BS IEC 62766-1:2017

BSI Standards Publication

# Consumer terminal function for access to IPTV and open internet multimedia services

Part 1: General

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# National foreword

This British Standard is the UK implementation of IEC 62766-1:2017.

The UK participation in its preparation was entrusted to Technical Committee EPL/100, Audio, video and multimedia systems and equipment.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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# IEC 62766-1

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# INTERNATIONAL STANDARD

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## Consumer terminal function for access to IPTV and open internet multimedia services –
## Part 1: General

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# CONSUMER TERMINAL FUNCTION FOR ACCESS TO IPTV AND OPEN INTERNET MULTIMEDIA SERVICES –

## Part 1: General

## FOREWORD

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A Category D liaison was set up between TC100 and the OPEN IPTV FORUM in 2011. The OPEN IPTV FORUM was merged with the Hybrid Broadcast Broadband Television (HbbTV) Association in 2014.

International Standard IEC 62766-1 has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this International Standard is based on the following documents:

| CDV | Report on voting |
|---|---|
| 100/2484/CDV | 100/2656/RVC |

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62766 series, published under the general title *Consumer terminal function for access to IPTV and open internet multimedia services,* can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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# INTRODUCTION

The IEC 62766 series is based on a series of specifications that was originally developed by the Open IPTV Forum (OIPF). They specify the user-to-network interface (UNI) for consumer terminals to access IPTV and open internet multimedia services over managed or non-managed networks as defined by OIPF.

The Open IPTV Forum (OIPF) IPTV solution provides specifications for an end-to-end platform for the deployment of IPTV services. Figure 1 shows a high-level logical view of the scope of the OIPF IPTV solution.

The Open IPTV Forum has developed an end-to-end solution to allow any consumer end-device, compliant to the Open IPTV Forum specifications, to access enriched and personalised IPTV services either in a managed or a non-managed network.

To that end, the Open IPTV Forum focuses on standardising the user-to-network interface (UNI) both for a managed and a non-managed network, as depicted in Figure 1.

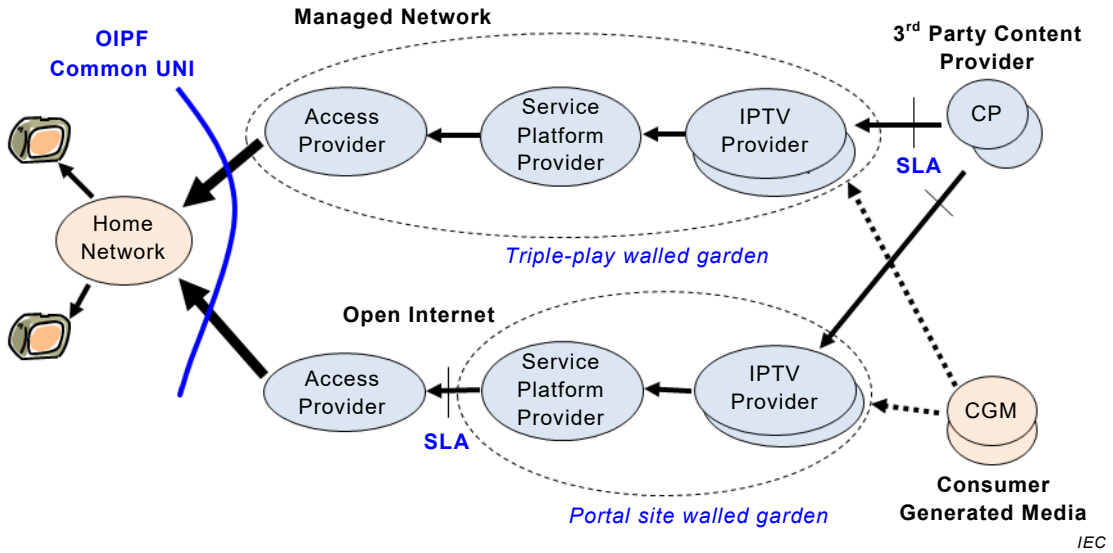


**Figure 1 – Open IPTV Forum scope**

Throughout the specifications, the terms “open Internet” and “unmanaged network” are used interchangeably to refer to the ability to access any service provider using any access network provider without any quality of service guarantees.

Managed network IPTV services are provided with QoS guarantees, for example within a triple-play walled garden.

Open Internet IPTV services are accessed via the Internet, without QoS guarantees, for example via a portal.

In both cases, IPTV services are accessed via a service platform that provides supporting facilities for multiple service providers.

Third-party content providers supply media assets that are delivered within the IPTV services.

