

Recommendation

ITU-T J.1 (01/2024)

SERIES J: Cable networks and transmission of television,
sound programme and other multimedia signals

General Recommendations

Terms, definitions and acronyms for television and sound transmission and integrated broadband cable networks

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Recommendation ITU-T J.1

Terms, definitions and acronyms for television and sound transmission and integrated broadband cable networks

Summary

Recommendation ITU-T J.1 compiles all the definitions related to television and sound transmission, and integrated broadband cable networks, and which are in force in J-series and N-series Recommendations developed under the responsibility of ITU-T SG9. The Recommendation is regularly updated to reflect newly-approved terms and definitions.

History *

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Abbreviations, acronyms, definitions, J-series, N-series, terms.

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FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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Introduction

In the pursuit of its work aimed towards the standardization of the transmission of television and sound transmission and integrated broadband cable networks, ITU-T has often found it necessary to develop new terminology, or to adapt it from current technical parlance.

This continuing work has resulted in a small glossary of terms, acronyms and definitions that is specific to that area of activity, and that should desirably find wide recognition and application.

The purpose of this Recommendation is to formalize this small glossary of terms, acronyms and definitions, and to recommend its use in all the texts that address the services and technologies listed above.

It is expected that the glossary will continue to gradually grow over the years, as new terms are developed or adapted.

The ITU also maintains a terms and definitions database which is available online, see [b-ITU DB].

NOTE – This Version 3 of the J.1, approved on 29 October 2022 includes the terms and definitions related to SG9 scope of all Recommendations approved until May 2022.

Recommendation ITU-T J.1

Terms, definitions and acronyms for television and sound transmission and integrated broadband cable networks

1 Scope

This Recommendation provides a collection of terms, definitions and acronyms, which were defined by ITU-T SG9 in clause 3.2 of J-series Recommendations, compiled from in force ITU-T Recommendations related to television and sound transmission, and integrated broadband cable networks.

2 References

None.

3 Definitions

3.1 Terms defined elsewhere

Clause 6 contains the terms and definitions which were defined by ITU-T SG9 in clause 3.2 of J-series Recommendation.

This Recommendation does not collect the terms and definitions which were developed in other Recommendations or standards, and that were adopted by ITU-T SG9 in clause 3.1 of J-series Recommendations.

3.2 Terms defined in this Recommendation

Not applicable.

4 Abbreviations and acronyms

Clause 7 contains the abbreviations and acronyms compiled by this Recommendation.

5 Conventions

None.

6 Terms for television and sound transmission, and integrated broadband cable networks

The following definitions are contained in in-force ITU-T Recommendations related to television transmission, sound transmission and integrated broadband cable networks.

2-way authenticated communication channels [b-ITU-T J.292]: These channels are used for renewable conditional access key management, remote management of SVD, downloadable firmware updates, private interactive application data, and reconfiguration of encryption algorithms between the headend and an SVD.

2-way communication channel [b-ITU-T J.193]: An IP-based communications link between a NG-STB and the cable network service management system, for the purpose of service management communications.

2T pulse/bar ratio error [b-ITU-T J.64]: The 2T sine-squared pulse/bar ratio error is defined as the difference between the amplitudes of the 2T pulse (element B_1) and the luminance bar (element B_2), expressed as a percentage of the luminance bar amplitude. The peak amplitude of the 2T pulse is referred to a reference point b_1 (see Note) (Figs. 1 and 2 of ITU-T J.64) before the first riser of the staircase. The sign of the difference is positive if the 2T pulse amplitude is greater than the luminance bar amplitude.

NOTE – To avoid error due to line tilt, it may be preferable to use a reference point exclusively for the measurement of 2T pulse/bar ratio error, which is defined to be the linear mean level of the insertion test signal during the periods: 2 to 1 μ s before, and 1 to 2 μ s after the 2T pulse.

4K UHDTV [b-ITU-T J.297]: Supports $3,840 \times 2,160$ resolution and 60 p frame frequency specified in [b-ITU-R BT.2020].

4K video [b-ITU-T J.482], [b-ITU-T J.483]: A video that supports $3,840 \times 2,160$ resolution and ~60 p frame frequency.

A/V [b-ITU-T J.117]: Audio and Video.

access control [b-ITU-T J.170]: Limiting the flow of information from the resources of a system only to authorized persons, programs, processes or other system resources on a network.

access control [b-ITU-T J.223.1]: Access control is used to control the cable modems (CMs) defined in this document to access networks. It is a process for connecting cable media converters (CMCs) and controlling data communication.

access network interface [b-ITU-T J.294]: The logical interface between the wide area network (WAN) (i.e., access network) and the residential gateway (RG).

access node [b-ITU-T J.190]: As used in this Recommendation, an access node is a termination device that terminates the network end of an access network connection. The access node is technology specific; for example, in Annex A of [b-ITU-T J.112] it is called the INA while in Annexes B and C it is the CMTS.

access unit [b-ITU-T J.89], [b-ITU-T J.187]: A coded representation of a presentation unit. In the case of audio, an access unit is the coded representation of an audio frame. In the case of video, an access unit includes all the coded data for a picture, and any stuffing that follows it, up to, but not including, the start of the next access unit. If a picture is not preceded by a `group_start_code` or a `sequence_header_code`, the access unit begins with the `picture_start_code`. If a picture is preceded by a `group_start_code` and/or a `sequence_header_code`, the access unit begins with the first byte of the first of these start codes. If it is the last picture preceding a `sequence_end_code` in the bitstream, all bytes between the last byte of the coded picture and the `sequence_end_code` (including the `sequence_end_code`) belong to the access unit.

access unit [b-ITU-T J.181 Amendment 1], [b-ITU-T J.189]: The coded representation of a video picture or an audio frame [b-ITU-T H.222.0].

accounting [b-ITU-T J.363], [b-ITU-T J.460.3]: The process of collecting usage data.

acknowledge data [b-ITU-T J.285]: Transfer control data transmitted by a receiver as an affirmative response to the sender. The acknowledge data is included in the synchronization packet.

active [b-ITU-T J.177], [b-ITU-T J.178], [b-ITU-T J.361]: A service flow is said to be "active" when it is permitted to forward data packets. A service flow must first be admitted before it is active.

active call/active session [b-ITU-T J.460.1]: A call state where the called party has answered the call and two-way media is being exchanged.

active codes [b-ITU-T J.222.1], [b-ITU-T J.222.2]: The set of spreading codes which carry information in an S-CDMA upstream. The complementary set, the unused codes, are idle and are not transmitted. Reducing the number of active codes below the maximum value of 128 may provide advantages including more robust operation in the presence of coloured noise.

active service flow [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: An admitted service flow from the CM to the CMTS which is available for packet transmission.

adaptive quantizer [b-ITU-T J.88]: A quantizer in which the step size is controlled by the chosen slice type, the buffer occupancy and a model of human vision.

adaptive scanning [b-ITU-T J.88]: A approach that selects the optimal pattern to scan the two-dimensional array of transform coefficient, in order to minimize the number of coefficients scanned up to the end of the block.

address learning [b-ITU-T J.195.1]: A process that establishes the mapping between higher layer protocol data unit (PDU) addresses and high performance network over coax (HiNoC) node addresses.

address resolution protocol (ARP) [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: A protocol of the IETF for converting network addresses to 48-bit Ethernet addresses.

ADM interface [b-ITU-T J.380.3]: The ADM to ADS message communication link defined by [b-ITU-T J.380.3].

admitted [b-ITU-T J.178]: A service flow is said to be "admitted" when the CMTS has reserved resources (e.g., bandwidth) for it on the DOCSIS network.

admitted service flow [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: A service flow, either provisioned or dynamically signalled, which is authorized and for which resources have been reserved but is not active.

advanced audio coding (AAC) (based on [b-ISO/IEC 13818-7]) [b-ITU-T J.296]: An audio coding system standardized by the International Organization for Standardization.

advanced digital cable transmission technology (ACTT) [b-ITU-T J.381]: Advanced digital cable transmission technology on the physical layer, which includes modulation, channel coding, transmission schemes and frame structure to provide higher spectral efficiency.

advanced query [b-ITU-T J.380.8]: The "Advanced Query" interface defined by [ITU-T J.380.8] permits the consumer of a logical service implementation derived from J.380.8 to use an advanced query language to formulate queries against a logical service's data model.

advanced security [b-ITU-T J.1011]: Function of an ECI compliant CPE which provides enhanced security functions (hardware and software) for an ECI client. Note that the details are specified in [b-ETSI GS ECI 001-5].

advanced security system (AS System) [b-ITU-T J.1012], [b-ITU-T J.1014]: A function of an ECI compliant CPE, which provides enhanced security functions (hardware and software) for an ECI client.

advanced query filter [b-ITU-T J.380.8]: An "Advanced Query Filter" is a collection of free form data items that individually represent complete query terms for a given query language. The individual terms are additively applied (ANDed) together during a query operation against a specific service data model, which results in the identification of a collection of objects contained within the data store.

advanced query language [b-ITU-T J.380.8]: As used in this document, the term "Advanced Query Language" refers to any language used to formulate queries against a logical service's data model using the advanced query interface. XPath and XQuery are both examples of an advanced query language.

advertisement (also called "ad") [b-ITU-T J.181]: An inducement to buy or patronize. As used in the cable industry, usually with a duration under 2 minutes (sometimes called "short-form" content).

aggregation and forwarding [b-ITU-T J.223.1]: An aggregation network device, such as a passive optical network (PON) optical line terminal (OLT), a router, or a switch, receives data from CMCs and forwards the data to different uplinks for transmission based on the preset QoS priorities.

alarm indication signal [b-ITU-T J.214]: Also known as the blue alarm. When no incoming signal is detected, a CSU/DSU transmits an unframed all-ones pattern to the network to maintain synchronization and announce its presence to the network.

algorithm [b-ITU-T J.93], [b-ITU-T J.95]: A mathematical process which can be used for the scrambling and descrambling of a data stream.

alignment signal (AS) [b-ITU-T J.27]: Sine-wave signal at 1 kHz (See Note) at a level of 0 dBm0s, which is used to align the international sound programme connection.

NOTE – This frequency is nominal, and 1020 Hz recommended by CCITT Recommendation O.33 may be used.

allocate [b-ITU-T J.117]: The process of acquiring the resources, the address and other parameters of a plug for the purpose of establishing an asynchronous connection data transfer capability.

allocation [b-ITU-T J.222.1], [b-ITU-T J.122]: A group of contiguous mini-slots in a MAP which constitutes a single transmit opportunity.

all-ones level [b-ITU-T J.101]: The all-ones level is the level resulting from a continuous stream of "one" pulses. For measuring purposes the all-ones level is defined as twice the mean value of clock run-in minus the all-zeros level.

all-zeros level [b-ITU-T J.101]: The all-zeros level is the level resulting from a continuous stream of "zero" pulses. For measuring purposes the all-zeros level is defined as the mean level of the back porch within the nominal duration of the colour burst.

amplitude error of the burst at n MHz (see Note) [b-ITU-T J.64]: This quantity is defined as the difference in terms of magnitude and sign between the peak-to-peak amplitude of the burst at n MHz and the reference quantity A_0 (defined as above), expressed as a percentage of A_0 .

NOTE – n is the designation of the frequency of the burst taken into account. Note 1 of § 2.20.1 also applies here.

analogue cue tone [b-ITU-T J.181 Amendment 1]: In an analogue system, a signal which is usually either a sequence of DTMF tones or a contact closure that denotes to ad insertion equipment that an advertisement avail is about to begin or end.

analogue protection system bits (APS bits) [b-ITU-T J.197]: Bits 3 and 2 of the CCI, designating the state of analogue protection for a set top box.

announcement server [b-ITU-T J.178]: An announcement server plays informational announcements in the IPCablecom network. Announcements are needed for communications that do not complete and to provide enhanced information services to the user.

announcement servers [b-ITU-T J.175]: Also known as Audio Servers, Announcement Servers are network components that manage and play informational tones and messages in response to events that occur in the network. Most announcements are media streams that originate from servers in the network. Some simple tones and short announcements can also reside at the MTA and in the MG.

anomalous frame repetition [b-ITU-T J.246], [b-ITU-T J.247]: An event where the HRC outputs a single frame repeatedly in response to an unusual or out of the ordinary event. Anomalous frame repetition includes but is not limited to the following types of events: an error in the transmission channel, a change in the delay through the transmission channel, limited computer resources impacting the decoder's performance, and limited computer resources impacting the display of the video signal.

API connection [b-ITU-T J.280]: A TCP/IP socket connection between a server and a splicer for transferring API messages.

API connection [b-ITU-T J.287]: A communications connection between an automation system and an injector for transferring API messages.

API gateway [b-ITU-T J.1302 Cor. 1]: The proxy which sits between clients and services, routing requests from clients to services, performing various cross-cutting tasks such as authentication, TLS termination, and rate limiting, etc. in microservices architecture.

API lifecycle management [b-ITU-T J.1306]: Set of functions required to manage the instantiation, maintenance and termination of an application programming interface instance.

application [b-ITU-T J.205]: Any active DTV service content aimed at end-user interaction.

application [b-ITU-T J.200]: Information that expresses a specific set of observable behaviour.

application [b-ITU-T J.215]: An application is a functional implementation realized as software running in one or spread over several interplaying hardware entities.

application catalogue [b-ITU-T J.205]: Data structure listing available applications (interactive content). This data structure is local to the IBB DTV receiver, and describes the IBB applications installed on the IBB DTV receiver.

application catalogue user interface [b-ITU-T J.205]: A user interface functionality over the IBB DTV receiver, intended to allow the end user to browse the available applications in the application catalogue or to query application catalogues exposed by application repositories. Also, it lists applications that are currently available in the selected IBB DTV service or broadcast DTV service.

application component [b-ITU-T J.205]: A block of data that forms part of an application. Application component types are: code, resources, meta-data, control and user settings.

application component delivery mechanism [b-ITU-T J.205]: A mechanism, channel or medium used to deliver application components to an IBB DTV receiver.

application control data structure [b-ITU-T J.205 Cor. 2]: Data structures transmitted within the integrated broadcast and broadband (IBB) DTV service to control IBB applications (e.g., AIT in [b-GINGA Data Transmission], [b-MHP]).

application descriptor file [b-ITU-T J.206]: A file containing metadata information for an application.

application entity [b-ITU-T J.200]: A unit of information that expresses some portion of an application.

application environment (environment) [b-ITU-T J.200]: The context or software environment in which an application is processed.

application ID [b-ITU-T J.128]: This is a 16-bit field indicating a numeric ID for an application running on the Set-top Device. The Application ID is typically assigned through a Source Name Sub-table (SNS) from [b-ITU-T J.94] carried in the Broadcast DSG Tunnel.

application ID [b-ITU-T J.290]: This is a field indicating a numeric ID for an application running on the set-top device.

application install package [b-ITU-T J.205]: Application delivery mechanism in which several application components are bundled together in a single file.

application manager [b-ITU-T J.365]: A system that interfaces to Policy Server(s) for requesting QoS based service on behalf of an end-user or network management system.

application program interface (API) [b-ITU-T J.215]: An application program interface is the software interface to system services or software libraries. An API can consist of classes, function calls, subroutine calls, descriptive tags, etc.

application programming interface (API) [b-ITU-T J.200]: Software libraries that provide uniform access to system services.

application repository [b-ITU-T J.205]: Entity, reachable through the broadband channel, that provides access to integrated broadcast and broadband (IBB) applications contained in it. These IBB applications can be downloaded and installed on the IBB DTV receiver, manually, by the end user, or, in case of being signalled within an IBB DTV service, launched or installed automatically under the IBB DTV service's control using the IBB application control mechanism. An application repository can be managed by IBB service providers, IBB DTV receiver manufacturers, or other third party entities.

application resource [b-ITU-T J.200]: A bit-stream serialization (a physical embodiment) of an application entity.

application resource collection [b-ITU-T J.200]: The set of application resources that embody an application entity collection.

application usage [b-ITU-T J.367]: Detailed information on the interaction of an application with the XCAP server.

application-free EPG [b-ITU-T J.90]: An EPG in which the provider can freely select the content and the layout of the presentation, in a way that is implemented by the consumer television/multimedia display.

AS-API [b-ITU-T J.1014]: Application programming interface between the **ECI client** and its **ECI host** permitting the **ECI client** to exchange information with and perform operations on its **AS slot**.

AS slot [b-ITU-T J.1012] [b-ITU-T J.1014]: Resources of the Advanced Security block provided exclusively to an **ECI client** by the **ECI host**.

AS slot session [b-ITU-T J.1012]: Resources and computing in an **AS slot** related to the de-cryption or re-encryption of a content element.

Aq [b-ITU-T J.148]: Objective measurement of audio quality.

