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**Consumer terminal function for access to IPTV and open internet multimedia services –
Part 3: Content metadata** (standards.iteh.ai)

**Fonction des terminaux grand public pour l'accès aux services IPTV et multimédias de l'internet ouvert –
Partie 3: Métadonnées de contenu**



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INTERNATIONAL STANDARD

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

**Fonction des terminaux grand public pour l'accès aux services IPTV et multimédias de l'internet ouvert –
Partie 3: Métadonnées de contenu**

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

Part 3: Content metadata

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The text of this standard is based on the following documents:

CDV	Report on voting
100/2489/CDV	100/2659/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.

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

This International Standard is to be used in conjunction with IEC 62766-1.

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

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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.

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

Part 3: Content metadata

1 Scope

This part of IEC 62766 specifies the aspects concerning content metadata.

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 62766-1¹, *Consumer terminal function for access to IPTV and open Internet multimedia services – Part 1: General*

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

IEC 62766-4-1², *Consumer terminal function for access to IPTV and open Internet multimedia services – Part 4-1 – Protocols*

IEC 62766-5-1³, *Consumer terminal function for access to IPTV and open Internet multimedia services – Part 5 – Declarative application environment*

IEC 62766-6⁴, *Consumer terminal function for access to IPTV and open Internet multimedia services – Part 6 – Procedural application environment*

IEC 62766-7⁵, *Consumer terminal function for access to IPTV and open Internet multimedia services – Part 7 – Authentication, content protection and service protection*

ISO/IEC 15938-5, May 2003, *Multimedia Content description Interface – Part 5: Multimedia description schemes*

ETSI EN 300 468 V1.13.1 (2012-08), *Digital Video Broadcasting: Specification for Service Information (SI) in DVB systems*

ETSI TS 102 034 V1.5.1 (2014-05), *Digital Video Broadcasting: Transport of MPEG-2 Based DVB Services over IP Based Networks*

¹ Under preparation. Stage at the time of publication: IEC/CDV 62766-1:2015

² Under preparation. Stage at the time of publication: IEC/CDV 62766-4-1:2015

³ Under preparation. Stage at the time of publication: IEC/CDV 62766-5-1:2015

⁴ Under preparation. Stage at the time of publication: IEC/CDV 62766-6:2015

⁵ Under preparation. Stage at the time of publication: IEC/CDV 62766-7:2015

ETSI TS 102 323 V1.2.1 (2005-11), *Digital Video Broadcasting (DVB); Carriage and signalling of TV-Anytime information in DVB transport streams*

ETSI TS 102 539 V1.3.1 (2010-04), *Digital Video Broadcasting: Carriage of Broadband Content Guide (BCG) information over Internet Protocol*

ETSI TS 102 728 V1.1.1 (2010-01), *Digital Video Broadcasting (DVB); Globally Executable MHP (GEM) Specification 1.2.2 (including IPTV)*

ETSI TS 102 809 v1.2.1 (2013-07), *Digital Video Broadcasting (DVB); Signalling and carriage of interactive applications and services in hybrid broadcast/broadband environments*

ETSI TS 102 822-3-1 V1.7.1 (2011-11), *Broadcast and On-line Services: Search, select and rightful use of content on personal storage systems ("TV-Anytime"); Part 3: Metadata; Sub-part 1: Phase 1 – Metadata schemas*

ETSI TS 102 822-3-2 V1.6.1 (2012-07), *Broadcast and On-line Services: Search, select and rightful use of content on personal storage systems ("TV-Anytime"); Part 3: Metadata; Sub-part 2: System aspects in a uni-directional environment*

ETSI TS 102 822-6-1 V1.7.1 (2011-11), *Broadcast and On-line Services: Search, select, and rightful use of content on personal storage systems ("TV-Anytime"); Part 6: Delivery of metadata over a bi-directional network; Sub-part 1: Service and transport*

DVB Services CA system identifiers, available at <<http://www.dvbservices.com/identifiers/>>

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3 Terms, definitions and abbreviated terms

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3.1 Terms and definitions

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For the purposes of this document, the terms and definitions given in IEC 62766-1 and the following 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

linear TV metadata

metadata that is associated with the content items provided in the scheduled content service

Note 1 to entry: In the scheduled content service the content playout time is determined by the service provider.

3.1.2

CoD metadata

metadata describing the attributes of content items available to the user on an on-demand nature

Note 1 to entry: CoD metadata are typically organised as a catalog that may be presented in different perspectives, such as alphabetical listing or grouped by genre.

