

**CCITT** 

**I.113** 

THE INTERNATIONAL TELEGRAPH AND TELEPHONE CONSULTATIVE COMMITTEE

INTEGRATED SERVICES DIGITAL
NETWORK (ISDN)
GENERAL STRUCTURE AND SERVICE
CAPABILITIES

# VOCABULARY OF TERMS FOR BROADBAND ASPECTS OF ISDN

Recommendation I.113



Geneva, 1991

### **FOREWORD**

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT 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 Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation I.113 was prepared by Study Group XVIII and was approved under the Resolution No. 2 procedure on the 5th of April 1991.

#### CCITT NOTES

- 1) In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication Administration and a recognized private operating agency.
- 2) A list of abbreviations used in this Recommendation can be found in Annex A.

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#### **Preamble to B-ISDN Recommendations**

In 1990, CCITT SG XVIII approved a first set of Recommendations on B-ISDN. These are:

- I.113 Vocabulary of terms for broadband aspects of ISDN
- I.121 Broadband aspects of ISDN
- I.150 B-ISDN asynchronous transfer mode functional characteristics
- I.211 B-ISDN service aspects
- I.311 B-ISDN general network aspects
- I.321 B-ISDN Protocol Reference Model and its application
- I.327 B-ISDN functional architecture
- I.361 B-ISDN ATM Layer specification
- I.362 B-ISDN ATM Adaptation Layer (AAL) functional description
- I.363 B-ISDN ATM Adaptation Layer (AAL) specification
- I.413 B-ISDN user-network interface
- I.432 B-ISDN user-network interface Physical Layer specification
- I.610 Operation and maintenance principles of B-ISDN access

These Recommendations address general B-ISDN aspects as well as specific service- and network-oriented issues, the fundamental characteristics of the asynchronous transfer mode (ATM), a first set of relevant ATM oriented parameters and their application at the user-network interface as well as impact on operation and maintenance of the B-ISDN access. They are an integral part of the well established I-Series Recommendations. The set of Recommendations are intended to serve as a consolidated basis for ongoing work relative to B-ISDN both within CCITT and in other organizations. They may also be used as a first basis towards the development of network elements.

CCITT will continue to further develop and complete these Recommendations in areas where there are unresolved issues and develop additional Recommendations on B-ISDN in the I-Series and other series in the future.

## PAGE BLANCHE

#### **Recommendation I.113**

#### VOCABULARY OF TERMS FOR BROADBAND ASPECTS OF ISDN

#### 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 the integrated services digital network (B-ISDN). They are not exclusive to B-ISDN and are recommended also for application, in so far 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 italics face to indicate that these terms are defined elsewhere in this Recommendation.

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

Annex B contains a list of abbreviations which are used in B-ISDN Recommendations.

## 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 users.

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 users without the need for end-to-end call establishment procedures.

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

#### 104 constant bit rate service

F: service à débit constant

S: servicio de velocidad binaria constante

A type of telecommunication service characterized by a service bit rate specified by a constant value.

#### 105 contribution, contribution application

F: contribution

S: contribución; aplicación de contribución

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

#### 106 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.

## 107 distribution, distribution application

F: distribution; application de distribution

S: distribución; aplicación de distribución

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

#### 108 distribution service

F: service de distribution

S: servicio de distribución

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.

#### distribution service with user individual presentation control

F: service distribué avec contrôle de présentation par l'usager

S: servicio de distribución con control de la presentación 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.

#### 2 Recommendation I.113

### distribution service without user individual presentation control

F: service distribué sans contrôle de présentation par l'usager

S: servicio de distribución sin control de la presentación 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.

### 111 enhanced-quality television

F: télévision de qualité améliorée

S: televisión de calidad mejorada

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

## 112 existing-quality television

F: télévision de qualité conventionnelle

S: televisión de calidad convencional

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

#### 113 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*.

## 114 messaging service

F: service de messagerie

S: servicio de mensajería

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.

#### 115 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

#### 116 multimedia service

F: service multimédia

S: servicio multimedio

A service in which the interchanged information consists of more than one type, such as text, graphics, sound, image and video.

### 117 **multipoint**

F: multipoint

S: multipunto

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

#### 118 post-production processing

*F:* post-production (traitement 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.

#### 119 retrieval service

F: service de consultation

S: servicio de consulta

An *interactive service* which provides the capability of accessing information stored in data base 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.

#### 120 service bit rate

F: débit de service

S: velocidad binaria de servicio

The bit rate which is available to a user for the transfer of user information.