Aq(Vq) [b-ITU-T J.148]: Objective measurement of audio quality, accounting for the influence of video quality.

area availability code [b-ITU-T J.90]: A code used to denote that part of the area covered by a programme distribution service, to which a specific programme should be distributed.

area code table (ACT) [b-ITU-T J.1210]: The basic table in an IP video broadcast (IPVB) headend that is used to describe the regional identification of centre offices.

assured capabilities [b-ITU-T J.260]: Capabilities providing high confidence or certainty that critical telecommunications are available and perform reliably.

asynchronous connection [b-ITU-T J.117]: A point-to-point communication path established between a producer node and a consumer node, that supports robust high-bandwidth flow-controlled transfers of one or more data frames.

asynchronous push [b-ITU-T J.117]: A method of data delivery in which the node producing the data uses 1394 write transactions to deposit data into the address space of a consumer node.

asynchronous rendering [b-ITU-T J.1631]: The rendering on the VR terminal attempts to catch up with the actual rendering on the server or host PC.

asynchronous time division multiple access (A-TDMA) [b-ITU-T J.291]: A variant on the protocol for wireless communication, used in DOCSIS 2.0.

asynchronous transfer mode (ATM) [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: A protocol for the transmission of a variety of digital signals using uniform 53-byte cells.

A-TDMA [b-ITU-T J.122]: DOCS 2.0 TDMA mode (as distinguished from DOCS 1.x TDMA).

attach [b-ITU-T J.117]: The process of communicating the address and other parameters of a plug to another plug for the purpose of establishing data transfer capability.

attribute [b-ITU-T J.164]: An Event Message Attribute is a predefined data element described by an attribute definition and attribute type.

audience [b-ITU-T J.380.6]: The term "audience" is used to refer to a collection of one or more subscribers. A logical service that implements the SIS interface described in this document may often provide profile information about an audience. For example, a logical service may provide information about one or more audiences within a linear advertising zone rather than information about individual subscribers.

audience measurement [b-ITU-T J.296]: The measurement of user viewing conditions, records of viewing, recording, playing, and manipulation, based on data collected with the permission of users for improvement of personalized services.

audience measurement functions [b-ITU-T J.296]: The functions that, when given permission, measure end-user behaviour by processing events or samples from cable TV services. Such functions may request and collect end-user information. They transfer processed events, samples, and end-user information to aggregation functions.

audience rating [b-ITU-T J.482], [b-ITU-T J.483]: An index that shows what percentage of video content provided by the cable operator is being watched by subscribers.

audience satisfaction degree [b-ITU-T J.483]: The index that is used to determine the necessity of switching the quality and the distribution scheme for each video content.

audio interchange file format (AIFF) (based on [b-DAVIC 1.4.1]) [b-ITU-T J.296]: The audio interchange file format is defined in [b-DAVIC 1.4.1] Specification Part 9 Annex B; it is the file format for audio encoding of pulse code modulation (PCM).

audio server [b-ITU-T J.170], [b-ITU-T J.161]: An audio server plays informational announcements in IPCablecom network. Media announcements are needed for communications that do not complete and to provide enhanced information services to the user. The component parts of Audio Server services are Media Players and Media Player Controllers.

augmentation region [b-ITU-T J.301]: The targeted area to augment any object or region in a TV scene. It provides the parameters of a static or animated 2D region related to natural media.

augmentation time [b-ITU-T J.301]: The appointed time to augment any object or region in a TV scene. It provides the parameters of start presentation time and time duration for augmented content.

augmented broadcast provider [b-ITU-T J.301]: A broadcaster who provides augmented broadcasting services, or an entity allowed to develop and provide augmented broadcasting service as a broadcast provider.

augmented broadcasting [b-ITU-T J.301]: Broadcasting service or programme to realize augmented reality smart television (AR-STV).

augmented broadcasting metadata [b-ITU-T J.301]: Formatted data describing augmented content.

augmented content [b-ITU-T J.301]: A binary object, such as 2D images, 3D animated models or audio/video streaming files, to be augmented into a predefined augmentation region.

augmented content provider [b-ITU-T J.301]: An entity allowed to develop and provide augmented content.

augmented reality (AR) [b-ITU-T J.301]: A type of mixed reality where graphical elements are integrated into the real world in order to enhance user experience and enrich information.

augmented reality smart television (AR-STV) [b-ITU-T J.301]: AR-based TV broadcasting service to implement the mixed content of a broadcast programme and augmented object at a targeted position and time in real time on a receiving terminal such as a TV or set-top box.

authentication [b-ITU-T J.260]: The act or method used to verify a claimed identity.

authentication [b-ITU-T J.93], [b-ITU-T J.95]: The process intended to allow the system to check with certainty the identification of a party.

authentication [b-ITU-T J.361]: The act of giving access to a service or device if one has permission to have the access.

authentication [b-ITU-T J.170], [b-ITU-T J.178]: The process of verifying the claimed identity of an entity to another entity.

authentication mechanism [b-ITU-T J.1014]: **Key ladder block** function as defined in [ITU-T J.1015] that permits an **AS slot** to provide secure key applications for purposes other than content decryption and encryption, like authentication.

authenticity [b-ITU-T J.170]: The ability to ensure that the given information is without modification or forgery and was in fact produced by the entity that claims to have given the \on.

authorization [b-ITU-T J.170], [b-ITU-T J.178]: The act of giving access to a service or device if one has the permission to have the access.

authorization [b-ITU-T J.260]: The act of determining if a particular privilege, such as access to telecommunications resources, can be granted to the presenter of a particular credential.

authorization centre (AC) [b-ITU-T J.1001]: An entity which issues identification information of the conditional access module (CAM) and performs the authentication process when the CAM requests renewal of the conditional access client software.

authorization centre (AC) [b-ITU-T J.1002]: An entity which issues identification information of CAM and performs authentication process when CAM requests renewing of CACS.

authorization coding [b-ITU-T J.93], [b-ITU-T J.95]: A digital word that describes the personality or service access capability of the subscriber decoder unit.

NOTE – This code word, which is based on the service access authorized by the billing system, determines which keys are distributed to each customer, and is required at the subscriber decoder to authorize the descrambling of any specific program.

authorization module [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: An abstract module that the CMTS can contact to authorize service flows and classifiers. The authorization module tells the CMTS whether the requesting CM is authorized for the resources it is requesting.

authorized collector [b-ITU-T J.204]: An Event Tracking API-compliant server that implements the receiving side of the IPDR Streaming Protocol, and which has been authorized to participate in the overall Collection System.

authorized IBB application provider [b-ITU-T J.205]: An entity allowed to develop and provide integrated broadcast and broadband (IBB) applications within a given implementation of an IBB digital television (DTV) system.

authorized output domain (AOD) [b-ITU-T J.290]: The devices in this domain are connected to the ASD using operator-approved output interfaces.

authorized service domain (ASD) [b-ITU-T J.290]: The devices in this domain are able to authenticate themselves and support content usage rights as defined by the network operator.

automatic location identification (ALI) [b-ITU-T J.460.1]: The database that maps telephone number to location in the current 9-1-1 system.

automatic number identification (ANI) [b-ITU-T J.460.1]: The mechanism used to determine the telephone number of the caller.

automation system [b-ITU-T J.287]: A control system for a program origination facility which controls operation of the production facilities and devices.

avail [b-ITU-T J.181 Amendment 1], [b-ITU-T J.287]: Time space provided to cable operators by cable programming services during a program for use by the community antenna television (CATV) operator; the time is usually sold to local advertisers or used for channel self-promotion.

availability [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: In cable television systems, availability is the long-term ratio of the actual RF channel operation time to scheduled RF channel operation time (expressed as a percent value) and is based on a bit error rate (BER) assumption.

available sub-carrier [b-ITU-T J.195.2]: Sub-carriers of OFDM symbol for data bearing.

AVC [b-ITU-T J.181 Amendment 1]: Abbreviation for "Advanced Video Coding" and refers specifically to video compression standardized in [b-ITU-T H.264].

backoff [b-ITU-T J.287]: A mechanism, commonly used in data communications, to randomize the interval between retries.

back-to-back insertion [b-ITU-T J.280]: Insertion of two or more temporally contiguous sessions without returning to the primary channel between sessions.

bandwidth allocation map [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122], [b-ITU-T J.222.1]: The MAC management message that the CMTS uses to allocate transmission opportunities to cable modems.

bandwidth efficiency (BWE) [b-ITU-T J.141]: The data capacity that can be transmitted through the channel. It is expressed in terms of the amount of data transmitted through the unit of bandwidth per unit of time (bits/s/Hz).

bar tilt [b-ITU-T J.64]: The luminance bar tilt is defined as the difference between the level of the luminance bar one microsecond after the half amplitude point of its leading edge, and the level one microsecond before the half amplitude point of its trailing edge expressed as a percentage of the luminance bar amplitude. The sign of the difference is positive if b_4 is higher than b_3 . (See more details in Figs. 1 and 2 of [b-ITU-T J.64]).

NOTE – The parameter bar tilt as defined above is a unique measurement by automatic devices of a specific form of line time waveform distortion, i.e., the difference in the level of the line bar at two specific reference points. This measurement is different to the measurements of line time waveform distortion described in Recommendation 567 (§ C.3.5.1.3 and Annex III to Part C, § 2.1) where the maximum difference in level at any point between defined reference points is measured.

base-line distortion [b-ITU-T J.64]: The base-line distortion is defined as the difference between the levels of the signal at point b_7 , which is located after the mid-amplitude point of the trailing edge of the bar (element B_2) at a distance of 400 ns for 625-line systems and 500 ns for 525-line systems (see Figs. 1 and 2 of ITU-T J.64), and at a reference point b_1 located before the beginning of the staircase in line 17. (See more details in Figs. 1 and 2 of ITU-T J.64).

The base-line distortion is expressed as a percentage of the luminance bar amplitude. It is to be measured after the bandwidth of the signal has been limited (see Note). The sign of the difference is positive if the signal level at point b_7 is higher than the level of reference point b_1 .

NOTE – Limitation may be achieved by the use of a network, the design of which is based on "Solution 3" [b-Thomson, 1952], having its first zero at 3.3 MHz, or by an equivalent technique.

basic [b-ITU-T J.287]: A category of request or response operation supported by this API.

basic amplitude [b-ITU-T J.101]: The basic amplitude is the difference between the all-ones level and the all-zeros level.

basic amplitude error [b-ITU-T J.101]: This parameter is defined as the difference between the basic amplitude and the nominal teletext signal amplitude expressed as a percentage of the latter. For mathematical notation, see [b-ITU-T J.101].

basic query [b-ITU-T J.380.8]: To obtain information from a logical service implementation derived from [b-ITU-T J.380.8], a logical service consumer issues a "query" against the data. The "Basic Query" interface is based on an exchange of name/value pairs, referred to as qualifiers, and requires no specialized knowledge of advanced query languages such as XQuery.

basic query filter [b-ITU-T J.380.8]: A "Basic Query Filter" is a collection of name and value pairs additively applied (ANDed) together during a basic query operation against a specific service data model, which results in the identification of a collection of objects contained within the data store.

BC-TD [b-ITU-T J.293]: A logical interface defined in clause 6.1.1 for content reception through a non-IP (RF-based) network.

best effort domain (BED) [b-ITU-T J.290]: Devices and physical layer segments not conforming to the requirements of ASD, AOD, GSD. The devices in this domain do not require content protection or guaranteed quality of service.

billing correlation ID (BCID) [b-ITU-T J.363]: A billing correlation ID (BCID) is an IP-Cablecom-defined term created for the multimedia session, which uniquely identifies the session within the IP-Cablecom Multimedia billing domain.

bit rate [b-ITU-T J.88], [b-ITU-T J.89]: The rate at which the compressed bit stream is delivered from the channel to the input of a decoder.

bit stream [b-ITU-T J.189]: MPEG-2 transport stream defined in Rec. ITU-T H.222.0 | ISO/IEC 13818-1.

bit stream format [b-ITU-T J.181]: An encoding of information resulting in a compliant MPEG-2 transport stream.

bit-error ratio [b-ITU-T J.67]: The bit-error ratio (BER) is defined as the ratio of the number of detected bit errors to the number of transmitted bits over a given period of time.

block [b-ITU-T J.88]: A unit of 8 pixels by 8 lines size for application of the Walsh Hadamart Transform.

bonded channel set [b-ITU-T J.222.2]: An identified set of upstream or downstream channels among which a stream of packets is distributed.

bonded channel(s) [b-ITU-T J.222.2]: One or more independent RF channels whose data packets are logically combined into one higher-speed data stream.

bonded channels [b-ITU-T J.212]: A logical channel comprising multiple individual channels.

bonding group [b-ITU-T J.222.2]: A list of channels providing a means to identify the specific channels bonded together. Sometimes referred to as a "Bonded Channel Group".

bootloader [b-ITU-T J.1026], [b-ITU-T J.1027], [b-ITU-T J.1028]: The program for initiating hardware and loading software after a receiver boots up.

BootRom [b-ITU-T J.1204]: A small read-only memory or write protected flash memory embedded in the chip. It contains the first boot code that the chip executes when powered on or reset.

bouquet [b-ITU-T J.180]: A collection of services multiplexed in a single data stream.

bouquet [b-ITU-T J.94]: A collection of services marketed as a single entity.

box [b-ITU-T J.123], [b-ITU-T J.124], [b-ITU-T J.94]: An object-oriented building block defined by a unique type identifier and length.

break [b-ITU-T J.181], [b-ITU-T J.181 Amendment 1]: Avail or an actual insertion in progress.

bridge protocol data unit (BDU) [b-ITU-T J.112], [b-ITU-T J.116], [b-ITU-T J.122]: Spanning tree protocol messages as defined in [b-ISO/IEC 15802-3].

bridge protocol data unit (BPDU) [b-ITU-T J.112 Annex B]: Spanning tree protocol messages as defined in [b-ISO/IEC 10038].

bridge protocol data unit (BPDU) [b-ITU-T J.112 Annex C]: Spanning tree protocol messages as defined in [b-RFC 1350].

bridged network [b-ITU-T J.213]: A set of IEEE 802 LANs interconnected by IEEE 802.1D MAC bridges.

bridging mode [b-ITU-T J.211]: A short-term operating condition of the DTI clock where the DTI client has recently lost its controlling input and is using stored data, acquired while in normal or fast mode operation, to control its output. While in bridging, the degree of deviation of the output is deemed to be such that DTI client clock is still performing within normal or acceptable limits. If an outage period persists, the DTI client clock will transition to the holdover mode indicating that the DTI client clock output may be degraded.

broadband cable modem [b-ITU-T J.193]: A cable modem built into the STB, which provides full Broadband access to the Internet, and is intended for customer use. In addition, cable services can be delivered via this broadband IP connection.

broadband channel [b-ITU-T J.205]: A medium used to deliver interactive content. Usually this medium is based on the Internet and allows the delivery of non-linear and on-demand content. A broadband channel allows access to servers that may be located in the Internet.

broadband IP network [b-ITU-T J.241]: Access IP telecommunications network offered by ADSL, ADSL2+, VDSL, Optical Access Network, etc.

broadcast [b-ITU-T J.215]: A broadcast is a service that is delivered to all customers. Each customer may select a particular broadcast channel out of many.

broadcast address [b-ITU-T J.112], [b-ITU-T J.116], [b-ITU-T J.122]: A predefined destination address that denotes the set of all data network service access points.

broadcast addresses [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C]: Predefined destination address that denotes the set of all data network service access points.

broadcast application [b-ITU-T J.215]: A broadcast application is an application running on the set-top converter that is loaded through in-band information, inserted either at the head-end or by a content provider farther upstream.

broadcast channel [b-ITU-T J.110]: A unidirectional, broadband, point-to-multipoint channel, which may include video, audio and data. The broadcast channel is established from the services provider to the users. It may include the forward interaction path.

broadcast channel [b-ITU-T J.205]: A medium used to deliver digital television (DTV) services. Examples: free to air, satellite and cable.

broadcast channel [b-ITU-T J.1211]: The broadcast channels in this Recommendation refer to the logical channels labelled with D-class IP addresses and UDP destination port numbers. Usually one channel corresponds to a digital TV transmission stream or service stream.

broadcast DTV service [b-ITU-T J.205]: Any digital television (DTV) service, delivered through a broadcast channel.

broadcast markup language (BML) standard [b-ITU-T J.200]: An XML [b-W3C XML] application language [b-ARIB STD B-24] that deals with tags and attributes for multimedia representation exclusively.

broadcast transport stream [b-ITU-T J.296]: The broadcast transport stream is composed of MPEG-2 transport stream (TS) signals, which have multi-frame architecture using the same frame length as the orthogonal frequency-division multiplexing (OFDM) frame.

broadcaster (service provider) [b-ITU-T J.94]: An organization which assembles a sequence of events or programmes to be delivered to the viewer based upon a schedule.

broadcasting organization [b-ITU-T N.1], [b-ITU-T N.51]: A broadcasting organization is an organization which is concerned with either or both sound and television broadcasting. Most of the customers ordering facilities for sound-programme and television transmission are broadcasting organizations. For convenience, the term broadcasting organization is used to denote the activity of any user or customer and, where so used, it is equally applicable to any other customer requiring sound-programme or television transmissions.

broadcasting organization (receive) [b-ITU-T N.1], [b-ITU-T J.13], [b-ITU-T N.51]: The broadcasting organization at the receiving end of the sound programme being transmitted over the international sound-programme connection.

broadcasting organization (send) [b-ITU-T N.1], [b-ITU-T J.13], [b-ITU-T N.51]: The broadcasting organization at the sending end of the sound programme being transmitted over the international sound-programme connection.

