covering transmission, multiplexing and switching in a telecommunications network.

240 **transit delay**

F: délai de transfert

S: *retardo de tr´ansito*

The time difference between the instant at which the first bit of the address field of a frame crosses one designated boundary, and the instant at which the last bit of the closing flag of the frame crosses a second designated boundary.

241 **virtual circuit**

F: *circuit virtuel*

S: *circuito virtual*

A type of **asynchronous transfer mode** (ATM) connection involving establishment and release procedures such that the label associated with each **cell** need not contain complete routing information.

ANNEX A
(to Recommendation I.113)

Alphabetical list of terms

contained in this Recommendation

201 asynchronous time-division multiplexing

202 asynchronous transfer mode

202 ATM

209 ATM deterministic transfer mode

235 ATM statistical transfer mode

203 block

212 block header

204 block payload

101 broadband

205 broadband access

206 broadband communication channel

102 broadcast

207 cell

208 circuit transfer mode

103 connectionless service

104 contribution

104 contribution application

105 conversational service

209 deterministic

106 distribution

106 distribution application

107 distribution service

108 distribution service with user individual presentation control

109 distribution service without user individual presentation control

110 enhanced-quality television

111 existing-quality television

210 frame

The number against a term indicates its location in the vocabulary.

Blanc