3.1.3

interactive services metadata

metadata describing interactive applications that may be available to the user

3.1.4

stored content metadata

metadata describing scheduled content items that have been recorded by the user and are available for playback either from network storage or local storage

3.1.5

file delivery metadata

metadata describing a file delivery session over the unidirectional network

3.2 Abbreviated terms

AV	Audio/video
BCG	Broadband Content Guide
CE-HTML	Consumer equipment HTML
CRID	Content Reference Identifier
CoD	Content on Demand
DVBSTP	DVB SD&S Transport Protocol
DVB	Digital Video Broadcast
EIT	Event Information Table
EIT P/F	EIT Present/Following
EPG	Electronic Program Guide
FCC	Fast Channel Change
FDT	File Delivery Table
FLUTE	File delivery over unidirectional transport
HNED	Home Network End Device
HTML	Hypertext markup language
IMI	Instance Metadata Identifier
NG	Network Generated
OITF	Open IPTV terminal function
RET	Retransmission
SDT	Service description Table
SI	Service information
SOAP	Simple Object Access Protocol
SPTS	Single Program Transport Stream
SVG	Scalable Vector Graphics
TS	Transport Stream
XSD	XML Schema Definition

4 Metadata content

4.1 General

The content metadata specified in the present standard are based on two ETSI specifications:

- Service discovery and selection (SD&S)
SD&S metadata are a set of data related to the service discovery and selection (SD&S) mechanism as defined in ETSI TS 102 034. These metadata allow the OITF to retrieve information to select linear TV services (i.e. multicast address, channel name, package, etc.), BCG services (for linear TV or CoD) or other DVB services. For FCC/RET services, the appropriate SD&S records are defined in Annex I of ETSI TS 102 034:2014.

- Broadband content guide (BCG)

The BCG is a set of data related to the description of linear TV events and services, and/or CoD content as defined by ETSI TS 102 539.

This clause defines extensions to the SD&S and BCG schemas and the AV classification schemes. Refer to the ETSI TS 102 034 and ETSI TS 102 539 specifications for the base schemas.

4.2 Schema extension and validation

4.2.1 General

The metadata is in the form of an instance document which is validated against a schema defined in the present document. The XML schema is obtained by extending the SD&S schema defined in ETSI TS 102 034 and the BCG schema defined in ETSI TS 102 539.

4.2.2 Metadata extensibility

This document provides schema descriptions of those elements and attributes that are extended from the original schema defined in ETSI TS 102 034 for SD&S, or ETSI TS 102 539 for BCG. The extension rule adopted in this standard follows the forward compatibility constraints specified in order to be able to extend the BCG schema in ETSI TS 102 822-3-2.

4.2.3 Metadata validation

No specific XSD validation tool is mentioned in ETSI TS 102 034 for SD&S or in ETSI TS 102 539 for BCG. Content that is purported to conform to the extension specified in this document shall pass a validation test using any widely-accepted XSD validation engine. In cases where the narrative description of this standard conflicts with the extended schema, the narrative will be considered authoritative. A companion schema (.xsd) document associated with the present document provides the consolidated XML schema definition of SD&S and BCG metadata extended as defined in the present document.

4.3 SD&S extensions

4.3.1 General

This subclause describes the extensions to the SD&S schema described in ETSI TS 102 034 in conjunction with the generic application signalling defined in ETSI TS 102 809. SD&S records provide an XML-based description of service providers and their services. They enable OITFs to discover and select appropriate services. In addition to ETSI TS 102 809, extensions are defined in order to provide a means to signal web-based applications from within SD&S records. Extensions are provided also for

- bandwidth renegotiation,
- purchasing a broadcast service,
- indicating container format.

For FCC/RET, no extensions are required, but the definition of one SD&S element is extended in order to indicate to the OITF to use the cookie signalling method for FCC/RET services, without breaking the interpretation of this SD&S element for non-OIPF deployments.

All schema extensions are described in Annex B. For details of the original SD&S schema, see ETSI TS 102 034.

4.3.2 Service provider discovery extensions

4.3.2.1 General

Service provider discovery information contains information about service providers including references to the service offerings as well as any OIPF-specific services they may provide (e.g. emergency notification service). Further details of the service provider XML schema can be found in 5.2.13.7 of ETSI TS 102 034:2014.

The service provider type is extended by the present standard to signal the access information for the emergency notification service, see Figure 1.

The schema for the extension is provided in Clause B.3.