The Open IPTV Forum (OIPF) specification for consumer terminal function and network interfaces for access to IPTV and open Internet multimedia services consist of the following multiple parts:

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- Part 1: General (this document)
- Part 2-1: Media formats
- Part 2-2: HTTP adaptive streaming
- Part 3: Content metadata
- Part 4-1: Protocols
- Part 4-2: Examples of IPTV protocol sequences
- Part 5-1: Declarative application environment
- Part 5-2: Web standards TV profile
- Part 6: Procedural application environment
- Part 7: Authentication, content protection and service protection
- Part 8: Profiles

This document (Part 1) defines general common elements and specifies the document structure, the scopes of, and relationships between the other parts, which deal with specific aspects of the OIPF consumer terminal function and network interfaces.

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# CONSUMER TERMINAL FUNCTION FOR ACCESS TO IPTV AND OPEN INTERNET MULTIMEDIA SERVICES –

## Part 1: General

## 1 Scope

This part of IEC 62766 defines general common elements and specifies the structure of the IEC 62766 series, the scopes of, and relationships between the other parts.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62766-2-1, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 2-1: Media formats*

IEC 62766-2-2, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 2-2: HTTP adaptive streaming*

IEC 62766-3, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 3: Content metadata*

IEC 62766-4-1, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 4-1: Protocols*

IEC 62766-4-2, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 4-2: Examples of IPTV protocol sequences*

IEC 62766-5-1, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 5-1: Declarative application environment*

IEC 62766-5-2, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 5-2: Web standards TV profile*

IEC 62766-6, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 6: Procedural application environment*

IEC 62766-7, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 7: Authentication, content protection and service protection*

IEC 62766-8, *Consumer terminal function for access to IPTV and open internet multimedia services – Part 8: Profiles*

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# 3 Terms, definitions and abbreviated terms

## 3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

**3.1.1**
**3DTV**
plano-stereoscopic three-dimensional television

**3.1.2**
**access network**
network infrastructure used by the access provider to deliver IPTV services to the consumer

Note 1 to entry: The access network infrastructure is used for the delivery of the content and may include quality of service management to ensure that appropriate network resources are available for the delivery of the content.

**3.1.3**
**application**
collection of assets and logic that together provide a service to the user

Note 1 to entry: Assets and logic may reside either in an application server or in the ITF or both.

**3.1.4**
**catch-up TV**
service that allows the end user, using an EPG or a portal, to watch linear TV programs that were previously broadcast

**3.1.5**
**consumer domain**
domain where the IPTV services are consumed

Note 1 to entry: A consumer domain can consist of a single terminal or a network of terminals and related devices for service consumption.

**3.1.6**
**consumer network**
local area network in which the IPTV terminal function is located

Note 1 to entry: Consumer networks include residential networks, wireless hot-spots, hotel networks, etc.

**3.1.7**
**consumer**
**end user**
**user**
individual who use the IPTV services

Note 1 to entry: End users (consumers) may include, for example, members of the same family.

**3.1.8**
**content**
instance of audio, video, audio-video information, or data

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**3.1.9**
**content guide**
**program guide**
on-screen guide to scheduled content and content on demand, allowing a user to navigate, select, and discover content by time, title, channel, genre, etc.

**3.1.10**
**content on demand**
**CoD**
service where a user can select the individual content items they want to watch from the list of available content

Note 1 to entry: Consumption of the content is started upon user request.

**3.1.11**
**content protection**
means to protect content from unauthorized usage

Note 1 to entry: Unauthorized usage includes, for example, redistribution, recording, playback, duplication, etc.

**3.1.12**
**content provider**
entity that provides content and associated usage rights to the IPTV service provider

**3.1.13**
**Internet**
worldwide, publicly accessible network of interconnected computer networks that transmit data by packet switching using the standard Internet Protocol (IP)

**3.1.14**
**IPTV service provider**
entity that offers IPTV services and which has a contractual relationship with the subscriber

**3.1.15**
**IPTV solution**
solution defined by the multi-part series of IEC 62766

**3.1.16**
**IPTV terminal function**
**ITF**
functionality within the consumer network that is responsible for terminating the media and control for an IPTV service

**3.1.17**
**local storage**
content storage within the administrative realm of the IPTV service provider, but not in their physical environment

Note 1 to entry: For example, local storage could be a partition of storage located in the residential network and allocated to the service provider to pre-load CoD.

**3.1.18**
**network based personal video recorder**
**nPVR**
provision of PVR functionality whereby the content is stored in the IPTV service provider domain

Note 1 to entry: The nPVR allows a user to schedule the recording of scheduled content programs. The user can later select the content they want to watch from the recorded content.

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**3.1.19**
**portal**
function of a service platform that provides an entry point to individual IPTV services to users via a GUI

**3.1.20**
**program**
segment of scheduled content with a defined beginning and end

**3.1.21**
**push CoD**
type of content on demand where the content is pre-loaded to the ITF local storage by the service provider

Note 1 to entry: The user has no direct control of what content is pre-loaded. However, the service provider may make the choice based on user preferences and habits. Content is available for direct consumption after the user selection is confirmed.