Brother [b-ITU-T J.1012], [b-ITU-T J.1014]: Other **Child** of the same **Father**.

NOTE – **Father**, **Children**, **Brother** refer to **Entities** that manage **Certificates**.

bslbf [b-ITU-T J.287]: Bit string, left bit first, where "left" is the order in which bit strings are written in the Recommendation. Bit strings are written as a string of 1s and 0s within single quote marks, e.g., '1000 0001'. Blanks within a bit string are for ease of reading and have no significance. (See [b-ITU-T H.222.0].)

burst [b-ITU-T J.122]: A single continuous RF signal from the upstream transmitter, from transmitter on to transmitter off.

burst error second [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: Any Errored Second containing at least 100 errors.

BWA BTS modem [b-ITU-T J.116]: Broadband wireless access base transceiver station modem. one or more downstream demodulators and their corresponding upstream modulators.

BWA CPE modem [b-ITU-T J.116]: Broadband wireless access customer premises equipment modem.

byte [b-ITU-T J.117]: 8 bits of data.

byte [b-ITU-T J.150]: A group of eight bits.

bytecode [b-ITU-T J.1013]: Code of **ECI client** (typically comprising a conditional access kernel or digital rights management client) that is executed by the virtual machine (VM).

C3 [b-ITU-T J.181 Amendment 1]: An audience measurement that is specified to include live viewing as well as DVR viewing up to 75 hours from the ad minute original broadcast time.

cable DTV service [b-ITU-T J.1201]: Any digital television (DTV) service, delivered through cable.

CA_system_ID [b-ITU-T J.128], [b-ITU-T J.290]: This is a 16-bit field indicating the type of CA system applicable for either the associated ECM and/or EMM streams. The CA_system_ID may be used as a DSG Client ID in DSG Advanced Mode.

CA_system_ID [b-ITU-T J.296]: The conditional access system identifier having a 16-bit field, which can identify the conditional access (CA) system.

cable billing [b-ITU-T J.1304]: A payment method provided by a cable operator. When cable billing is applied as a payment method for an OTT service, billing for the OTT service is processed through the cable operator.

cable integrated broadcast and broadband DTV service [b-ITU-T J.205]: An integrated broadcast and broadband digital television (DTV) service managed by cable operators.

cable log-in [b-ITU-T J.1304]: A logging-in process on a cable service entity with a cable subscriber identifier (ID) for the purpose of the request for cable billing and an OTT service use (if applicable).

cable modem [b-ITU-T J.160]: A cable modem is a layer two termination device that terminates the customer end of the DOCSIS connection.

cable modem [b-ITU-T J.162], [b-ITU-T J.163], [b-ITU-T J.164], [b-ITU-T J.166], [b-ITU-T J.167]: A cable modem is a layer two termination device that terminates the customer end of the J.112 (or J.122) connection.

cable modem [b-ITU-T J.171.1]: The delivery of high-speed data access to customer locations using equipment built in conformance with ITU-T Recs J.83 and J.112.

cable modem (CM) [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122], [b-ITU-T J.210], [b-ITU-T J.212]: A modulator-demodulator at subscriber locations intended for use in conveying data communications on a cable television system.

cable modem service group [b-ITU-T J.222.2]: In the HFC plant topology, the complete set of downstream and upstream channels within a single CMTS that a single Cable Modem could potentially receive or transmit on. In most HFC deployments, a CM-SG corresponds to a single Fibre Node. Usually, a CM-SG serves multiple CMs.

cable modem termination system (CMTS) [b-ITU-T J.161], [b-ITU-T J.365]: The device at a cable head-end which implements the DOCSIS RFI MAC protocol and connects to CMs over an HFC network.

cable modem termination system (CMTS) [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: Cable modem termination system, located at the cable television system headend or distribution hub, which provides complementary functionality to the cable modems to enable data connectivity to a wide-area network.

cable modem termination system (CMTS) [b-ITU-T J.291]: Located at the cable television system headend or distribution hub, which provides complementary functionality to the cable modems to enable data connectivity to a wide-area network.

cable modem termination system; network side interface (CMTS-NSI) [b-ITU-T J.112 Annex B], [b-ITU-T J.122]: The interface, defined in [b-DOCSIS3], between a CMTS and the equipment on its network side.

cable modem termination system; network side interface (CMTS-NSI) [b-ITU-T J.112 Annex C], The interface, defined in "DataOver-Cable Service Interface Specifications, Cable Modem Termination System Network Side Interface Specification, SP-CMTS-NSI-I01-960702", between a CMTS and the equipment on its network side.

cable modem termination system; network side interface (CMTS-NSI) [b-ITU-T J.112]: The interface, defined in [MCNS3], between a CMTS and the equipment on its network side (see Annex B). Called INA in Annex A and MC in Annex C.

cable modem to CPE interface (CMCI) [b-ITU-T J.112]: The interface, defined in [MCNS4], between a CM and CPE.

cable modem to CPE interface (CMCI) [b-ITU-T J.122]: The interface, defined in [DOCS4], between a CM and CPE.

cable modem to CPE interface (CMCI) [b-ITU-T J.112 Annex B]: The interface, defined in [DOCSIS4], between a CM and CPE.

cable modem to CPE interface (CMCI) [b-ITU-T J.112 Annex C]: The interface between a CM and CPE.

cable operator service entity [b-ITU-T J.1304]: A service entity that provides interfaces for users such as applications or web pages and those for an OTT service entity in order to process service collaboration.

cable platform [b-ITU-T J.295]: This refers to the entire provision infrastructure of the cable business, including the service delivery platform (SDP), cable network, hybrid cable set-top box, home network and others.

cable security portal (CSP) [b-ITU-T J.191]: A functional element that provides security management and translation functions between the HFC and the Home.

cable service cloud [b-ITU-T J.1303]: The cloud which provides converged media service.

cable television [b-ITU-T J.142]: Communications systems distributes broadcast and non-broadcast signals, as well as a multiplicity of satellite signals originating programming and other signals by means of coaxial cable and/or optical fibre.

cable television operator [b-ITU-T J.295]: A service provider and/or network provider providing television programmes and other interactive services, via a cable television network with radio frequency (RF) signals through coaxial cables or digital light pulses through fixed optical fibres.

CableHome [b-ITU-T J.126]: This is a Cable Television Laboratories, Inc. ("CableLabs") specification (see <http://www.cablelabs.com/projects/cablehome/>) for the interfaces necessary to extend high-quality cable-based services to network devices within the home. The CableHome project addresses issues such as device interoperability, QoS (Quality of Service), and network management. This term is also used for a system or device that is compliant with the CableHome specifications [b-ITU-T J.191] or [b-ITU-T J.192].

CableModem base specifications [b-ITU-T J.126]: There are currently four versions of what are in this Recommendation referred to as the CableModem Base Specifications. The original CableModem is specified in SCTE 22-1 2002: DOCSIS 1.0 Radio Frequency Interface and SCTE 22-3. SCTE 22-1

is J.112 (1998) with some corrections and minor additions. The second specification is J.112 with SCTE 23-3, the third specification is J.122 with SCTE 79-2, and the fourth specification is J.222.

call [b-ITU-T J.164]: A call is an instance of user-initiated voice communication capabilities. In traditional telephony, a call is generally considered as the establishment of connectivity directly between two points: originating party and terminating party. In the IP-Cablecom context, as noted above, the communication between the parties is "connectionless" in the traditional sense.

call management server (CMS) [b-ITU-T J.161]: Controls the audio connections. Also called a call agent in MGCP/SGCP terminology. This is one example of an application server.

call management server (CMS) [b-ITU-T J.191]: [IP-Cablecom] Controls the audio connections. Also called a Call Agent in MGCP/SGCP terminology.

callback [b-ITU-T J.460.1]: When a PSAP initiates a new call back to a caller. This is not the same as ringback. See below.

CAM_ID [b-ITU-T J.1004]: The identification value of the conditional access module (CAM) having a size of 8 bytes.

capacity provider [b-ITU-T J.90]: The entity that provides the technical facilities needed to deliver a programme schedule (e.g., the common carrier).

capture bandwidth (CBW) [b-ITU-T J.222.1]: The sum of the tuning bands in the TB list in MHz.

carrier hum modulation [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: The peak-to-peak magnitude of the amplitude distortion relative to the RF carrier signal level due to the fundamental and low-order harmonics of the power-supply frequency.

carrier related band [b-ITU-T J.112]: A frequency bandwidth spacing of television channels on a cable television system in exact frequency increments.

carrier-to-noise ratio (C/N or CNR) [b-ITU-T J.112], [b-ITU-T J.116]: The square of the ratio of the root mean square (rms) of the voltage of the digitally-modulated RF carrier to the rms of the continuous random noise voltage in the defined measurement bandwidth (if not specified explicitly, the measurement bandwidth is the symbol rate of the digital modulation).

carrier-to-noise ratio (C/N or CNR) [b-ITU-T J.122 Annex B], [b-ITU-T J.112 Annex C]: The square of the ratio of the root mean square (rms) of the voltage of the digitally-modulated RF carrier to the rms of the continuous random noise voltage in the defined measurement bandwidth. (If not specified explicitly, the measurement bandwidth is the symbol rate of the digital modulation; for video it is 4 MHz.)

carrier-to-noise ratio (C/N or CNR) [b-ITU-T J.122]: The ratio of signal power to noise power in the defined measurement bandwidth. For digital modulation, $CNR = E_s/N_0$, the energy-per-symbol to noise-density ratio; the signal power is measured in the occupied bandwidth, and the noise power is normalized to the modulation-rate bandwidth. For video, the measurement bandwidth is 4 MHz.

carrier-to-noise ratio (C/N or CNR) [b-ITU-T J.210]: The ratio of signal power to noise power in a defined measurement bandwidth. For digital modulation, $CNR = E_s/N_0$, the energy-per symbol to noise-density ratio; the signal power is measured in the occupied bandwidth, and the noise power is normalized to the modulation-rate bandwidth. For analog NTSC video modulation, the noise measurement bandwidth is 4 MHz.

cascading style sheets (CSS) [b-ITU-T J.200]: Standard for the style sheet for a markup language document.

CDCS_ISS [b-ITU-T J.1020]: One of the roles for DM system. It has the role of personalization of CDCS installed in a user secondary device.

CDCS_MSS [b-ITU-T J.1020]: One of the roles for DM system. It has the role of establishment of secure channel between CDCS_MSS and DM agent, and managing CDCS download.

CDCS_PSS [b-ITU-T J.1020]: One of the roles for DM system. It has the role of managing content access entitlement policy, based on access rights, which is different per entitlement levels and hardware capability of the secondary device considered.

C-DOCSIS CM [b-ITU-T J.223.2]: A cable modem (CM) that complies with the CM requirements of DOCSIS 3.0.

C-DOCSIS CMTS [b-ITU-T J.223.2]: A cable modem termination system (CMTS) that complies with the CMTS requirements of DOCSIS 3.0. In the context of this specification, it consists of a coax media converter (CMC) controller and a CMC or multiple CMCs operating together.

C-DOCSIS data tag (CDT) [b-ITU-T J.223.2]: As defined in the C-DOCSIS system, C-DOCSIS data tags (CDTs) are used to identify a service flow to which each data packet belongs.

C-DOCSIS management messages (CDMM) [b-ITU-T J.223.2]: The C-DOCSIS management messages (CDMMs) are used for exchanging configurations, status, and management information between the system control module and the radio frequency interface (RFI) module.

C-DOCSIS system [b-ITU-T J.223.1]: The C-DOCSIS system consists of the CMC controller, CMC, and C-DOCSIS CM. It implements broadband data access and forwarding, service configuration, as well as management and maintenance of coaxial cable networks.

ceiling (ceil) [b-ITU-T J.210]: The ceiling function rounds a number up to the nearest integer or nearest multiple of significance. Use: Ceiling (number, significance).

central cloud [b-ITU-T J.1303]: The cloud which has the full set of services provided by the cloud service provider.

centralized distribution structure [b-ITU-T J.195.1]: A physical structure of a passive coaxial access network and a multiple stage power distribution network realized by splitters only.

certificate [b-ITU-T J.1014]: Data structure as defined in clause 5 of [ITU-T J.1012], refer also to [b-ETSI GS ECI 001-3], with a complementary secure digital signature that identifies an **Entity**.

NOTE – The holder of the secret key of the signature attests to the correctness of the data – authenticates it – by signing it with its secret key. Its public key can be used to verify the data.

certificate [b-ITU-T J.1012]: Data structure as defined in clause 5 of this Recommendation with a complementary secure digital signature that identifies an **Entity**.

NOTE – The holder of the secret key of the signature attests to the correctness of the data – authenticates it – by signing it with its secret key. Its public key can be used to verify the data.

certificate chain [b-ITU-T J.1012]: List of **Certificates** that authenticate each other up to and including a root revocation list.

certificate chain [b-ITU-T J.1014]: A list of **Certificates** that authenticate each other up to and including a **Root Revocation List**.

certificate processing subsystem (CPS) [b-ITU-T J.1012], [b-ITU-T J.1014]: Subsystem of the **ECI Host** that provides **Certificate** verification processing and providing additional robustness against tampering.

certification authority [b-ITU-T J.1015], [b-ITU-T J.1015.1]: Party that is responsible for managing public-key certificates in an embedded common interface (**ECI**) **ecosystem**. A certification authority is trusted by all other parties in the system to perform operations associated with certificates.

challenge-response [b-ITU-T J.1026], [b-ITU-T J.1027], [b-ITU-T J.1028], [b-ITU-T J.1032]: The process in which one-way DCAS client software performs calculations using key ladder of a terminal security chipset through one-way DCAS manager.

channel [b-ITU-T J.122]: The frequency spectrum occupied by a signal. Usually specified by centre frequency and bandwidth parameters.

channel [b-ITU-T J.280]: A channel is a synonym for a "Service" in DVB terminology, or a "Program" in MPEG terminology.

channel bonding [b-ITU-T J.222.1]: A logical process that combines the data packets received on multiple independent channels into one higher-speed data stream. Channel bonding can be implemented independently on upstream channels or downstream channels.

channel number [b-ITU-T J.296]: The channel number refers to the numbers specified by broadcasting stations to label them (1 to 12). These numbers should correspond to the number of one-touch buttons on a remote controller unit.

channel scan (scan) [b-ITU-T J.296]: The channel scan function searches all channels to determine the presence or absence of broadcast signals. It is used by viewers when it is unknown which terrestrial broadcasting programmes can be received in the area of residence. When a broadcast signal is detected, the information on the station will be registered.

channel service unit [b-ITU-T J.214]: The piece of a CSU/DSU that talks to the telco network, understands framing and line coding, and provides electrical isolation of the network from the telco network.

chapter [b-ITU-T J.181]: A short section of a longer program, usually situated to permit a viewer to easily locate a scene or section of the program.

character DATA (CDATA) [b-ITU-T J.380.4], [b-ITU-T J.380.7], [b-ITU-T J.380.8]: XML data that is not parsed. CDATA carries markup examples that would otherwise be interpreted as XML because of the tags.

charging [b-ITU-T J.363], [b-ITU-T J.460.3]: The process of applying rating to usage data for a given session for the generation of a subscriber's bill.

chip [b-ITU-T J.122]: Each of the 128 bits comprising the S-CDMA spreading codes.

chip duration [b-ITU-T J.122]: The time to transmit one chip of the S-CDMA spreading code. The inverse of the chip rate.

chip rate [b-ITU-T J.122]: The rate at which individual chips of the S-CDMA spreading codes are transmitted (1280 to 5120 kHz).

chipset-ID [b-ITU-T J.1015], [b-ITU-T J.1015.1]: Non-secret number that is used to identify a chipset in an **ECI Ecosystem**.

child, children [b-ITU-T J.1012], [b-ITU-T J.1014]: **Entity (entities)** referred to by a **Certificate** signed by a (common) **Father**.