#### 121 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.

### variable bit rate service

F: service à débit variable

S: servicio de velocidad binaria variable

A type of telecommunication service characterized by a *service bit rate* specified by statistically expressed parameters which allow the bit rate to vary within defined limits.

## videomessaging

F: messagerie vidéo

S: videomensajería

A messaging service for the transfer for moving pictures with or without other information.

#### 4 Recommendation I.113

#### 2.2 Interfaces, channels and transfer modes

#### 201 asynchronous time-division multiplexing

F: multiplexage temporel asynchrone

S: multiplexación asíncrona por división en el tiempo; multiplexación temporal asíncrona

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 (ATM)

S: modo de transferencia asíncrono (MTA)

A *transfer mode* in which the information is organized into <u>cells</u>; it is asynchronous in the sense that the recurrence of cells containing information from an individual user is not necessarily periodic.

#### 203 block

F: bloc

S: bloque

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

## 204 block payload

F: capacité utile de bloc

S: cabida útil del bloque; contenido útil del bloque

The bits in the information field within a block.

#### 205 broadband access

F: accès 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: canal de communication large bande

S: canal de comunicación de banda ancha

A specific 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.

#### 207 **cell**

F: cellule

S: célula

A *block* of fixed length. It is identified by a label at the asynchronous transfer mode layer of the B-ISDN protocol reference model.

#### 208 cell delineation

F: cadrage cellule

S: delimitación de la célula

The identification of cell boundaries in a cell stream.

#### 209 circuit transfer mode

F: mode de transfert par circuit

S: modo de transferencia circuito; modo de transferencia por circuitos

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

#### 210 connection admission control

F: contrôle d'admission des connexions

S: control de admisión de una conexión

The procedure within the control part of network nodes used to decide whether or not a request for a (virtual) connection can be accepted based on the requested usage parameters and already established connections.

#### 211 deterministic; ATM deterministic

F: déterministe; ATM déterministe

S: determinístico; MTA determinístico

A mode of the *asynchronous transfer mode* in which a constant information transfer capacity expressed in terms of a predetermined limiting value for a given service is provided to the user throughout a call.

#### 212 **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.

#### 213 framed interface

F: interface tramée

S: interfaz entramado

An interface where the 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.

## 214 general broadcast signalling virtual channel

F: canal virtuel de diffusion générale de la signalisation

S: canal virtual de señalización de difusión general

A virtual channel independent of service profiles and used for broadcast signalling.

## 215 header, cell header

F: en-tête; en-tête de cellule

S: encabezamiento; encabezamiento de célula

The bits within a cell allocated for functions required to transfer the cell payload within the network.

#### 6 Recommendation I.113

#### 216 **hybrid interface structure**

F: structure d'interface hybride

S: estructura híbrida de interfaz

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

## 217 information payload capacity

F: capacité utile d'information

S: cabida útil de información

The difference between the *interface rate* and the *interface overhead rate*, that is the bit rate of the *interface payload*.

#### 218 interface overhead

F: résidu de l'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).

#### 219 interface payload

F: capacité utile de l'interface

S: cabida útil 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*.

#### 220 interface rate; interface bit rate

F: débit à l'interface; débit binaire à l'interface

S: velocidad del interfaz; velocidad binaria del interfaz

The gross bit rate at an interface, that is, the sum of the bit rates of the *interface payload* and the *interface overhead*. Example: the bit rate at the boundary between the physical layer and the physical medium.

#### 221 invalid cell

F: cellule invalide

S: célula no válida

A cell where the header is declared by the header error control process to contain errors.

## 222 labelled channel

F: canal étiqueté

S: canal etiquetado

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

## 223 labelled deterministic channel

F: canal étiqueté déterministe

S: canal etiquetado determinístico

A *labelled channel* with the property that the aggregated payload capacity of all blocks in each successive interval of specified constant duration is a constant.

#### 224 labelled interface structure

F: structure d'interface étiquetée

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*.

#### 225 **labelled multiplexing**

F: multiplexage par étiquetage

S: multiplexación por etiquetado

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

#### 226 labelled statistical channel

F: canal étiqueté statistique

S: canal etiquetado estadístico

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

## 227 logical signalling channel

F: canal logique de signalisation

S: canal lógico de señalización

A logical channel for signalling information which is contained within an information channel or a *physical signalling channel*.

## 228 meta-signalling

F: méta-signalisation

S: metaseñalización

The procedure for establishing, checking and releasing signalling virtual channels.

### 229 network node interface (NNI)

F: interface de nœud de réseau (NNI)

S: interfaz de nodo de red (INR)

The interface at a network node which is used to interconnect with another network node.