**3.1.22**
**residential network**
local network of devices (gateways and terminals) at the end user's premises

**3.1.23**
**scheduled content**
service where the play-out schedule is fixed by an entity other than the user

Note 1 to entry: The content is delivered to the user for immediate consumption.

**3.1.24**
**service**
content and applications provided by service platform providers and service providers

**3.1.25**
**service access protection**
means to protect IPTV services from unauthorized usage/access

Note 1 to entry: Such unauthorized usage or access include access from unauthorized users or a DOS attack.

**3.1.26**
**service platform provider**
entity which, based on a contractual relationship with IPTV service providers, provides the supporting functions for the delivery of IPTV services, which are not part of the IPTV service, but are required for managing its delivery

Note 1 to entry: Supporting functions for the delivery of IPTV services are, for example, charging, access control and other functions which are not part of the IPTV service.

**3.1.27**
**service protection**
means to protect contents (files or streams) during their delivery

**3.1.28**
**session portability**
ability of a given service/application to be switched from one device to another for a continuation of a session in real time

**3.1.29**
**start-over TV**
service that enables the end user to playback a linear TV program that is currently being broadcasted from its start

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**3.1.30**
**subscriber**
individual that makes the contract (subscription) with a service provider for the consumption of certain services

**3.1.31**
**trick mode**
facility to allow the user to control the playback of content

Note 1 to entry: The playback of content includes facilities such as pause, fast and slow playback, reverse playback, instant access, replay, forward and reverse skipping.

**3.1.32**
**user profile**
information associated with a specific user who is a part of a subscription

Note 1 to entry: Information includes, for example, viewing preferences.

## 3.2 Abbreviated terms

| | |
|---|---|
| AAC | Advanced Audio Coding |
| ADSL | Asymmetric Digital Subscriber Line |
| AG | Application Gateway |
| AKA | Authentication and Key Agreement |
| AP | Access Point and Authentication Proxy |
| API | Application Programming Interface |
| A-RACF | Access Resource Admission Control Function |
| AS | Application Server |
| ASM | Authentication and Session Management |
| AV | Authentication Vector |
| AVC | Advanced Video Coding |
| A/V | Audio and Video |
| BCG | Broadband Content Guide |
| BMP | Baseline Managed Profile |
| BTF | Basic Transport Function |
| CA | Conditional Access |
| CAC | Connectivity Admission Control |
| CAM | CA Module |
| CAS | Conditional Access System |
| CC | Cluster Controller |
| CD | Content Delivery |
| CDC | Connected Device Configuration |
| CDF | Content Delivery Function |
| CDN | Content Delivery Network |
| CDNC | CDN Controller |
| CDS | Content Directory Service |
| CE | Consumer Equipment |
| CENC | Common Encryption (in ISO base media file format files) |
| CG | Content Guide |
| CGM | Consumer Generated Media |

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| | |
|---|---|
| CI | Common Interface |
| CK | Ciphering Key |
| CoD | Content on Demand |
| CPE | Customer Premise Equipment |
| CPI | Content Provider Interface |
| CSP | Content and Service Protection |
| CSP-T | CSP Terminal based approach |
| CSPG | Content and Service Protection Gateway Gateway |
| CTD | Content Transformation Device |
| DAE | Declarative Application Environment |
| DASH | Dynamic Adaptive Streaming over HTTP |
| DCF | DRM Content Format |
| DHCP | Dynamic Host Configuration Protocol |
| DIFFServ | Differentiated Services |
| DLNA | Digital Living Network Alliance |
| DLNA DMC | DLNA Digital Media Controller |
| DLNA DMP | DLNA Digital Media Player |
| DLNA DMR | DLNA Digital Media Renderer |
| DLNA DMP | DLNA Digital Media Server |
| DOS | Denial of Service |
| DRM | Digital Rights Management |
| DSCP | DIFFServ Code Point |
| DSL | Digital Subscriber Line |
| DTCP-IP | Digital Transmission Content Protection over Internet Protocol |
| DTT | Digital Terrestrial Television |
| DVB-IP | Digital Video Broadcasting (over) Internet Protocol |
| ECMA | ECMA International – European association for standardizing information and communication systems |
| EIT | Event Information Table |
| EMP | Enhanced Management Profile |
| EPG | Electronic Program Guide |
| FCC | Fast Channel Change |
| FE | Functional Entity |
| FLUTE | File Delivery over Unidirectional Transport |
| GBA | Generic Bootstrapping Architecture |
| GEM | Globally Executable Multimedia home platform |
| GENA | General Event Notification Architecture |
| GPON | Gigabit Ethernet Passive Optical Network |
| GUI | Graphical User Interface |
| HAS | HTTP Adaptive Streaming |
| HD | High Definition |
| HDMI | High Definition Multimedia Interface |
| HE-AAC | High Efficiency AAC |

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