NOTE – **Father, Children, Brother** are referring to **Entities** that manage **Certificates**: initialization data and software that is used to start the SoC of a **CPE**.

chrominance-luminance delay inequality [b-ITU-T J.64]: The chrominance-luminance delay inequality is defined as the time difference (expressed in ns) between the luminance and the chrominance component of the composite pulse (element F). This difference is positive, if the symmetry axis of the demodulated chrominance component lags behind the symmetry axis of the luminance component.

chrominance-luminance gain inequality [b-ITU-T J.64]: The chrominance-luminance gain inequality is defined as the difference between the peak-to-peak amplitude of the chrominance component of the element G , G_1 , G_2 and the amplitude of the luminance bar (element B_2) expressed as a percentage of the luminance bar amplitude. The sign of the difference is positive if the amplitude of the chrominance component is greater than that of the luminance bar. Note that in the 525-line case

the nominal amplitude of element G is 80 IRE units. This factor must be taken into account when normalizing results.

If for any reason signal elements G , G_1 or G_2 are not available, the measurement can be made with the chrominance component of element F .

chrominance-luminance intermodulation [b-ITU-T J.64]: The chrominance-luminance intermodulation is measured on element G , G_1 or G_2 , after suppressing the incoming colour sub-carrier. It is defined as the difference between the luminance amplitude in element G_1 , or in the last section of element G or G_2 (b_5 in Figs. 3 and 4 of ITU-T J.64) and the amplitude of the succeeding section (b_6 in Figs. 3 and 4 of ITU-T J.64) in which the test signal has no sub-carrier, expressed as a percentage of the amplitude of the luminance bar (element B_2). The sign of the difference is positive if the luminance amplitude b_5 is greater than the luminance amplitude of the succeeding section b_6 .

NOTE – Some administrations use element F instead of G , G_1 or G_2 for measurement of this parameter. In this case measurement of the amplitude of the luminance component of the composite pulse (element F) is made after suppressing the incoming colour sub-carrier. The result will be given by the difference between the composite pulse luminance amplitude and half the luminance bar amplitude, expressed as a percentage of the luminance bar amplitude. The sign of the difference is positive if the amplitude of the composite pulse component is greater than half the luminance bar amplitude. In some cases the result may differ from that given by the preferred method, since the signal element F is not so well suited as element G to the measurement of this distortion.

chrominance reference amplitude error [b-ITU-T J.64]: This parameter relates to the variation in amplitude of the colour sub-carrier occurring in the region of blanking level. It is defined as the difference between the peak-to-peak amplitude of the colour sub-carrier on the blanking level tread of element D_2 and its normalized value, (i.e., 4/10 luminance bar amplitude) (see § 2.18 of J.64, Note 1), expressed as a percentage. The sign of the difference is positive if the amplitude of the colour sub-carrier on the blanking level tread is larger than the normalized value.

chunk [b-ITU-T J.123], [b-ITU-T J.124]: A contiguous set of samples for one track.

cipher [b-ITU-T J.170]: An algorithm that transforms data between plaintext and ciphertext.

cipher block chaining (CBC) [b-ITU-T J.181 Amendment 1]: This is a specific method of encryption. It is one of the methods used in DES.

ciphersuite [b-ITU-T J.170]: A set, which must contain both an encryption algorithm and a message authentication algorithm (e.g., a MAC or an HMAC). In general, it may also contain a key management algorithm, which does not apply in the context of IPCablecom.

classifier [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: A set of criteria used for packet matching according to TCP, UDP, IP, LLC, and/or 802.1P/Q packet fields. A classifier maps each packet to a service flow. A downstream classifier is used by the CMTS to assign packets to downstream service flows. An upstream classifier is used by the CM to assign packets to upstream service flows.

client device [b-ITU-T J.215]: The CPE that is connected to the cable network in the consumer's home, receives the television signals at the client's premises, and presents it for display on a display device.

client DVR (cDVR) [b-ITU-T J.700]: An instance of a DVR where the end-user terminal device contains the recording capability that can be solicited and operated by end users to record and store video, audio and other associated content locally for subsequent playback.

client type 1 [b-ITU-T J.179]: Client type 1 represents existing "legacy" endpoints (e.g., PC applications, gaming consoles) which lack specific QoS awareness or signalling capabilities. This Client knows nothing about CableModem, IPCable2Home, or IPCablecom messaging, and hence no related requirements can be placed upon it. Such clients may range from simple analog audio and

video presentation devices to complex networked peripherals and consumer electronics, such as set-top boxes or gaming consoles. This Client communicates with an Application Manager to request service, and does not request QoS resources directly from the operator access network. This Recommendation supports only client type 1.

client type 2 [b-ITU-T J.179]: Client type 2 is similar to an IP-Cablecom-T telephony MTA in that it supports QoS signalling based on IP-Cablecom DQoS. This Client is aware of IP-Cablecom Multimedia QoS, and communicates with an Application Manager to request service and obtain a token for access-network resources. The client then presents this token when requesting QoS resources from the access network (pkt-mm-1, pkt-mm-6). This Recommendation's support for client type 2 remains for further study.

client type 3 [b-ITU-T J.179]: Client type 3 requests QoS based on RSVP without Application Manager interaction. This Client is aware of IETF standards-based RSVP and uses this protocol to request QoS resources from the access network directly from the CMTS. This Recommendation's support for client type 3 remains for further study.

clock recovery unit (CRU) [b-ITU-T J.214]: A clock recovery unit exists in the IWF and is responsible for regenerating the circuit's clock based on the average inter-arrival time of the packets in the adaptive clocking mode, or on the time stamp differentials received when operating in the differential clock mode. The output clock is provided to the CU.

clock unit (CU) [b-ITU-T J.214]: A clock unit performs translations and distribution of TDM clocking information across (and between) physical, data and network layers.

closed captioning [b-ITU-T J.193]: Text scrolling on a television display that represents the audio portion of the program, typically provided for the hearing impaired.

cloud-based converged media service (CBCMS) [b-ITU-T J.1301]: A service intended for deployment by cable television operators and to support the requirements of rapid service innovation and deployment, which enables media services to be developed by separate vendors according to standard application programming interfaces, where appropriate.

cloud database [b-ITU-T J.1306]: A database that is optimized or deployed to a cloud-computing environment.

cloud digital video recorder (DVR) [b-ITU-T J.1301]: A recorder that saves television (TV) shows in the cloud data centre of a service provider rather than in the DVR or set-top box near the TV. Cloud DVRs enable customers to store more content and record more shows that are broadcast at the same time.

cloud streaming service [b-ITU-T J.1303]: The service using streaming technology to transmit media content from cloud and letting IP and Broadcast Cable TV users access Internet media without replacing set-top boxes or upgrading the firmware.

cloud terminal [b-ITU-T J.295]: A terminal that has at least a client function, browser and Internet connectivity for cloud network connection.

CMC [b-ITU-T J.223.1]: The cable media converter (CMC) converts data from a coaxial cable network to a packet digital optical network (such as PON or Ethernet). The CMC connects to a cable modem (CM) through the coaxial cable network in the downstream direction and to the CMC controller through the packet digital optical network in the upstream direction.

CMC controller [b-ITU-T J.223.1]: The CMC controller forwards upstream and downstream service data and manages the configuration of the CMC.

code-hopping matrix [b-ITU-T J.122]: A shifted version of the reference code matrix (see below) that is used when code hopping is employed to vary the codes used by each CM. The code-hopping matrix is either 128 rows by 128 columns (when all 128 codes are active) or is 127 rows by 128 columns (when less than 128 codes are active in the S-CDMA spreader-on frame). When less

than 128 codes are active, code 0 (all ones) is deleted from the matrix, but all remaining codes are still cycled through even if less than 127 codes are active in a frame.

coding mode [b-ITU-T J.88]: Mix A, Mix B and refresh (all intra) mode.

colour sub-carrier phase shift [b-ITU-T J.88]: Phase shift of 3.58 MHz colour sub-carrier of the coding block from the motion compensated reference block in the previous frame.

command [b-ITU-T J.287]: A single directive from the automation system to the compression system. A command is always carried within a multiple_operation message. This term is also used to specify specific ITU-T J.181 commands.

command and control messaging [b-ITU-T J.193]: Messaging between devices which request particular actions associated with video service such as Play, Rewind, and Pause.

common agent service [b-ITU-T J.230]: One of the particular resident applications which is specific to the mobile-set top box (STB) cooperation. Common agent service equips the common application program interfaces (APIs) to enable each application to utilize its mobile-STB cooperation function. Therefore, many application developers can realize the mobile-STB cooperation application easily and quickly.

CompareSwap4 [b-ITU-T J.117]: A bus transaction that stores, at the specified address, a provided data value when the contents of the specified address is equal to a provided argument value. This operation is performed indivisibly on the addressed quadlet.

compliance rules [b-ITU-T J.197]: The rules which apply to set top boxes for the purpose of preventing the unauthorized copying of controlled content.

compliant CM [b-ITU-T J.213]: A CM that implements this DOCSIS L2VPN Recommendation.

component (ELEMENTARY Stream) [b-ITU-T J.94]: One or more entities which together make up an event, e.g., video, audio, teletext.

component splice mode [b-ITU-T J.181 Amendment 1]: A mode of the cueing message whereby the program_splice_flag is set to '0' and indicates that each PID/component that is intended to be spliced will be listed separately by the syntax that follows. Components not listed in the Message are not be spliced.

component splice mode [b-ITU-T J.287]: A mode of the splice_info_section whereby the program_splice_flag is set to '0' and indicates that each PID/component that is intended to be spliced will be listed separately by the syntax that follows. Components not listed in the splice_info_section are not to be spliced.

composite motion compensation [b-ITU-T J.88]: Motion compensation (MC) is conducted on WHT domain not on pixel domain to solve colour sub-carrier phase shift.

composite second order beat (CSO) [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: The peak of the average level of distortion products due to second-order non-linearities in cable system equipment.

composite triple beat (CTB) [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: The peak of the average level of distortion components due to third-order non-linearities in cable system equipment.

container orchestration [b-ITU-T J.1306]: Procedure on container deployment and organization that provides the ability to schedule and manage container clusters, including container automated deployment, management, elastic scaling and container network management.

conditional access [b-ITU-T J.193]: The conditional granting of access to cable services and content based upon what service suite has been purchased by the customer.

conditional access system (CA) [b-ITU-T J.94]: A system to control subscriber access to services, programmes and events e.g., Videoguard, Eurocrypt.

Conditional Access system (CA) [b-ITU-T J.93], [b-ITU-T J.95]: The complete system for ensuring that cable services are accessible only to those who are entitled to receive them, and that the ordering of such services is not subject to modification or repudiation.

conditional access client software (CACS) [b-ITU-T J.1001]: An image of conditional access client software code downloaded onto the CACS remotely renewable security system.

conditional access client software (CACS) [b-ITU-T J.1002]: An image of conditional access client software code downloaded onto the CRS CAM.

conditional access module (CAM) [b-ITU-T J.1001]: A cryptographic functional module which is located in a set-top box with the main functions of entitlement validation, key management, and authentication. A set-top box can have one chip of secure hardware that includes the functions of CAM and descrambler, or a physically separated CAM in the form of a secure hardware IC or smart-card. The form of CAM can be determined by the policy of the multiple system operator or the conditional access client software vendor.

conditional access module (CAM) [b-ITU-T J.1002]: A cryptographic functional module which is located in set-top boxes, whose main function is entitlement validation, key management and authentication. Set-top boxes can have one chip of secure hardware that includes the functions of CAM and descrambler, or physically separated CAM in the form of a secure hardware IC or smart-card. The form of CAM can be determined by the policy of the MSO or CAS vendor.

confidentiality [b-ITU-T J.170]: A way to ensure that information is not disclosed to any one other than the intended parties. Information is encrypted to provide confidentiality. Also known as privacy.

configuration [b-ITU-T J.369], [b-ITU-T J.460.4]: Configuration is the process of defining and propagating data to network elements for providing services.

configuration server (Config. Server) [b-ITU-T J.460.1]: The logical network element responsible for UE provisioning, configuration and management.

consensus watermark [b-ITU-T J.197]: A standard watermark that has been developed for use in DRM.

constant frame skipping [b-ITU-T J.246], [b-ITU-T J.247]: An event where the HRC outputs frames with updated content at an effective frame rate that is fixed and less than the source frame rate.

constellation mapping [b-ITU-T J.195.1]: The process of mapping data bits to the constellation symbol.

constellation scrambler [b-ITU-T J.196.2]: The process that takes phase rotation of the constellation symbols in 4 quadrants by using binary pseudo random sequence.

constrained image [b-ITU-T J.197]: The visual equivalent of not more than 520 000 pixels per frame (e.g., an image with a resolution of 540 vertical lines by 960 horizontal lines for a 16:9 aspect ratio). A constrained image can be output or displayed using video processing techniques such as line doubling or sharpening to improve the perceived quality of the image.

constrained image trigger (CIT) [b-ITU-T J.197]: The field or bits used to trigger the output of a "constrained image" in the high definition analogue output of set top boxes.

consumer [b-ITU-T J.117]: A device that accepts OSD data.

consumer port [b-ITU-T J.117]: A port that is the sink of data frames and is flow controlled by updates of its externally visible iAPR control register.

consumer premises equipment provider [b-ITU-T J.90]: The entity that supplies the television/multimedia equipment at the consumer premises (e.g., the equipment manufacturer).

contact address [b-ITU-T J.360]: The URI of a user agent on the network. Contact addresses, in the context of IP-Cablecom are often, but not always, addresses used to deliver requests to a specific user agent.

container box [b-ITU-T J.123], [b-ITU-T J.124]: A box whose sole purpose is to contain and group a set of related boxes.

content [b-ITU-T J.181]: Generic term for television material, either advertisements or programs.

content [b-ITU-T J.200]: A general term that refers to any of the following: application, application resource collection, or application resource.

content [b-ITU-T J.295]: Information content transmitted via various media through the communication network, including the broadcasting network and IP.

content [b-ITU-T J.380.2]: The video, audio, and data streams taken together as a single identifiable unit. Content may refer to the original entertainment (programming) content, an ad spot, an interactive or enhanced application asset, or any other similar asset.

content descrambler [b-ITU-T J.1015], [b-ITU-T J.1015.1]: Component in the chipset of an **ECI ecosystem** that is capable of decrypting content. A content descrambler may also be capable of encrypting content (for the purpose of content re-encryption). In this Recommendation content encryption/decryption uses a **symmetric encryption scheme**. For MPEG-2 content, content encryption and decryption are also referred to as scrambling and descrambling, respectively.

content distribution network (CDN) [b-ITU-T J.292]: CDN contains a Core network and Access network where content delivery is controlled by identified packet routing and a QoS oriented mechanism.

content key [b-ITU-T J.1005]: A key used to protect the cable content data stream(s).

content properties (CP) [b-ITU-T J.1014]: Properties of the content that provide information on rights and obligations associated with subsequent applications or transformations of the content, such as usage rights information, selective output control and parental control information.

content protection [b-ITU-T J.197]: The application of technical safeguards that prevent the unauthorized replication and/or redistribution of network delivered content.

content protection [b-ITU-T J.702]: Ensuring that end-users can only use the content they have already acquired in accordance with the rights that they have been granted by the rights holder. Content protection includes protecting contents from illegal copying and distribution, interception, tampering, unauthorized use, etc.

content protection system [b-ITU-T J.1012], [b-ITU-T J.1015], [b-ITU-T J.1015.1]: System in an **ECI ecosystem** that employs cryptographic techniques to manage access to content and services.

NOTE – The term may be interchanged frequently with the alternate Service Protection system. Typical systems of this sort are either conditional access (CA) systems or digital rights management (DRM) systems.

content provider [b-ITU-T J.90]: The entity that provides the creative content of a programme (e.g., the programme producer or the owner of its rights).

content provider [b-ITU-T J.702]: The entity that owns or is licensed to sell content or content assets.

content provider [b-ITU-T J.1015], [b-ITU-T J.1015.1]: Party that distributes digital content to a **content receiver** in an **ECI ecosystem**.

content receiver [b-ITU-T J.1015], [b-ITU-T J.1015.1]: Device that is used to access digital content within an **ECI ecosystem**. A **content receiver** contains a chipset with a **content descrambler**.

content tracing [b-ITU-T J.702]: A process to enable the identification of the (arbitrary) origin of content, and/or the responsible party (e.g., the end-user), to facilitate subsequent investigation in the event of unauthorized use of content, for example, content copying or redistribution.