#### 230 packet

F: paquet

S: paquete

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

## packet transfer mode

F: mode de transfert par paquets

S: modo de transferencia paquete; modo de transferencia por paquetes

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

#### **Recommendation I.113**

## payload module

F: module de capacité utile

S: módulo de cabida útil

That portion of the information payload, of an interface, within which one or more channels entirely exist.

#### 233 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.

### 234 physical frame

F: trame physique

S: trama física

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

## 235 physical signalling channel

F: canal 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.

#### positioned channel

F: canal positionné

S: canal ubicado; canal identificado por su posición

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

#### 237 positioned interface structure

F: structure d'interface positionnée

S: estructura de interfaz de canales ubicados

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

### 238 selective broadcast signalling virtual channel

F: canal virtuel de diffusion sélective de la signalisation

S: canal virtual de señalización de difusión selectiva

A virtual channel allocated to a service profile and used for broadcast signalling.

## 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.

#### 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.

## 241 signalling virtual channel

F: canal virtuel de signalisation

S: canal virtual de señalización

A virtual channel for transporting signalling information.

#### 242 statistical; ATM statistical

F: statistique; ATM statistique

S: estadístico; MTA estadístico

A mode of the *asynchronous transfer mode* in which the information transfer capacity specified for a given service provided to the user throughout a call is expressed in terms of values of parameters such as mean, peak and standard deviation.

#### 243 synchronous time division multiplexing

F: multiplexage temporel synchrone

S: multiplexación síncrona por división en el tiempo; multiplicación temporal síncrona

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

#### 244 synchronous transfer mode (STM)

F: mode de transfert synchrone (STM)

S: modo de transferencia síncrono (MTS)

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

#### 245 throughput

F: charge 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.

#### 246 transfer mode

F: mode de transfert

S: modo de transferencia

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

### 247 transit delay

F: délai de transit

S: retardo de tránsito

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.

#### 248 usage parameter control

F: contrôle des paramètres d'utilisation

S: control de los parámetros de utilización

The taking of appropriate action if usage monitoring establishes that the negotiated values of the information transfer parameters of a virtual channel or a virtual path are exceeded.

#### valid cell

F: cellule valide

S: célula válida

A cell where the header is declared by the header error control process to be free of errors.

#### virtual channel (VC)

F: canal virtuel (VC)

S: canal virtual (CV)

A concept used to describe unidirectional transport of ATM cells associated by a common unique identifier value.

#### virtual channel connection

F: connexion de canal virtuel

S: conexión de canal virtual

A concatenation of virtual channel links that extends between two points where the adaptation layer is accessed.

## virtual channel link

F: liaison de canal virtuel

S: enlace de canal virtual

A mean of unidirectional transport of ATM cells between a point where a virtual channel identifier value is assigned and the point where that value is translated or removed.

### virtual path (VP)

F: trajet virtuel (VP)

S: trayecto virtual (TYV)

A concept used to describe unidirectional transport of ATM cells belonging to virtual channels that are associated by a common identifier value.

### virtual path connection

F: connexion de trajet virtuel

S: conexión de trayecto virtual

A concatenation of virtual path links that extends between the point where the virtual channel identifier values are assigned and the point where those values are translated or removed.

## virtual path link

F: liaison de trajet virtuel

S: enlace de trayecto virtual

The group of virtual channel links, identified by a common value of the virtual path identifier, between the point where the VPI value is assigned and the point where the VPI value is translated or removed.

## ANNEX A

## (to Recommendation I.113)

## 

201	asynchronous time-division multiplexing
202	asynchronous transfer mode
203	block
204	block payload
101	broadband [wideband]
205	broadband access
206	broadband communication channel
102	broadcast
207	cell
208	cell delineation
209	circuit transfer mode
210	connection admission control
103	connectionless service
104	constant bit rate service
105	contribution; contribution application
106	conversational service
211	deterministic; ATM deterministic
108	distribution service
109	distribution service with user individual presentation control
110	distribution service without user individual presentation control
107	distribution; distribution application
111	enhanced-quality television
112	existing-quality television
212	frame
213	frame interface
214	general broadcast signalling virtual channel
215	header; cell header
216	hybrid interface structure
217	information payload capacity

<sup>1)</sup> The number against a term indicates its location in the vocabulary.

