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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

IPTV multimedia services and applications for IPTV – IPTV
application event handling

Use of video sensor devices for IPTV services: Architecture and requirements

Recommendation ITU-T H.742.0

ITU-T

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Recommendation ITU-T H.742.0

Use of video sensor devices for IPTV services: Architecture and requirements

Summary

A video sensor is a device used by technology to extract useful information, for example, the number, gender, and age of persons in front of camera, by processing video data captured by camera. Recommendation ITU-T H.742.0 describes an architecture and the requirements of IPTV application events extracted by video sensor devices. The requirements cover general functionalities, delivery mechanisms, metadata, and functions to avoid the risk of privacy infringement.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T H.742.0	2016-07-14	16	11.1002/1000/11830-en

Keywords

Audience measurement function, AMF, application event handling, Internet protocol television, IPTV, video sensor, video.

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

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

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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Recommendation ITU-T H.742.0

Use of video sensor devices for IPTV services: Architecture and requirements

1 Scope

This Recommendation describes the requirements of IPTV application events extracted by video sensor devices. It describes an architecture and the requirements for general functionalities, delivery mechanisms, metadata, and functions to avoid the risks of privacy infringement.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T H.741.0] Recommendation ITU-T H.741.0 (2012), *IPTV application event handling: Overall aspects of audience measurement for IPTV services*.

[ITU-T H.741.2] Recommendation ITU-T H.741.2 (2012), *IPTV application event handling: Data structures of audience measurement for IPTV services*.

[ITU-T X.1191] Recommendation ITU-T X.1191 (2008), *Functional requirements and architecture for IPTV security aspects*.

[ITU-T Y.1901] Recommendation ITU-T Y.1901 (2008), *Requirement for the support of IPTV services*.

[ITU-T Y.1910] Recommendation ITU-T Y.1910 (2008), *IPTV functional architecture*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 aggregation function [ITU-T H.741.0]: The function that configure audience management functions (AMFs), then receives processed events, sample values and end-user information from AMFs. It may participate in the communication of end-user permissions.

3.1.2 application [b-ITU-T Y.101]: A structured set of capabilities, which provide value-added functionality supported by one or more services.

3.1.3 application event [b-ITU-T H.740]: An application event is every end-user interaction or occurrence related with multimedia contents in IPTV applications. It includes an emergency event from event notification services

3.1.4 audience measurement [ITU-T H.741.0]: The measurement of people's engagement with IPTV services.

3.1.5 audience measurement data [ITU-T H.741.0]: End-user behaviour data which is related to a service and content consumption, combined or not with end-user information.

3.1.6 audience measurement function (AMF) [ITU-T H.741.0]: The function that, if given permission, measures the end-user behaviour by processing events or samples from IPTV services.

AMFs may request and collect end-user information. AMFs transfer processed events, samples and end-user information to aggregation functions.

3.1.7 content provider [ITU-T Y.1910]: The entity that owns or is licensed to sell content or content assets.

3.1.8 delivery [ITU-T Y.1910]: In the context of IPTV architecture, "delivery" is defined as sending contents to the end user.

3.1.9 digital signage [b-ITU-T H.780]: A system that sends information, advertising and other messages to electronic devices (e.g., displays, speakers) in accordance with the time of day and the location of the display, or the actions of audience. Contents and their relevant information, such as display schedules, are delivered over networks.

3.1.10 end user [ITU-T Y.1910]: The actual user of the products or services.

NOTE – The end user consumes the product or service. An end user can optionally be a subscriber.

3.1.11 IPTV [ITU-T Y.1901]: Multimedia services such as television/video/audio/text/graphics /data delivered over IP-based networks managed to support the required level of QoS/QoE, security, interactivity and reliability.

3.1.12 metadata [ITU-T Y.1901]: Structured, encoded data that describe characteristics of information-bearing entities to aid in the identification, discovery, assessment, and management of the described entities.

NOTE – EPG metadata has many applications and may vary in depth from merely identifying the content package title or information to populate an EPG to providing a complete index of different scenes in a movie or providing business rules detailing how the content package may be displayed, copied, or sold.

3.2.13 network provider [ITU-T Y.1910]: The organization that maintains and operates the network components required for IPTV functionality.

NOTE 1 – A network provider can optionally also act as service provider.

NOTE 2 – Although considered as two separate entities, the service provider and the network provider can optionally be one organizational entity.

3.1.14 privacy [b-ITU-T X.800]: The right of individuals to control or influence what information related to them may be collected and stored and by whom and to whom that information may be disclosed.

NOTE – Because this term relates to the right of individuals, it cannot be very precise and its use should be avoided except as a motivation for requiring security.

3.1.15 service [b-ITU-T Y.101]: A structure set of capabilities intended to support applications.

3.1.16 service provider [b-ITU-T M.1400]: A general reference to an operator that provides telecommunication services to customers and other end users either on a tariff or contract basis. A service provider may or may not operate a network. A service provider may or may not be a customer of another service provider.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 video data: A set of digital images captured by a camera. A digital image is a numeric representation of a two-dimensional image.

3.2.2 video sensor: A device that has image processing ability, such as image compression, image manipulation with the video data captured by a camera. A video sensor can generate video sensor information alone, by processing video data when it has enough computational power. Otherwise, some functions of the video sensor are processed through external systems and the video sensor generates intermediate video sensor information.