NOTE – Content tracing information may be attached to content either as metadata, or as a forensic watermark.

continuous integration and continuous deployment [b-ITU-T J.1306]: Software engineering practice that helps team members integrate and publish their work results frequently, with continuous integration that automatically conducts error verification and shortens the system development lifecycle, and continuous deployment that automatically releases the verified code and builds system deployed into different targeting environments.

continuous random noise [b-ITU-T J.67]: The signal-to-noise ratio for continuous random noise is defined as the ratio, expressed in decibels, of the nominal amplitude of the luminance signal (1 V) to the r.m.s. amplitude of the noise measured after band limiting. A signal-to-weighted-noise ratio is defined as a ratio, expressed in decibels, of the nominal amplitude of the luminance signal, to the r.m.s. amplitude of the noise measured after band limiting and weighting with a specified network.

One possibility is that wideband random noise should be measured in a bandwidth of 8.4 MHz using a constant impedance noise-weighting network with a time constant of 90 ns. Such a network is based partly on the assumption that with the trend towards larger picture displays and with the improved picture quality available from the MAC/packet television standard, future subjective tests will more commonly employ a viewing distance of four times the picture height, rather than six times, as at present.

The second possibility uses the existing unified weighting network, scaled according to the 3:2 compression ratio, as a common weighting network for all MAC systems. This filter gives the same results as would be obtained from a signal in decompressed form with the unified weighting filter described in ITU-T J.612. It also takes account of the noise carried in the more-compressed colour-difference signals. The possibly greater noise sensitivity due to the higher bandwidth HD MAC signals when these use the same networks that are designed for present day MAC signals is also considered. The definition of this network and its amplitude/frequency response are given in Figure 1 of ITU-T J.67.

control [b-ITU-T J.287]: A category of request operation supported by this API. See clause 8.3 of ITU-T J.287.

control frame [b-ITU-T J.195.2]: Frame of the MAC layer used for access control and channel allocation.

control point [b-ITU-T J.362]: Within the context of this Recommendation, control point refers to a point in the network that can be used to apply a function for a media flow that flows through that point. Functions described here are: QoS (IPCom multimedia [b-ITU-T J.179] or IPCom DQoS [b-ITU-T J.163]). Replication, encapsulation and transmission for the purposes of LI content tapping.

control point discovery [b-ITU-T J.362]: The act of discovering information (IP address, protocol) concerning a control point in order to allow a requestor to apply a specific controlling function.

control word [b-ITU-T J.287]: A multiple key value used by the encryption mechanisms specified in [ITU-T J.181].

control word (CW) [b-ITU-T J.1001]: The value which is used to scramble and descramble transport streams.

NOTE – The control word should be refreshed frequently during service operation to enhance security.

control word (CW) [b-ITU-T J.1002]: The value which is used to scramble and descramble transport streams; it is refreshed frequently during the service operation to enhance security.

control word [b-ITU-T J.1015], [b-ITU-T J.1015.1]: Secret key used to encrypt and decrypt content within an **ECI ecosystem**. In digital rights management systems, a control word is typically referred to as a content key.

controlled content [b-ITU-T J.197]: Content that has been transmitted from a video service provider's network with the encryption mode indicator (EMI) bits set to a value other than zero, zero (0,0) ("copying not restricted").

converged interconnect network [b-ITU-T J.212]: The network (generally gigabit Ethernet) that connects an M-CMTS Core to an EQAM.

converged media [b-ITU-T J.1305]: New type of media that effectively combines the information technology of radio, television, newspapers and periodicals, network audio-visual and other aspects, with the help of diversified communication channels and forms.

conversational television programme [b-ITU-T J.146]: A television programme that contains live conversation contributions shot at different locations, linked together at a base location.

copy control [b-ITU-T J.296]: A control copy generation that limits copying when the programme and other copyright objects are copied by the recording equipment connected with the broadcasting receiver.

copy control information (CCI) [b-ITU-T J.197]: A one-byte field that contains information that set top boxes use to control copying of content. See Annex A of [b-ITU-T J.197] for further details.

core services [b-ITU-T J.193]: The set of services that MUST, at a minimum, be supported by the NG-STB.

cost [b-ITU-T J.283]: A cost is a parameter configured by an operator in order to make a network resource utilization effective. Example definition is described in [b-IETF RFC 2328].

CPE controlled cable modem (CCCM) [b-ITU-T J.122]: Refer to the DOCS cable modem to customer premises equipment interface (CMCI) specification.

CPE controlled cable modem (CCCM) [b-ITU-T J.112 Annex B]: Refer to the DOCSIS Cable Modem to Customer Premises Equipment Interface (CMCI) specification.

CPE manufacturer [b-ITU-T J.1012]: A company that manufactures ECI compliant CPEs.

criticality [b-ITU-T J.88]: The reference for the difficulty of the picture judged in macro block units

cross platform [b-ITU-T J.295]: A coordination service between platforms.

cross-modulation [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: A form of television signal distortion where modulation from one or more television channels is imposed on another channel or channels.

cryptanalysis [b-ITU-T J.93], [b-ITU-T J.95]: The science of recovering the plaintext of a message without access to the key (to the electronic key in electronic cryptographic systems).

cryptanalysis [b-ITU-T J.170]: The process of recovering the plaintext of a message or the encryption key without access to the key.

cryptographic duty cycle [b-ITU-T J.93], [b-ITU-T J.95]: The maximum secure capacity of a cryptographic process, based on the total number of bits that can be securely encrypted before it becomes advisable to change the key.

cryptographic hash function [b-ITU-T J.1015], [b-ITU-T J.1015.1]: Unkeyed cryptographic function in an ECI ecosystem that takes data of arbitrary size, referred to as the message, as input and produces an output data block of fixed size, referred to as the message digest. Assumed properties of the **cryptographic hash function** in this Recommendation are that the **cryptographic hash function** behaves as a random function and is second preimage resistant.

cueing message [b-ITU-T J.181 Amendment 1], [b-ITU-T J.287]: In the context of this appendix, a message is the contents of any splice_info_section.

cursor [b-ITU-T J.380.8]: A temporary construct containing static data. Consumers of logical services implementing the GIS interface may create and access cursor information using the standard query mechanisms described in this document.

customer [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C]: see definition for end user (clause 6.437).

customer premises equipment [b-ITU-T J.460.2]: Usage of CPE within this Recommendation generically refers to the cable modem and E-DVA device that resides at the subscriber home, as well as any customer telephony equipment (telephones, answering machines, fax machines, etc.). Typically, CPE would refer to equipment that is beyond the service provider network interface, such as a telephone or personal computer. However, since the cable modem and E-DVA represent the service provider network interface device at the subscriber home, it is commonly referred to as CPE.

customer premises equipment (CPE) [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122], [b-ITU-T J.210], [b-ITU-T J.212]: Equipment at the end user's premises; it may be provided by the end user or by the service provider.

customer premises equipment (CPE) [b-ITU-T J.292]: CPE covers subscriber video devices (SVD), residential gateway (RGW), and optional in home networking devices.

customer premises equipment (CPE) [b-ITU-T J.1012]: Media receiver which has implemented **embedded common interface (ECI)**, allowing the user to access digital media services.

customer premises equipment (CPE) [b-ITU-T J.1013]: A customer device that provides embedded common interface (**ECI**) specified decryption and encryption functions.

customer-facing interface [b-ITU-T J.218]: An eRouter interface used for connecting CPE devices.

customer-facing IP interface [b-ITU-T J.218]: An IP interface connected to the eRouter which is not necessarily mapped one-to-one with the number of customer-facing ports on the eRouter.

customer-facing logical IP interface [b-ITU-T J.218]: A logical interface connected to the eRouter which is not necessarily mapped one-to-one with the number of customer-facing ports on the eRouter.

cyclic prefix [b-ITU-T J.195.2]: Data located at the front of an OFDM symbol, which is a copy of the data from the end of the OFDM symbol.

cyclic redundancy check [b-ITU-T J.112]: A method of error detection using cyclic code.

cyclic redundancy check (CRC) [b-ITU-T J.181 Amendment 1]: A method to verify the integrity of a transmitted Message.

data frame (frame) [b-ITU-T J.117]: A contiguous group of data bytes sent between producer and consumer nodes.

data frame [b-ITU-T J.195.2]: Frame of the MAC layer used to carry data of the upper layer.

data lake [b-ITU-T J.1306]: A large data warehouse that centrally stores all kinds of structured and unstructured data.

data link layer [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: Layer 2 in the open systems interconnection (OSI) architecture; the layer that provides services to transfer data over the transmission link between open systems.

data message [b-ITU-T J.204]: A message transmitted between an IPDR exporter and collector across the streaming protocol, containing a common streaming protocol header and an optional payload consisting of control and data records.

data model [b-ITU-T J.369], [b-ITU-T J.460.4]: An abstract model that describes representation of data in a system.

data model [b-ITU-T J.380.8]: A data model is a formal view of the data items contained in an information store to which an information service implementing this standard will provide access and is specified for purposes of formulating and executing queries against the information store's data. This standard specifies one data model that may be used for querying a logical service's information store with this standard's "Basic Query" interface. More complex data models may be specified independently of this standard and may be queried with this standard's "Advanced Query" interface. In this latter case, the mechanisms by which a consumer incorporates a data model specification so that meaningful queries may be issued against it are outside the scope of this standard.

data rate [b-ITU-T J.212]: Throughput, data transmitted in units of time usually in bits per second (bit/s).

data record [b-ITU-T J.204]: The binary encoding of an IPDR record.

data segment (segment) [b-ITU-T J.117]: A largest portion of a data frame that can be written into the segment buffer before updating the consumer's iAPR register.

data service unit [b-ITU-T J.214]: The part of the CSU/DSU that interfaces with routers, switches and packets. It has a serial port to interface with compatible data equipment.

data signal waveform [b-ITU-T J.67]: The data signals have very different characteristics within the family of MAC systems. They are defined in the former CCIR special publication "Specifications of Transmission Systems for the Broadcasting-Satellite Service".

data timing [b-ITU-T J.101]: In teletext System B the data timing is defined as the time difference between the peak of the penultimate "1" run-in bit and the line time datum (see Report 624). In teletext System A the data timing is defined as the time difference between the leading edge of the data signal and the line time datum (see more details in Fig. 2 of ITU-T J.101).

data-over-cable service interface specification (DOCSIS) [b-ITU-T J.296]: The cable modem standard that was established by the Multimedia Cable Network System Partners, Ltd. (MCNS) in 1997. This term is generally used as a generic term for a cable modem and is implemented in [ITU-T J.122] or [ITU-T J.112].

dBm0 [b-ITU-T J.14]: The absolute signal power level, in decibels, referred to a point of zero relative level. [This symbol traditionally relates to telephony relative levels.]

dBm0s [b-ITU-T J.14]: The absolute signal power level, in decibels, referred to a point of zero relative sound-programme level.

dBq0ps [b-ITU-T J.16]: Weighted noise level, measured with a quasi-peak measuring instrument complying with CCIR Recommendation 468 and referred to a point of zero relative sound-programme level.

dBq0s [b-ITU-T J.16]: Unweighted noise level, measured with a quasi-peak measuring instrument complying with CCIR Recommendation 468 and referred to a point of zero relative sound-programme level.

dB_r [b-ITU-T J.14]: The relative power level, in decibels. [These symbols traditionally relate to telephony relative levels.]

dB_{rs} [b-ITU-T J.14]: The relative (power) level, in decibels, with respect to sound-programme signals. (This abbreviation is only applicable at points in a sound-programme circuit where the signals can nominally be related to the input by a simple scaling factor.)

NOTE – The use of level definitions is given in CCIR Recommendation 574.

DCAS App [b-ITU-T J.1203]: An application running in a smart TV operating system (TVOS) that executes none-secure sensitive downloadable conditional access system (DCAS) functionalities such as setting a filter to get an entitlement control message (ECM)/entitlement management message (EMM) packet, known as an ECM/EMM packet from a transport stream, and sending the ECM/EMM

to the DCAS TApp. TVOS can manage multiple DCAS applications to support different DCAS services from different service providers.

DCAS TApp [b-ITU-T J.1203]: A trusted application running in a smart TV operating system (TVOS) trusted execution environment that executes secure downloadable conditional access system (DCAS) functionalities such as ECM/EMM packet decryption and signature verification.

decibel-microvolt (dBμV) [b-ITU-T J.210]: Unit of RF power expressed in decibels relative to 1 microvolt over 75 ohms, where $\text{dB}\mu\text{V} = 20\log^{10}(\text{value in } \mu\text{V}/1 \mu\text{V})$.

decibel-millivolt (dBmV) [b-ITU-T J.210], [b-ITU-T J.212]: Unit of RF power expressed in decibels relative to 1 millivolt, where $\text{dBmV} = 20\log^{10}(\text{value in mV}/1 \text{mV})$.

decibels (dB) [b-ITU-T J.210], [b-ITU-T J.212]: Ratio of two power levels expressed mathematically as $\text{dB} = 10\log^{10}(P_{\text{OUT}}/P_{\text{IN}})$.

declarative application [b-ITU-T J.200]: An application which primarily makes use of declarative information to express its behaviour; an XML document instance is an example of a declarative application.

declarative application environment [b-ITU-T J.200]: An environment that supports the processing of declarative applications; an XML user agent (browser) is an example of a declarative application environment.

declarative application environment [b-ITU-T J.296]: An application environment using HTML.

decoding margin [b-ITU-T J.67]: Another method to evaluate the data signal quality by adding a Gaussian noise is to measure the level of added noise to obtain a given bit-error ratio. This is, by definition, the "decoding margin".

decoding margin [b-ITU-T J.101]: The decoding margin is defined as the difference between the highest "0" bit level and the lowest "1" bit level measured at the sampling instants for a bit error ratio of 10⁻³. The difference is expressed as percentage of the basic amplitude.

decoding time-stamp [b-ITU-T J.187], [b-ITU-T J.89]: A field that may be present in a PES packet header that indicates the time that an access unit is decoded in the system target decoder.

decryption function [b-ITU-T J.96]: Refers to a logical function used to decrypt the encrypted session words, with the help of a key.

default data model [b-ITU-T J.380.8]: The data model that is used when no specific data model is provided. The default data model typically occupies the first location in a data model sequence (i.e., a list of data models).

default endpoint [b-ITU-T J.380.2]: The endpoint where messages are delivered in the absence of a message specific endpoint designation.

deferred processing mode [b-ITU-T J.287]: Processing of a multiple operation message(), when the value of time type within timestamp() is non-zero.

delay [b-ITU-T J.161]: The absolute time required for a signal to transit from source to receiver.

delivery network gateway functions (DNGF) [b-ITU-T J.702]: Set of functions that mediate between the network and service provider domains and the IPTV terminal function (ITF).

NOTE – A device implementing the DNGF is commonly referred to as the residential gateway (RG) or delivery network gateway (DNG).

delivery system [b-ITU-T J.94]: The physical medium by which one or more signal multiplexes are transmitted, e.g., satellite transponder, wide-band coaxial cable, fibre optics.

demodulator module [b-ITU-T J.222.1]: A physical entity in the CM that demodulates a block of one or more contiguous channels of a single bandwidth (6 MHz or 8 MHz) within the output from a single tuner.

depth [b-ITU-T J.902]: Distance from the capturing camera to a surface of an object in the scene.

depth map [b-ITU-T J.901]: Distance from the capturing camera to a surface of an object in the scene measured per each pixel on the captured image.

DER Encoded [b-ITU-T J.222.3]: Refers to a value which is encoded using the ASN.1 distinguished encoding rules [b-ITU-T X.690].

descrambling [b-ITU-T J.91]: is defined as the restoration of the characteristics of a vision/sound/data signal in order to allow reception in a clear form. This restoration is a specified process under the control of the conditional access system (receiving end).

descrambling [b-ITU-T J.93], [b-ITU-T J.95], [b-ITU-T J.1031]: The processes of reversing the scrambling functions (see "scrambling") to yield usable pictures, sound, and data services.

NOTE – Based on the definition given in [b-ITU-T J.93].

descriptor [b-ITU-T J.94]: A data structure of the format: descriptor_tag, descriptor_length, and a variable amount of data. The tag and length fields are each 8 bits. The length specifies the length of data that begins immediately following the descriptor_length field itself. A descriptor whose descriptor_tag identifies a type not recognized by a particular decoder shall be ignored by that decoder. Descriptors can be included in certain specified places within PSIP tables, subject to certain restrictions. Descriptors may be used to extend data represented as fixed fields within the tables. They make the protocol very flexible since they can be included only as needed. New descriptor types can be standardized and included without affecting receivers that have not been designed to recognize and process the new types.

detach [b-ITU-T J.117]: The process of removing access to an asynchronous connection plug's address space.

development and operations (DevOps) [b-ITU-T J.1306]: A group of processes, methods and systems collectively used to promote communication, collaboration and integration among application development and system, technology operation and maintenance as a single whole engineering process.

device tree source [b-ITU-T J.1202]: The device tree source is a textual representation of a device tree in a form that can be processed and compiled into a binary device tree in the form expected by the operating system. A device tree is a tree data structure with nodes that describe the physical devices in a hardware system. The tree data structure allows a runtime operating system to run on top of the respective hardware system without hard-coding hardware information of the related devices included in the hardware system.