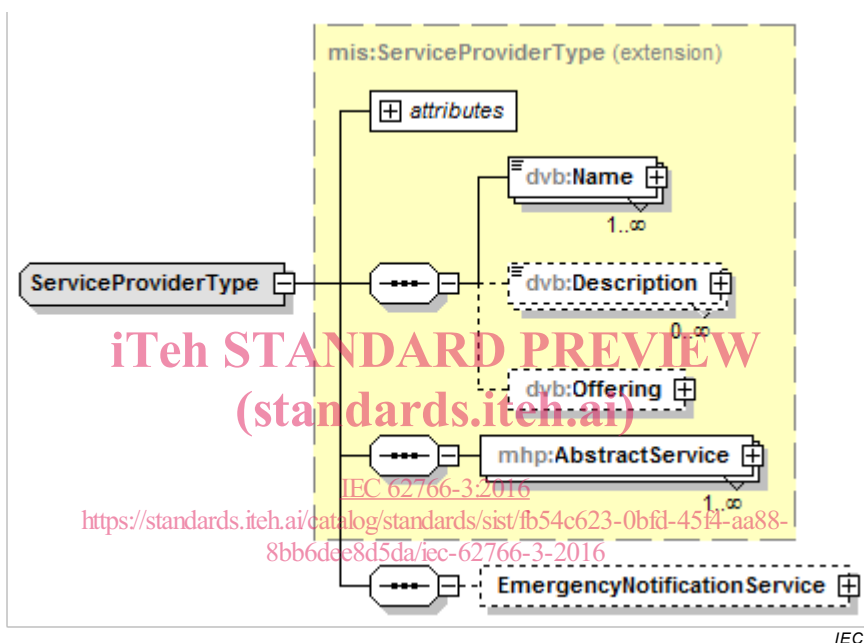


Figure 1 – Outline of service provider record updates

4.3.2.2 Emergency notification service

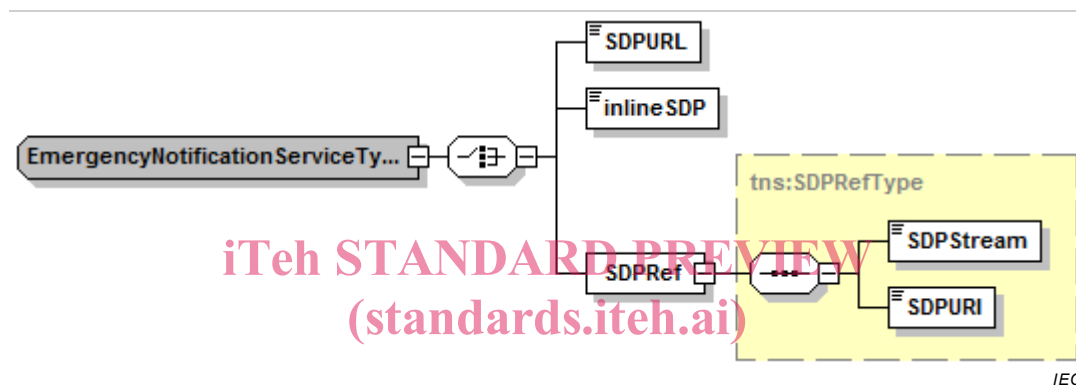
EmergencyNotificationService contains SDP-based session description that the terminal needs in order to receive an emergency notification message. Two methods are used to carry session information.

- Inline: where the SDP file is inlined in the service provider XML document as element content. This is useful for situations where the contents of the SDP file are fixed.
- Out of band: where the SDP file is delivered independently of the service provider XML document. This is useful for situations where the contents of the SDP file are not necessarily fixed. In this case, the SDP file can be delivered via unicast or multicast. For unicast, a URL is provided; for multicast, an SDPStream together with an SDPURI are provided.

The schema for the extension is provided in Clause B.4. Table 1 provides a description of the parameters and Figure 2 depicts an emergency notification structure.

Table 1 – Extract of EmergencyNotificationService type semantics

Element / attribute name	Element / attribute description
EmergencyNotificationService	A complex type to describe access information for an emergency notification service of a specific service provider.
SDPURL	An element specifying unicast location of SDP file describing the access information for Emergency Notification Service.
inlineSDP	An element specifying the embedding of the SDP file describing the access information for the emergency notification service.
SDPRef	A complex type to describe the multicast location for the SDP of the emergency notification service.
SDPStream	An element specifying the embedding of the SDP file describing the access information of a multicast file delivery session.
SDPURI	An element specifying URI of a SDP file.



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Figure 2 – Emergency notification structure

4.3.3 Service discovery extensions

4.3.3.1 General

Service discovery records provide descriptive information about and access details to the services (e.g. service name, service URL, etc.) offered by a service provider, for example, linear TV broadcasts or BCG(s).

Three types of extension are defined by this document:

- bandwidth renegotiation;
- purchasing broadcast services;
- indicating container format.

4.3.3.2 Bandwidth renegotiation

The MaxBitrate element in the IPService record of SD&S (ETSI TS 102 034) shall be provided in case of scheduled content services with SIP session management provided in managed networks relying on IMS. It is used during session initiation or session modification to ensure that the necessary bandwidth is available in the network. Table 2 shows this extension of the Broadcast Discovery record.