113 interactive service 218 interface overhead 219 interface payload 220 interface rate; interface bit rate 221 invalid cell 222 labelled channel 223 labelled deterministic channel 224 labelled interface structure 225 labelled multiplexing 226 labelled statistical channel 227 logical signalling channel 114 messaging service 228 meta-signalling 115 mixed document 116 multimedia service 117 multipoint 229 network node interface 230 packet 231 packet transfer mode 232 payload module 233 periodic frame 234 physical frame physical signalling channel 235 236 positioned channel 237 positioned interface structure 118 post-production processing 119 retrieval service selective broadcast signalling virtual channel 238 239 self-delineating block 240 self-delineating labelled interface 120 service bit rate 241 signalling virtual channel 121 sound retrieval service 242 statistical; ATM statistical 243 synchronous time division multiplexing

244	synchronous transfer mode
245	throughput
246	transfer mode
247	transit delay
248	usage parameter control
249	valid cell
122	variable bit rate service
123	videomessaging
250	virtual channel
251	virtual channel connection
252	virtual channel link
253	virtual path
254	virtual path connection
255	virtual path link

#### ANNEX B

## (to Recommendation I.113)

### List of abbreviations used in B-ISDN Recommendations

AAL ATM Adaptation Layer

AAL-PCI AAL protocol control information

AAL-SDU AAL service data unit

ACE Access connection element

AIS Alarm indication signal

AL Access Link

ATM Asynchronous transfer mode

ATM-SDU ATM service data unit

AU Administrative unit

B-ISDN Broadband aspects of integrated services digital network

B-ISDN PRM Protocol reference model of the broadband aspects of ISDN

B-ISPBX Private branch exchange for B-ISDN

B-NT Network termination for B-ISDN

B-NT1 Network termination 1 for B-ISDN

B-NT2 Network termination 2 for B-ISDN

B-TA Terminal adaptor for B-ISDN

B-TE Terminal equipment for B-ISDN

BER Bit error ratio

BIP Bit interleaved parity
BOM Beginning of message

C-n Container-n

CAD-CAM Computer aided design/computer aided manufacturing

CAMC Customer access maintenance centre

CBR Constant bit rate

CE Connection element

CEQ Customer equipment

CIME Customer installation manintenance entities

CL Connectionless

CLP Cell loss priority

CLSF Connectionless service function

CMI Coded mark inversion

CN Customer network

COH Connection overhead

COM Continuation of message

CON Concentrator

CRC Cyclic redundancy check

CRF Connection related function

CRF(VC) Virtual channel connection related function

CRF(VP) Virtual path connection related function

CS Convergence sublayer

CS-PDU Convergence sublayer protocol data unit

DPL Primary link for distribution services

DS Digital section
EOM End of message

ET Exchange termination

FDDI Fibre distributed data interface

FEBE Far end blok error

FERF Far end receive failure
GFC Generic flow control

HDLC High-level data link control

HDTV High definition television

HEC Header error control

HLF Higher layer function

IPL Primary link for interactive services

IRP Internal reference point

IT Information type

LAN Local area network

LE Local exchange

LFC Local function capabilities

LI Length indicator

LT Line termination

MA Medium adaptor

MAN Metropolitan area network

MCD Maintenance cell description

MID Multiplexing identification

MSB Most significant bit

MSP Maintenance service provider

MUX Multiplexor

NNI Network-node interface

NP Network performance

NT Network termination

OAM Operation and maintenance

OAMC Operation, administration and maintenance centre

OSI Open systems interconnection

PCI Protocol control information

PDH Plesiochronous digital hierarchy

PDU Protocol data unit

PL Physical layer

PL-OAM Physical layer-operation and maintenance (cell)

PLK Primary link

PM Physical medium (sublayer)

POH Path overhead

PON Passive optical network

PRM Protocol reference model

PT Payload type

PTR Pointer

QOS Quality of service

RAI Remote alarm indication

RES Reserved

RG Regenerator

RPOA Recognized private operating agency

RS Regenerator section

RU Remote unit

SAP Service access point

SAR Segmentation and reassembly sublayer

SDH Synchronous digital hierarchy

SDU Service data unit

SFET Synchronous frequency encoding technique

SN Sequence number

SN Sequence number protection

SOH Section overhead

SP Service provider

SPL Service provider link

SPN Subscriber premises network

SSM Single segment message

ST Segment type

STM Synchronous transfer mode

STM-n Synchronous transport module-n

SVC Signalling virtual channel

TA Terminal adaptor

TC Transmission convergence sublayer

TCE Transit connection element

TCRF Transit connection related function

TE Terminal equipment

TMN Telecommunication management network

TPE Transmission path endpoint

UNI User-network interface

VBR Variable bit rate

VC Virtual channel VC Virtual container-n VCC Virtual channel connection VCCE Virtual channel connection endpoint VCI Virtual channel identifier VP Virtual path VPC Virtual path connection **VPCE** Virtual path connection endpoint

Virtual path identifier

VPI