DIAMETER [b-ITU-T J.363], [b-ITU-T J.460.3]: The DIAMETER protocol provides an Authentication, Authorization and Accounting (AAA) framework for applications such as network access or IP mobility.

differential phase [b-ITU-T J.64]: Differential phase is determined by evaluating the phase modulation of the colour sub-carrier superimposed on the staircase in element D_2 .

Recommendation 567 defines differential phase in terms of two parameters $+x$ and $-y$ which represent the maximum (peak) differences in phase between the sub-carrier on the treads of the received test signal and the sub-carrier on its blanking level, expressed in degrees difference from the latter. In the case of a monotonic characteristic either x or y will be zero.

x and y can be found from the expressions below:

$$x = \left| \Phi_{max} - \Phi_0 \right| y = \left| \Phi_{min} - \Phi_0 \right|$$

where:

Φ_0 : phase of sub-carrier on the blanking level tread of element D_2 .

Φ_{max} : highest value of sub-carrier phase on any tread.

Φ_{min} : lowest value of sub-carrier phase on any tread.

Two alternative methods of expressing the results are acceptable for automatic measurement. These are:

- "peak differential phase", which is defined by either $+x$ or $-y$ depending upon which of these parameters has the larger magnitude.
- "peak-to-peak differential phase", which is defined as $x + y$.

differential gain [b-ITU-T J.64]: Differential gain is determined by evaluating the amplitude modulation of the colour sub-carrier superimposed on the staircase in element D_2 .

Recommendation 567 defines differential gain in terms of two parameters $+x$ and $-y$ which represent the maximum (peak) differences in amplitude between the sub-carrier on the treads of the received test signal and the sub-carrier on its blanking level, expressed as a percentage of the latter. In the case of a monotonic characteristic, either x or y will be zero.

x and y can be found from the expressions below:

$$x = 100 \left| \frac{A_{max}}{A_0} - 1 \right| \quad y = 100 \left| \frac{A_{min}}{A_0} - 1 \right|$$

where:

A_0 : amplitude of the received sub-carrier on the blanking level tread of element D_2 .

A_{max} : highest value of sub-carrier on any tread.

A_{min} : lowest value of sub-carrier on any tread.

Two alternative methods of expressing the results are acceptable for automatic measurement. These are:

- "peak differential gain", which is defined by either $+x$ or $-y$, depending upon which of these parameters has the larger magnitude.
- "peak-to-peak differential gain", which is defined as $x + y$.

NOTE – For the measurement of peak-to-peak differential gain some administrations use A_{max} rather than A_0 . The formula used then is:

$$x + y = 100 \left| \frac{A_{max} - A_{min}}{A_{max}} \right|$$

Results obtained by this method will differ only slightly from those defined above if the magnitude of the distortion is not excessive.

digital channel [b-ITU-T J.94]: A set of one or more digital elementary streams. See virtual channel.

digital cue tone [b-ITU-T J.287]: Widely used term to refer to an ITU-T J.181 splice_info_section().

digital program insertion (DPI) [b-ITU-T J.215]: Insertion of alternative content into digitally encoded content in response to messaging in the stream.

digital rights management (DRM) [b-ITU-T J.197], [b-ITU-T J.294]: The definition, management, and enforcement of a set of content usage rules. These usage rules will indicate things such as the right to copy, view, or distribute a particular piece of content.

digital rights management (DRM) [b-ITU-T J.295]: Digital rights management is for the protection of digital content.

NOTE – In these requirements, use within a home network is assumed.

digital signal 0 (DS0) [b-ITU-T J.214]: Digital signal 0 (DS0) is a basic digital signalling rate of 64 kbit/s, corresponding to the capacity of one voice-frequency-equivalent channel.

digital signature scheme [b-ITU-T J.1015], [b-ITU-T J.1015.1]: Keyed asymmetric cryptographic scheme that is used to protect the authenticity of data in an **ECI ecosystem**. A **digital signature scheme** consists of a key generation algorithm, a signature generation operation and a signature verification operation. Keys are generated as (secret/private key, public key) pairs. The data is signed using a secret/private key and the corresponding public key is used to verify the signature. The **digital signature scheme** specified in this Recommendation is used to protect the authenticity of messages as defined in [b-ROEL]; in particular, the scheme is not used to provide non-repudiation or source authentication in this Recommendation.

digital storage media command and control (DSM-CC) [b-ITU-T J.200]: A control method defined in [b-ISO/IEC 13818-6], which provides access to files and streams for digital interactive services.

digital storage media command and control (DSM-CC) [b-ITU-T J.291]: DSM-CC is for developing control channels associated with MPEG-2 streams.

digital television (DTV) [b-ITU-T J.117]: A device that receives, decodes and presents audio and video material that has been transmitted in a compressed form. The device can be a single unit or it can be constructed from a number of individual components (e.g., a digital terrestrial set-top box and an analog television).

digital transmission content protection (DTCP) [b-ITU-T J.197]: The method of encryption, decryption, key exchange and renewability that is described in the specification entitled "5C digital transmission content protection release 1.0".

digital video recorder (DVR) [b-ITU-T J.700]: A recording capability that can be solicited and operated by end users to record and store video, audio and other associated content for subsequent playback.

distortions due to echoes [b-ITU-T J.67]: This distortion is that caused by the superposition of the direct signal in the RF paths and an attenuated version of that signal delayed in time and shifted in phase relative to the direct signal.

distributed DVR (dDVR) [b-ITU-T J.700]: Multiple instances of a DVR where a combination of cDVRs and nDVRs can be used to record and store video, audio and other associated content for subsequent playback. For example, this usually occurs within a home network containing multiple cDVRs in order to distribute storage of video, audio and other content.

distribution hub [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: A location in a cable television network which performs the functions of a Headend for customers in its immediate area, and which receives some or all of its television program material from a Master Headend in the same metropolitan or regional area.

DM_ISS [b-ITU-T J.1020]: One of the roles for DM system. It has the role of personalization of DM agent installed in a user secondary device.

DM_MSS [b-ITU-T J.1020]: One of roles for DM system, and has a role of managing on-line or off-line download.

DOCS 1.0 [b-ITU-T J.122]: Data-over-cable system defined by [b-SCTE 22-1].

DOCS 1.1 [b-ITU-T J.122]: Data-over cable system defined by [b-ITU-T J.112 Annex B], (also see clause 6.346bis).

DOCS 2.0 [b-ITU-T J.122]: Data-over-cable system as defined in this Recommendation.

DOCSIS [b-ITU-T J.112 Annex B]: A generic term for a system or device compliant with any one of the Data Over Cable Service Interface Specification versions, namely DOCSIS 1.0, DOCSIS 1.1, DOCSIS 2.0.

DOCSIS [b-ITU-T J.125], [b-ITU-T J.126]: The term for a system or device compliant with any one of the Cable Television Laboratories, Inc. ("CableLabs") series of specifications located at: <http://www.cablemodem.com/specifications/>.

DOCSIS [b-ITU-T J.179]: Describes a specific CableModem technology as developed by Cable Television Laboratories, Inc. ("CableLabs") located at: <http://www.cablemodem.com/specifications/>. The international version is defined in Annex B/J.112.

DOCSIS [b-ITU-T J.368]: A set of interface specifications for transmitting data over cable television systems in a standard fashion.

DOCSIS 1.0 [b-ITU-T J.112 Annex B], [b-ITU-T J.125]: A system or device compliant with the following Data Over Cable Service Interface Specifications [SCTE22-1], [SCTE22-2], [SCTE22-3], [DOCSIS4].

DOCSIS 1.1 [b-ITU-T J.125]: A system or device compliant with the following data over cable service interface specifications: [ITU-T J.112-B], [SCTE23-3], [DOCSIS4] and this Recommendation.

DOCSIS 1.1 [b-ITU-T J.112 Annex B]: A system or device compliant with the following data over cable service interface specifications [J.125], [SCTE4], [DOCSIS4], and Annex B.

DOCSIS 2.0 [b-ITU-T J.112 Annex B]: A system or device compliant with the following data over cable service interface specifications [J.122], [J.125], [SCTE5], [DOCSIS4].

DOCSIS 2.0 [b-ITU-T J.125]: A system or device compliant with the following data over cable service interface specifications [ITU-T J.122], [SCTE79-2], [DOCSIS4] and this Recommendation.

DOCSIS flow [b-ITU-T J.163]: A unidirectional or bidirectional flow of data packets that is subject to MAC layer signalling and QoS assignment compliant to [ITU-T J.112] (or Rec. ITU-T J.122).

DOCSIS L2PDU [b-ITU-T J.213]: A Packet PDU of a DOCSIS MAC Frame, i.e., the L2PDU following a MAC Header with FC_TYPE=00. This definition means that a MAC Management message with FC_TYPE=11 is not considered to be a DOCSIS L2PDU, even though the form of a MAC Management Message Header is the same form as an L2PDU.

DOCSIS MAC frame [b-ITU-T J.213]: The unit of transmission on the DOCSIS cable RF interface, consisting of a MAC Header and a (possibly null) Data PDU. The FC_TYPE field of MAC Header identifies the Data PDU as either a Packet PDU (FC_TYPE=00), or a MAC-specific PDU (FC_TYPE=11).

DOCSIS Set-Top Gateway (DSG) [b-ITU-T J.128]: The DOCSIS Set-top Gateway (DSG) defines functionality on a DOCSIS CMTS and DOCSIS CM to support the configuration and transport of a class of service known as "Out-Of-Band (OOB) messaging" between a Set-top Controller (or application servers) and the customer premises equipment (CPE). The DSG is not intended for the delivery of programming content.

DSG [b-ITU-T J.291]: The DOCSIS Set-top Gateway is an interface defining signalling to and from a DOCSIS modem embedded in a cable set-top device.

DOCSIS signalling [b-ITU-T J.291]: DOCSIS signalling as defined in Recs ITU-T J.125 and ITU-T J.126. DOCSIS is the term for a system or device compliant with any one of the Cable Television Laboratories, Inc. ("CableLabs") series of specifications located at: <http://www.cablemodem.com/specifications/>.

DOCSIS-based CPE [b-ITU-T J.700]: A terminal device that contains an embedded DOCSIS cable modem. Hybrid CPEs and IP-only CPEs may be DOCSIS based.

document object model (DOM) [b-ITU-T J.200]: An API that defines the logical structure of XML [b-W3C XML] and HTML [b-W3C HTML] documents and the way a document is accessed and manipulated. It is also called DOM-API. It is an interface independent from platforms and languages.

document object model (DOM) [b-ITU-T J.380.7]: A specification for a programming interface (API) from the W3C that allows programs and scripts to update the content, structure and style of HTML and XML documents.

document object model (DOM) object [b-ITU-T J.200]: An object generated by a HTML [b-W3C HTML] document.

domain [b-ITU-T J.178]: Any number of IP-Cablecom networks controlled by a single cable network operator.

domain [b-ITU-T J.294]: The extent of home-network-compliant direct influence.

domain [b-ITU-T J.1005]: A group of devices defined by a rights issuer such that the rights issuer can issue rights to objects for the group that can be processed by all devices within the group and only by those devices.

domain name system (DNS) (based on [IETF RFC 1034]) [b-ITU-T J.296]: A protocol used by the service that maps a host name on a network onto its IP address.

domains [b-ITU-T J.190]: The extent of home-network-compliant direct influence.

downlink [b-ITU-T J.195.2]: Link from HiNoC bridge (HB) to HiNoC modem (HM).

downloadable conditional access system (DCAS) [b-ITU-T J.291]: A technology for downloading conditional access into software on a set-top box; this is an effort under way at CableLabs and due for publication in 2006.

downloadable conditional access system (DCAS) [b-ITU-T J.1026], [b-ITU-T J.1027], [b-ITU-T J.1028]: A conditional access (CA) system that supports all the features of legacy conditional access and provides a CA-neutral mechanism to securely download CA client image and switch CA terminals without changing hardware through either a broadcasting or a two-way network.

downstream [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122], [b-ITU-T J.170], [b-ITU-T J.184], [b-ITU-T J.361]: In cable television, the direction of transmission from the headend to the subscriber.

downstream (DS) [b-ITU-T J.212]: 1) Transmissions from CMTS to CM. This includes transmission from the M-CMTS Core to the EQAM as well as the RF transmissions from the EQAM to the CM. 2) RF spectrum used to transmit signals from a cable operator's headend or hub site to subscriber locations.

downstream [b-ITU-T J.222.3]: Flow of signals from the cable system control center through the distribution network to the customer. For communication purposes, associated with transmission (down) to the end-user.

downstream bonded service flow [b-ITU-T J.222.2]: A downstream service flow for which DOCSIS MAC Frames are transmitted on one or more Downstream Channels.

downstream bonding group [b-ITU-T J.222.2]: A subcomponent object of a MAC Domain that distributes packets from an assigned set of downstream bonding service flows to an associated set of Downstream Channels of that MAC Domain.

downstream service extended header [b-ITU-T J.222.2]: A DOCSIS extended header that contains a Downstream Service ID (DSID).

downstream service group [b-ITU-T J.222.2]: The complete set of Downstream Channels (DCs) from a single CMTS that could potentially reach a single Cable Modem. A DS-SG corresponds to a broadband forward carrier path signal from one CMTS. In an HFC deployment, a DS-SG corresponds to the downstream fibre transmission from one CMTS to one or more Fibre Nodes.

DPI cue message [b-ITU-T J.287]: See splice_info_section. A term used in [ITU-T J.181]; a "DPI Cue Message" is a splice_info_section in this document.

DPI PID [b-ITU-T J.287]: A single PID carrying ITU-T J.181 splice_info_sections.

DRM App [b-ITU-T J.1203]: An application running in a smart TV operating system (TVOS) that executes none-secure sensitive digital rights management (DRM) functionalities such as communication with DRM head end and retrieving content authorization. TVOS can manage multiple DRM applications to support different DRM services from different service providers.

DRM bridge [b-ITU-T J.197]: The distribution and home network infrastructure and technologies put in place to enable content protection and Digital Rights Management for network delivered content being stored and distributed on a home network.

DRM TApp [b-ITU-T J.1203]: A trusted application running in a smart TV operating system (TVOS) trusted execution environment that executes secure digital rights management (DRM) functionalities such as content decryption, secure video path and trust chain verification.

drop cable [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: Coaxial cable that connects to a residence or service location from a directional coupler (tap) placed on the nearest coaxial feeder cable.

DSC_ID [b-ITU-T J.1004]: The identification value of the descrambler (DSC) having a size of 40 bytes.

DSG address table [b-ITU-T J.128]: The collection of DSG Rules and DSG Classifiers contained within the DCD message. The DSG Client uses its DSG Client ID as an index into the DSG Address Table to determine what DSG Tunnel Address to receive.

DSG advanced mode [b-ITU-T J.128]: Operation with the DCD message. Address assignment is dynamic. The DSG Tunnel Address is determined by the DSG Agent and learned by the DSG Client through the DSG Address Table in the DCD message.

DSG agent [b-ITU-T J.128]: The DSG Agent is the implementation of the DSG protocol within the CMTS. The DSG Agent creates the DSG Tunnel, places content from the DSG Server into the DSG Tunnel, and sends the DSG Tunnel to the DSG Client.

DSG basic mode [b-ITU-T J.128]: Operation without the DCD message. Address assignment is static. The DSG Tunnel Address is determined by the DSG Client and learned by the DSG Agent through configuration. This mode provides backwards compatibility with earlier versions of the DSG specification.

DSG channel [b-ITU-T J.128]: Any DOCSIS downstream channel that contains one or more DSG Tunnels.

DSG classifier [b-ITU-T J.128]: A description of layer 3 and layer 4 filtering applied to DSG Tunnel traffic. DSG Classifiers may be specified in the DSG Agent and sent as a component of the DSG Address Table in the DCD Message.

DSG client [b-ITU-T J.128], [b-ITU-T J.290]: The DSG Client terminates the DSG Tunnel and receives content from the DSG Server. There may be more than one DSG Client within a Set-top Device.

DSG client controller [b-ITU-T J.128]: The portion of the Set-top Device that handles the processing of DCD messages and makes decisions regarding the forwarding of DSG Tunnels within the Set-top Device.

DSG client ID [b-ITU-T J.128]: This is an identifier that uniquely identifies a DSG Client. The DSG Client ID is unique per DSG Client, but is not unique per Set-top Device as the same DSG Client which provides the same function may exist in multiple Set-top Devices. In DSG Basic Mode, the DSG Client ID is a 6-byte MAC address. In DSG Advanced Mode, the DSG Client ID may additionally be a 2-byte Application ID, a 2-byte CA_system_ID, or a broadcast ID.

DSG eCM [b-ITU-T J.128]: A DOCSIS Cable Modem that has been embedded into a Set-top Device and includes DSG functionality.

DSG rule [b-ITU-T J.128]: A row entry within the DSG Address Table that assigns a DSG Client ID to a DSG Tunnel Address.

DSG server [b-ITU-T J.128]: The DSG Server refers to any server such as an Application Server or other network attached device that provides content that is transported through the DSG Tunnel to the DSG Client.

DSG tunnel [b-ITU-T J.128]: A stream of packets sent from the CMTS to the Set-top Terminal. In DSG Basic Mode, a DSG Tunnel is identified solely by its DSG Tunnel Address; all of the DSG Tunnel's packets use the same DSG Tunnel Address and different DSG Tunnels use different DSG Tunnel Addresses. In DSG Advanced Mode, a DSG Tunnel might be identified solely by its DSG Tunnel Address, or it might be identified by a combination of the DSG Tunnel Address along with other DSG Rule parameters: UCID List, Classifier IP addresses, and UDP port numbers.

DSG tunnel address [b-ITU-T J.128]: This specifically refers to the destination MAC address of the DSG Tunnel. If the source MAC address, the destination IP address, or the source IP address is to be referenced, then that reference must be explicitly stated.

DTI minimum clock oscillator [b-ITU-T J.211]: An oscillator that supports all the client clock performance requirements with holdover limited to the minimum bridging time. A non-ovenized oscillator can be used to support this oscillator category.

DTV service [b-ITU-T J.205]: This is the unit for delivering audio-visual content to the end users. In a more extensive definition (the one adopted in this Recommendation), this unit also comprehends the delivery of interactive content. It constitutes an editorially consistent whole and it is an aggregation of different kinds of service components.

DTV service component [b-ITU-T J.205]: Each one of the audio, visual or interactive elements that compose a digital television (DTV) service.

DTV service component delivery mechanism [b-ITU-T J.205]: Used to refer to any mechanism, channel or medium to deliver digital television (DTV) service components to an integrated broadcast and broadband (IBB) DTV receiver.

DTV service content [b-ITU-T J.205]: Audio/visual/interactive components delivered within a digital television (DTV) service as single editorially consistent whole.

dual-platform version of the smart TV operating system (TVOS-C) [b-ITU-T J.1201]: A TVOS software which supports both Java and web applications.

dynamic host configuration protocol (DHCP) [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: An Internet Protocol used for assigning network-layer (IP) addresses.

dynamic host configuration protocol (DHCP) (based on [IETF RFC 2131]) [b-ITU-T J.296]: A protocol used to automatically configure terminals on a TCP/IP network. For example, this protocol allows IP addresses to be assigned dynamically.

dynamic host configuration protocol (DHCP) [b-ITU-T J.460.1]: The protocol used to configure an endpoint on an IP network commonly used to assign it an IP address, and recently extended to configure the location of the endpoint.

dynamic invocation interface (DII) [b-ITU-T J.380]: A method of accessing web service resources through low level application programming interface (API) functions.

dynamic quality of service (DQoS) [b-ITU-T J.161]: Assigned on the fly for each communication depending on the QoS requested.

dynamic Quality of Service (DQoS) [b-ITU-T J.191]: [IPCablecom] Assigned on the fly for each communication depending on the QoS requested.

dynamic quality of service [b-ITU-T J.361]: A quality of service assigned on the fly for each communication depending on the QoS requested.

dynamic range [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: The ratio between the greatest signal power that can be transmitted over a multichannel analogue transmission system without exceeding distortion or other performance limits, and the least signal power that can be utilized without exceeding noise, error rate or other performance limits.

Dynamically-joined Multicast Sessions [b-ITU-T J.222.3]: Multicast sessions joined after cable modem registration.

E.164 [b-ITU-T J.360]: E.164 is an ITU-T Recommendation which defines the international public telecommunication numbering plan used in the PSTN and other data networks.

E1 [b-ITU-T J.214]: E1 is a physical layer telephony protocol carrying data at 2048 Mbit/s. It can carry up to 32 DS0s, each of which can carry a telephone conversation.

embedded common interface (ECI) [b-ITU-T J.1010], [b-ITU-T J.1011]: Architecture and system to be specified in the ETSI ISG "Embedded CI", which allows the development and implementation of software-based swappable ECI clients in customer premises equipment (CPE) and thus provides interoperability of CPE devices with respect to ECI.

ECI (embedded CI) [b-ITU-T J.1012], [b-ITU-T J.1013], [b-ITU-T J.1014]: Architecture and the system specified in the ETSI ISG "Embedded CI", which allows the development and implementation of software-based swappable **ECI Clients** in customer premises equipment (**CPE**) and thus provides interoperability of **CPEs** with respect to **ECI**.

ECI application [b-ITU-T J.1012]: HTML based application hosted on an **ECI Client**, and running in a dedicated browser session for the purpose of interacting with the **User** and providing **User** input to the **ECI Client**.

ECI chip manufacturer [b-ITU-T J.1012]: A company providing systems on a chip that implement **ECI** specified chipset functionality.

embedded common interface client (ECI client) [b-ITU-T J.1010]: Implementation of a CA/DRM client which is compliant with the planned Embedded CI specifications. Note that it is the software module in a CPE which provides all means to receive, in a protected manner, a consumer's entitlements and rights concerning the content that is distributed by a content distributor or operator. It also receives the conditions under which a right or an entitlement can be used by the consumer, and the keys to decrypt the various messages and content. An Embedded CI client may have an associated smart card.

ECI client (embedded CI client) [b-ITU-T J.1011], [b-ITU-T J.1012]: Implementation of a CA/DRM client which is compliant with the embedded CI specifications.

Note that it is the software module in a CPE which provides all means to receive, in a protected manner and to control execution of a consumer's entitlements and rights concerning the content that is distributed by a content distributor or operator. It also receives the conditions under which a right or an entitlement can be used by the consumer and the keys to decrypt the various messages and content.

ECI Client (Embedded CI Client) [b-ITU-T J.1014]: Implementation of a CA/DRM client that is compliant with the **ECI** specifications.

ECI client [b-ITU-T J.1013]: Implementation of a conditional access (CA)/digital rights management (DRM) (CA/DRM) client which is compliant with the embedded common interface (**ECI**) specifications.

NOTE – It is the software module in a **customer premises equipment (CPE)** which provides all means to receive, in a protected manner, and to control execution of a consumer's entitlements and rights concerning the content that is distributed by a content distributor or **Operator**. It also receives the conditions under which a right or an entitlement can be used by the consumer, and the keys to decrypt the various messages and content.

ECI client image [b-ITU-T J.1012]: File with software as virtual machine (VM) code, and initialization data required by the **ECI Client Loader**.

ECI client loader [b-ITU-T J.1011]: Software module part of the **ECI host** which allows downloading, verification and installation of new **ECI client** software in an **ECI container** of the **ECI host**.

ECI Client Loader [b-ITU-T J.1014]: Functionality of the **ECI Host** that uses the **AS System** to exclusively provide the function, verify and install a new **ECI Client** software image in an **ECI container** of the **ECI Host**.

ECI client loader [b-ITU-T J.1012]: The software module part of the **ECI Host**, which allows downloading, verifying and installing new **ECI Client** software in an **ECI Container** of the **ECI Host**.

ECI container (embedded CI container) [b-ITU-T J.1011]: Abstract concept which provides an isolated environment comprised of a virtual machine and a single **ECI client**.

ECI container [b-ITU-T J.1012]: A single VM instance with complementary support libraries and **ECI API** that permits a single instance of an **ECI Client** to run on a **CPE**.

ECI ecosystem [b-ITU-T J.1014]: Commercial operation consisting of a **TA** and several platforms and **ECI** compliant **CPEs** in the field.

ECI ecosystem [b-ITU-T J.1012]: A commercial operation consisting of a **TA** and several platforms and **ECI** compliant **CPEs** in the field.

ECI ecosystem [b-ITU-T J.1015], [b-ITU-T J.1015.1]: A commercial operation consisting of a trust authority and several platforms and **ECI** – compliant customer premises equipment in the field.

embedded common interface (ECI) host [b-ITU-T J.1010]: Hardware and software system of a **CPE**, which covers **ECI** related functionalities and has interfaces to an **ECI Client**. Note that the **ECI host** is one part of the **CPE** firmware.

ECI host [b-ITU-T J.1011]: Hardware and software system of a **CPE**, which covers **ECI** related functionalities and has interfaces to an **ECI client**. Note that the **ECI host** is one part of the **CPE** firmware. The **ECI host** is responsible for ensuring the isolation of each **ECI container** and provides authenticated loading of **ECI clients**.

ECI host [b-ITU-T J.1012], [b-ITU-T J.1013]: The hardware and software system of a **CPE**, which covers **ECI** related functionalities and has interfaces to an **ECI client**.

NOTE – The **ECI host** is one part of the **CPE** firmware.

ECI host image [b-ITU-T J.1012]: File(s) with software and initialization data for an **ECI** environment

NOTE 1 – An **ECI Host** image may consist of a number of **ECI host image** files.

NOTE 2 – It may also contain other software that does not cause interference with or permit undesirable observation of the **ECI Host**.

ECI host loader [b-ITU-T J.1011]: Software module which allows downloading, verification and installation of (new) ECI host software into a CPE. Note that in a multi-stage loading configuration this term is used to refer to all security critical loading functions involved in loading the ECI host.

ECI host loader [b-ITU-T J.1014]: CPE bootloading functionality that uses the **AS system** to exclusively provide the function to verify and install **ECI host** software into a CPE.

NOTE – In a multi-stage loading configuration this term is used to refer to all security critical loading functions involved in loading the **ECI host**.

ECI host loader [b-ITU-T J.1012]: Software module, which allows downloading, verifying and installing **ECI host** software into a **CPE**.

NOTE – In a multi-stage loading configuration this term is used to refer to all security critical loading functions involved in loading the **ECI host**.

ECI root certificate [b-ITU-T J.1012]: **Certificate** which issues to verify items approved by an **ECI TA**.

ECI root key [b-ITU-T J.1014]: Public key providing the origin of authentication for **ECI** certified entities and **Certificates**.

eCM [b-ITU-T J.126]: An eCM is an embedded Cable Modem, i.e., one that has been enhanced with the features of this Recommendation.

eCM [b-ITU-T J.369], [b-ITU-T J.370], [b-ITU-T J.460.4] The logical DOCSIS CM component of a E-UE, complies with DOCSIS, eDOCSIS and IPCablecom requirements.

ECMAScript [b-ITU-T J.200]: Programming language defined by [b-ECMAScript].

edge cloud [b-ITU-T J.1303]: The cloud which deployed close to users' locations and has a limited set of services compared to the central cloud.

Edge QAM [b-ITU-T J.291]: A device that provides QAM modulation to increase capacity in existing legacy cable networks.

edge QAM modulator (EQAM) [b-ITU-T J.212, [b-ITU-T J.210]: A headend or hub device that receives packets of digital video or data. It re-packetizes the video or data into an MPEG transport stream and digitally modulates the digital transport stream onto a downstream RF carrier using quadrature amplitude modulation (QAM).

eDOCSIS [b-ITU-T J.218]: Embedding another functional device within a cable modem.

eDOCSIS [b-ITU-T J.126]: eDOCSIS is a CableLabs specification that defines the interface between the eCM and an eSAFE. The international version of the specification is this Recommendation.

eDOCSIS device [b-ITU-T J.126]: An eDOCSIS device is one that includes an eCM entity, one or more eSAFEs and supports a single software image using a CableModem secured software download mechanism.

EDTV-II sampling [b-ITU-T J.88]: 14.3 MHz with 8-bit precision.

EDTV-II signals [b-ITU-T J.88]: EDTV-II signals comprise NTSC-compatible components transmitted in the centre part of the picture and helper components located in the upper and lower parts of the picture.

effective frame rate [b-ITU-T J.246], [b-ITU-T J.247]: The number of unique frames (i.e., total frames-repeated frames) per second.

effectively transmitted signals in sound-programme transmission [b-ITU-T N.1], [b-ITU-T J.13]: For sound-programme transmission, a signal at a particular frequency is said to be effectively transmitted if the nominal overall loss at that frequency does not exceed the nominal overall loss at 800 Hz by more than 4.3 dB. This should not be confused with the analogous definition concerning

telephony circuits given in [1]. *[CCITT Recommendation General performance objectives applicable to all modern international circuits and national extension circuits, Vol. III, Rec. G.151, § 1, Note 1.]*

For sound-programme circuits, the overall loss (relative to that at 800 Hz) defining effectively transmitted frequency is 1.4 dB, i.e., about one-third of the allowance.

electronic code book (ECB) [b-ITU-T J.181 Amendment 1]: This is a specific method of encryption. It is one of the methods used in DES.

electronic key [b-ITU-T J.93], [b-ITU-T J.95]: The term for data signals that are used to control the descrambling process in subscriber decoders.

NOTE – There are at least three types of electronic keys: those used for television signal streams, those used for protecting control system operations, and those used for the distribution of electronic keys on the cable system. See also "authorization coding" which is also effectively a key.

electronic programme guide [b-ITU-T J.90]: A structured multimedia database, intended to provide information on programmes to be broadcast or cablecast.

element uniqueness [b-ITU-T J.380.2]: Generally, XML elements shall be unique according to existing XML compliance where the element's distinctiveness is unambiguous and unique relative to its immediate spatial relationship to other elements.

elementary stream (ES) (based on [ITU-T J.200]) [b-ITU-T J.296]: A basic stream that contains video data, audio data, or private data. A single elementary stream is carried in a sequence of PES packets with one and only one stream.

embedded MTA device (e-MTA) [b-ITU-T J.126]: An eDOCSIS device that contains both an eMTA and an eCM.

embedded multimedia terminal adapter (eMTA) [b-ITU-T J.126]: An embedded version of an MTA.

Embedded Multimedia Terminal Adapter (E-MTA) [b-ITU-T J.191]: [IPCablecom] A single node that contains both an MTA and a cable modem.

E-MTA [b-ITU-T J.173]: Term used in this Recommendation generically representing the CM and MTA combination. This could be an embedded MTA or a stand-alone MTA.

embedded portal service element (ePS) [b-ITU-T J.126]: An IPCable2Home-compliant eSAFE that provides management and network address translation functions between the cable data network and the home network.

embedded PS [b-ITU-T J.192]: A Portal Services element that does not use a standalone interface to connect to a CM.

embedded PS [b-ITU-T J.290] A portal services element that does not use a stand-alone interface to connect to a set-top box device.

embedded security eSTB [b-ITU-T J.126]: An eSTB with integrated security functions.

embedded service/application functional entity (eSAFE) [b-ITU-T J.126]: An embedded version of a specified application, such as an IPCablecom multimedia terminal adapter (MTA), that provides a service using the CableModem IP platform, or a function or set of functions, such as the IPCable2Home Portal Service logical element, that supports the delivery of one or more services over an IP platform.

embedded set-top box (eSTB) [b-ITU-T J.126]: An eSAFE that is compliant with [b-ITU-T J.128], providing video, audio and data services. An example OpenCable-compliant eSTB is further specified in [b-HOST2.0].

embedded set-top box [b-ITU-T J.128]: An embedded set-top box is an embedded Service Application Functional Entity (eSAFE) defined in [b-ITU-T J.126]. It includes the DSG Client(s), a

DSG Client Controller, an embedded processor for an application environment, and either an embedded or removable module for Conditional Access.

embedded STB [b-ITU-T J.193]: A Set-Top-Box that does not use a stand-alone interface to connect to a RG.

embedded set-top box [b-ITU-T J.290]: An embedded set-top box is an embedded service application functional entity. It includes the DSG client(s), a DSG client controller, an embedded processor for an application environment, and either an embedded or removable module for conditional access.

embedded TDM emulator adapter (eTEA) [b-ITU-T J.126]: An eSAFE that is compliant with [TEI], providing T1 and E1 Circuit transport over IP.

embedded user equipment (E-UE) [b-ITU-T J.369], [b-ITU-T J.370], [b-ITU-T J.460.4]: A single physical device embedded with an eDOCSIS-compliant DOCSIS Cable Modem and an IPCablecom eUE.

emergency alert system [b-ITU-T J.193]: A system, within which the NG-STB participates, that allows a service provider to distribute public emergency alarms and information about the public emergency to all of the customers attached to the cable network.

emergency alert system (EAS) [b-ITU-T J.294]: A system, within which the H-STB participates, that allows a service provider to distribute public emergency alarms and information about the public emergency to all of the customers attached to the cable network.

emergency services gateway (ESGW) [b-ITU-T J.460.1]: A device which bridges the VoIP network to the Selective Router. In IPCablecom2 this is a function of the MGC, SG and MG.

emergency services query key (ESQK) [b-ITU-T J.460.1]: A code that looks like a telephone number that is temporarily assigned to a VoIP 9-1-1 call by the VPC and is used as the key to the ALI database to retrieve location information for that call.

emergency services routing number (ESRN) [b-ITU-T J.460.1]: A code that is used to route a VoIP 9-1-1 call to the correct ESGW and also to choose an appropriate trunk group on that ESGW that connects to a specific Selective Router.

emergency situation [b-ITU-T J.260]: A situation, of serious nature, that develops suddenly and unexpectedly. Extensive immediate important efforts, facilitated by telecommunications, may be required to restore a state of normality to avoid further risk to people or property. If this situation escalates, it may become a crisis and/or disaster.

emergency warning system [b-ITU-T J.296]: An emergency warning system is used for disaster broadcasts. Its start/control signal forces receiver units to receive the disaster broadcast programme.

enabler [b-ITU-T J.367]: A term used by OMA to mean "a technology intended for use in the development, deployment or operation of a service". Examples of OMA Enablers are Device Management, Push to-Talk over Cellular (PoC), Presence SIMPLE, and XML Document Management (XDM).

encryption [b-ITU-T J.170], [b-ITU-T J.178], [b-ITU-T J.361]: A method used to translate information in plaintext into ciphertext.

encryption [b-ITU-T J.93], [b-ITU-T J.95]: The process of scrambling signals to avoid unauthorized access.

encryption key [b-ITU-T J.178]: The key used in a cryptographic algorithm to translate the plaintext to ciphertext.

encryption mode indicator bits (EMI Bits) [b-ITU-T J.197]: Two bits, associated with protected content, that specify the copy operations that are permissible for the associated content.

end user [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: A human being, organization, or telecommunications system that accesses the network in order to communicate via the services provided by the network.

endpoint [b-ITU-T J.170], [b-ITU-T J.177], [b-ITU-T J.178], [b-ITU-T J.361]: A Terminal, Gateway or Multipoint Conference Unit (MCU).

endpoint [b-ITU-T J.380.1]: An address, a uniform resource identifier (URI), or a specific location where a logical service may be found and consumed.

endpoint [b-ITU-T J.380.2]: An address, a Uniform Resource Identifier (URI), or a specific location where a logical service function or functions shall be found and consumed via message exchange.

engineering change notice (ECN) [b-ITU-T J.112 Annex B]: The final step in the procedure to change specifications.

engineering change order (ECO) [b-ITU-T J.112 Annex B]: The second step in the procedure to change specifications. DOCSIS posts ECO to website EC table and ECO page (with indication of ECO Comment Deadline). DOCSIS issues ECO announcement to DOCSIS-announce and working group mail lists (with indication of ECO Comment Deadline).

engineering change request (ECR) [b-ITU-T J.112 Annex B]: The first step in the procedure to change specifications. DOCSIS issues ECR number, posts to website EC table and ECR page. DOCSIS sends ECR to subject area working group mail list (and author).

engineering TS [b-ITU-T J.296]: The engineering transport stream (TS) is a kind of TS signal that transmits downloaded software contents or watching control information on a satellite broadcast network.

enhanced broadcasting [b-ITU-T J.700]: A system that is capable of delivering broadcast programmes over existing secondary distribution networks composed of HFC or FTTx with enhancements by applications and/or services transferred over IP-enabled networks.

entitlement control message (ECM) [b-ITU-T J.181 Amendment 1]: These are private conditional access information messages which specify control words and possibly other, typically stream-specific, scrambling and/or control parameters.

entitlement control messages (ECMs) [b-ITU-T J.290]: An ECM is an encrypted message that contains access criteria to various service tiers and a control word (CW).

entitlement management messages (EMMs) [b-ITU-T J.94]: Private Conditional Access information which specifies the authorization levels or the services of specific decoders; they may be addressed to individual decoder or groups of decoders.

entitlement management message (EMM) [b-ITU-T J.181 Amendment 1]: These are private conditional access information messages which specify the authorization levels or the services of specific decoders. They may be addressed to single decoders or groups of decoders.

entitlement management messages (EMMs) [b-ITU-T J.290]: The EMM contains the actual authorization data and shall be sent in a secure method to each CPE device.

entitlements [b-ITU-T J.702]: Refer to authorization level(s) including conditional access information that a subscriber can use to access certain IPTV services in his/her IPTV TD.

entity (entities) [b-ITU-T J.1012], [b-ITU-T J.1014]: Organization (e.g., **Manufacturer, Operator** or **Security Vendor**) or real-world item (e.g., **ECI host, Platform Operation** or **ECI client**) identified by a unique ID in an **ECI ecosystem**.

EPG provider [b-ITU-T J.90]: The entity that collects, collates and assembles the elements of information that constitute the EPG database.

equivalent impairment [b-ITU-T J.67]: The data signal quality is evaluated by adding a Gaussian noise signal to the received signal and plotting the bit-error ratio versus the noise level. For a given bit-error ratio, the difference in dB between the measured noise level and the theoretical level produces, by definition, the "equivalent impairment".

eRouter [b-ITU-T J.126]: DOCSIS Embedded Router. An eSAFE that is compliant with eRouter in [b-ITU-T J.218], providing version 4 and/or version 6 Internet Protocol-formatted data forwarding, address configuration, and Domain Name services to Internet Protocol host devices connected to the cable modem in a customer's premises.

eRouter [b-ITU-T J.218]: An eSAFE device that is implemented in conjunction with the DOCSIS embedded cable modem.

errored second [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: Any one second interval containing at least one bit error.

eTEA [b-ITU-T J.214]: An eTEA is an eDOCSIS eSAFE; an embedded version of a TEA.

eUE [b-ITU-T J.369], [b-ITU-T J.370], [b-ITU-T J.460.4]: The logical IPCablecom UE component of a E-UE, complies with eSAFE and IPCablecom requirements.

event [b-ITU-T J.94]: A grouping of elementary broadcast data streams with a defined start and end time belonging to a common service, e.g., first half of a football match, News Flash, first part of an entertainment show.

event [b-ITU-T J.181], [b-ITU-T J.181 Amendment 1], [b-ITU-T J.287]: A splice event or a viewing event.

event [b-ITU-T J.380.2]: A general term indicating something has happened or occurred.

event message [b-ITU-T J.164]: An Event Message is a set of data, representative of an event in the IPCablecom architecture that could be indicative of usage of one or more billable IPCablecom capabilities. An Event Message by itself may not be fully indicative of a customer's billable activities, but an Event Message correlated with other Event Messages builds the basis of a billable Usage Detail Record.

event message [b-ITU-T J.170], [b-ITU-T J.178]: Message capturing a single portion of a connection.

execution engine [b-ITU-T J.200]: A subsystem in a receiver that evaluates and executes procedural applications consisting of computer language instructions and associated data and media content. An execution engine may be implemented with an operating system, computer language compilers, interpreters and application programming interfaces (APIs), which a procedural application may use to present audiovisual content, interact with a user, or execute other tasks that are not evident to the user. A common example of an execution engine is the JavaTV software environment, using the Java programming language and byte code interpreter, JavaTV APIs, and a Java virtual machine for program execution.

export chain [b-ITU-T J.1012]: Chain of **certificates** used for authorization of export to one or a group of **Micro DRM Systems**.

export connection [b-ITU-T J.1014]: Authenticated relation between an **AS slot** decrypting content and an **AS slot** subsequently re-encrypting the decrypted content indicating such re-encryption is permitted.

export connection [b-ITU-T J.1012]: Authenticated relation between an **ECI Client** that can decrypt content and a **Micro Server** that can re-encrypt content.

export group [b-ITU-T J.1012]: Group of **Micro DRM-Systems**, to which export is permitted.

extended subsplit [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.122]: A frequency division scheme that allows bidirectional traffic on a single coaxial cable; in North America, reverse

path signals come to the Headend from 5 to 42 MHz, and forward path signals go from the Headend from 50 or 54 MHz to the upper frequency limit.

extended upstream frequency range [b-ITU-T J.222.1]: An optional upstream frequency range over which a CM may be capable of transmitting. In the technology option that uses 6 MHz downstream channelization, this is 5-85 MHz. In the technology option that uses 8 MHz downstream channelization, no extended upstream frequency range is defined.

extensible HTML (XHTML) [b-ITU-T J.200]: Reformulation of HTML [b-W3C HTML] as an application language of XML [b-W3C XML].

eye diagram [b-ITU-T J.67]: The eye diagram is defined as the superposition of all the configurations of the data signals.

factor [b-ITU-T J.262]: A factor, as used in the process of authentication, represents either something known (such as a PIN, password or passphrase), something possessed (such as a card with a magnetic stripe or a security token) or something unique (such as a finger or voice print) about the individual whose identity is to be authenticated.

fast mode [b-ITU-T J.211]: An operating condition of a clock in which it is locked to an external reference and is using time constants, which are reduced to quickly bring the local oscillator's frequency into approximate agreement with the synchronization reference frequency.

Father [b-ITU-T J.1014]: Signatory of the **Certificate** of the **Child Entity**

NOTE – **Father, Children, Brother** refer to **entities** that manage **Certificates**.

Father [b-ITU-T J.1012]: Signatory of the **Certificate** of the **Child Entity**.

NOTE – **Father, Children, Brother** are referring to entities that manage **Certificates**.

fault reporting centre [b-ITU-T N.51]: A centre at a receiving country dealing with enquiries and fault reports concerning transmission to TVROs not related to an ITC.

feeder cable [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: Coaxial cables that run along streets within the served area and connect between the individual taps which serve the customer drops.

fetcher [b-ITU-T J.367]: A form of Watcher that has asked the Presence Service for the Presence Information of one or more Presentities, but is not requesting a Notification from the Presence Service of (future) changes in a Presentity's Presence Information [b-OMA RD-PRS].

fibre distributed data interface (FDDI) [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: A fibre-based LAN standard.

fibre node [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.116], [b-ITU-T J.122]: A point of interface between a fibre trunk and the coaxial distribution.

field of view transmission [b-ITU-T J.1631]: Focuses on the high-quality transmission of images within the current FOV.

field-time waveform distortion [b-ITU-T J.67]: If a square-wave signal with a period of the same order as one field and of nominal luminance amplitude is applied to the input of the circuit, the field-time waveform distortion is defined as the change in shape of the square wave at the output. A period at the beginning and end of the square wave, equivalent to the duration of a few lines, is excluded from the measurement.

file downloading [b-ITU-T J.127]: Program transmission method whereby the program starts playing after the entire data has been downloaded.

final edited master [b-ITU-T J.248]: The final edited master is the final instance of a television program as it is provided at the end of the program production chain, ready to be dispatched to the distributors and the end users.

fitness function [b-ITU-T J.1306]: An objective function used to calculate the gap between potential solutions and established goals in evolutionary computation paradigm.

fixed stuff [b-ITU-T J.131], [b-ITU-T J.132]: Bytes that are used to fill up unused data positions.

flooding [b-ITU-T J.213]: An operation of an L2 bridge in which it replicates an L2PDU addressed to a group MAC or unlearned individual MAC address to all Bridge Ports other than the L2PDU's ingress port.

flow [b-ITU-T J.212]: A stream of packets in DEPI used to transport data of a certain priority from the M-CMTS Core to a particular QAM channel of the EQAM. In PSP operation, there can exist several flows per QAM channel.

forbidden [b-ITU-T J.94]: The term "forbidden" when used in the clauses defining the coded bitstream, indicates that the value shall never be used.

formatter [b-ITU-T J.200]: A subsystem in a receiver that evaluates and presents declarative applications consisting of content in multiple formats. A formatter also responds to formatting information associated with the content, to user inputs, and to script statements that control presentation behaviour and initiate other processes in response to user input and other events. An example of a formatter is a nested context language (NCL) [b-NCL] formatter engine.

forward channel [b-ITU-T J.112], [b-ITU-T J.112 Annex B], [b-ITU-T J.112 Annex C], [b-ITU-T J.122]: The direction of RF signal flow away from the headend toward the end user; equivalent to Downstream.

forward channel [b-ITU-T J.116]: The direction of RF signal flow away from the BTS toward the end user; synonymous to Downstream.

forward data channel [b-ITU-T J.184]: A data channel carried from the headend to the terminal device in a modulated channel at a rate of 1.544 to 3.088 Mbit/s. The FDC carries IP traffic only for:

- Conditional access for analogue signals.
- Entitlement management messages for digital signals.
- General messaging.
- Application download.
- PC data services.
- Variable bit rate (VBR) download.
- Broadcast data.
- Network management.

forward error correction (FEC) [b-ITU-T J.210]: A class of methods for controlling errors in a communication system. FEC sends parity information with the data which can be used by the receiver to check and correct the data.

fractional [b-ITU-T J.214]: A fractional T1 or fractional E1 carries only a portion of the total number of DS0s that a T1 or E1 carries.

fragmented TLV packet [b-ITU-T J.183], [b-ITU-T J.288]: A fixed-length packet that has fragmented type-length-value (TLV).

frame [b-ITU-T J.122]: See MAC frame, S-CDMA frame and MPEG frame.

frame check sequence [b-ITU-T J.195.2]: A redundant sequence that is used for verifying the correctness of the received data.

frame loss ratio (FLR) [b-ITU-T J.141]: The ratio of errored data frames with respect to total number of frames transmitted, when the data frames are transmitted over a noisy channel.

frame rate [b-ITU-T J.249], [b-ITU-T J.341], [b-ITU-T J.342], [b-ITU-T J.246], [b-ITU-T J.247]: The number of (progressive) frames displayed per second (fps).

frame synchronizer [b-ITU-T J.248]: A device that receives a video signal from a remote source, and synchronizes it to the local video synchronization pulses, in order that it may be seamlessly mixed with locally generated video signals.

free-run mode [b-ITU-T J.211]: An operating condition of a DTI clock whose output signals are internally controlled by the DTI server. The clock has never had, or has lost, external reference input and has no access to stored data that was acquired from a previously connected external reference during the time after the last power cycle. Free-run ends when the clock output is influenced by an external reference or the process to achieve lock to an external reference. Free-run may provide needed stability when external reference has been lost or not equipped.

frequency division duplex (FDD) data-over-cable service interface specification (DOCSIS) mode [b-ITU-T J.224]: An extension of the fourth generation of cable modem specifications supporting legacy high-split and also providing extended splits up to 684 MHz in an operational band plan which is referred to as ultra-high split (UHS). The FDD mode of operation also introduces expansion of usable downstream spectrum up to 1794 MHz.

FTV [b-ITU-T J.901]: Video media system that can provide audiences of freedom to choose their viewpoint.

fukinuki hole [b-ITU-T J.88]: Frequency regions around the colour sub-carrier of the compatible centre part of EDTV-II images, where normal NTSC signals have lower spectral density.

full duplex (FDX) data-over-cable service interface specification (DOCSIS) mode [b-ITU-T J.224]: An extension of the fourth generation of cable modem specifications that is targeted at significantly increasing upstream capacity by using the spectrum currently used for downstream transmission for simultaneous upstream and downstream communications.

full period terminated service [b-ITU-T J.93], [b-ITU-T J.95]: A subscription service that is always available to subscribers during the operating hours of the delivery system.

NOTE – By contrast, other services, such as a pay-per-view feature film, are only available for a specific period of time.

full-view transmission [b-ITU-T J.1631]: Involves sending 360° images to terminals. When users turn their heads and images they see are switched according to their Field of View (FOV), and terminals perform just-in-time processing on images, such as bit stream parsing, video decoding and image rendering.

function [b-ITU-T J.190]: Capabilities that compromise logical elements.

function [b-ITU-T J.200]: A process which conveys or transforms data in a predictable way. It may be effected by hardware, software or a combination of both.

functional component interface [b-ITU-T J.1201]: An interface for a software module in the functional component layer defined in this Recommendation.

Gain/frequency response [b-ITU-T J.67]: The gain/frequency characteristic of the circuit is defined as the variation in gain between the input and the output of the circuit over the frequency band extending from the field repetition frequency to the nominal cut-off frequency of the MAC signal, relative to the gain at a suitable reference frequency.

gateway [b-ITU-T J.170], [b-ITU-T J.178], [b-ITU-T J.361]: Devices bridging between the IP-Cablecom IP voice communication world and the PSTN. Examples are the media gateway, which provides the bearer circuit interfaces to the PSTN and transcodes the media stream, and the signalling gateway, which sends and receives circuit switched network signalling to the edge of the IP-Cablecom network.
generic format of transport stream [b-ITU-T J.183]: A data stream other than Motion Picture Experts Group version 2 (MPEG-2) transport stream (TS), e.g., type-length-value (TLV). For