



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

H.741.0

(03/2012)

SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

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

IPTV application event handling: Overall aspects of audience measurement for IPTV services

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Recommendation ITU-T H.741.0 (ex H.IPTV-AM.0-0)

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Summary

ITU-T H.741.0 defines a foundational platform for audience measurement (AM) of IPTV services. This Recommendation focuses on the interface between terminal devices and an audience measurement aggregation function.

The AM platform integrates a method for end users to report personal information, and is designed to easily add time-shifted and interactive services, and non-terminal device measurement points. While ITU-T H.741.0 allows the implementation of audience measurement for IPTV services, its mechanism may be equally applicable to non-IPTV services.

The audience measurement mechanism specified here provides additional benefits when compared to traditional audience measurement, in particular: a larger audience population sample, more detailed engagement metrics, passive data collection, and feedback for the enhancement of services.

The design philosophy in ITU-T H.741.0 is focused on scalability, minimizing the use of resources, security, flexibility to support a variety of service provider deployments, and rich privacy support to meet emerging regulations and legislation.

Keywords

audience measurement, audience rating service, contents rating, distributed content service, end-user permission, engagement metrics, interactive services, IPTV application event handling, linear TV, personalised service, privacy protection

1 Scope

This Recommendation describes the overall aspects of audience measurement for IPTV services. It specifies the requirements, the architecture for IPTV audience measurement. It describes configuration, measurement reporting, and privacy.

This Recommendation presents the functions related to audience measurement distributed over the IPTV architecture. Audience measurements are constrained to the communications interface(s) between terminal device audience measurement functions and measurement aggregation functions. Subsequent Recommendations are anticipated to address communications interface(s) with audience measurement functions located within other functions of the IPTV architecture.

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 X.1191] ITU-T Recommendation X.1191 (2009), *Functional requirements and architecture for IPTV security aspects*.

[ITU-T H.740 Amd.1]	ITU-T Recommendation H.740 (2010) Amd.1 (2011), <i>Application event handling for IPTV services: New video handling sensor event scenario in Appendix II</i>
[ITU-T Y.1901]	ITU-T Recommendation Y.1901 (2009), <i>Requirement for the support of IPTV services.</i>
[ITU-T Y.1910]	ITU-T Recommendation Y.1910 (2008), <i>IPTV functional architecture.</i>

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

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

3.1.2 application event [ITU-T H.740 Amd.1]: 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

3.1.3 authorization [b-ITU-T X.800]: The granting of rights, which includes the granting of access based on access rights.

3.1.4 confidentiality [b-ITU-T X.800]: The property that information is not made available or disclosed to unauthorized individuals, entities, or processes.

3.1.5 content (object) [b-ITU-T T.174]: Encoded generic value, media or non-media data

3.1.6 electronic program guide (EPG) [b-ITU-T H.721 Amd.1]: A service navigation application which is used especially for scheduled linear programs.

NOTE 1 – in some traditional Broadcast Services, EPG is defined as an on-screen guide used to display information on scheduled live broadcast television programs, allowing a viewer to navigate, select, and discover programs by time, title, channel, genre. This traditional definition does not cover "catalogues" for on-demand and download services (sometimes called Electronic Content Guide (ECG), Broadband Content Guide, BCG) and bi-directional interactive service (sometimes called Interactive Program Guide, IPG) for end-user interaction with a server or head-end.

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

NOTE 2 – The end user consumes the product or service. An end user can optionally be a subscriber.

3.1.8 integrity [IEC/ISO 27001], [IEC/ISO 27002]: Safeguarding the accuracy and completeness of information and processing methods.

3.1.9 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.

3.1.10 IPTV terminal device [ITU-T Y.1901]: A terminal device which has IPTV terminal function (ITF) functionality, e.g. a STB.

3.1.11 IPTV terminal function (ITF) [ITU-T Y.1901]: The end-user function(s) associated with a) receiving and responding to network control channel messages regarding session set-up, maintenance, and tear-down, and b) receiving the content of an IP transport from the network and rendering.

3.1.12 key [b-ITU-T X.800]: A sequence of symbols that controls the operations of encipherment and decipherment.

3.1.13 linear TV [ITU-T Y.1901]: A television service in which a continuous stream flows in real time from the service provider to the terminal device and where the end user cannot control the temporal order in which contents are viewed.

3.1.14 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 3 – 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.

3.1.15 peer-entity authentication [b-ITU-T X.800]: The corroboration that a peer entity in an association is the one claimed.

3.1.16 privacy [b-ITU-T X.800 Amd.1]: 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.

3.1.17 repudiation [b-ITU-T X.800]: Denial by one of the entities involved in a communication of having participated in all or part of the communication.

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

3.1.19 service navigation [b-ITU-T H.720]: A process of presenting information that allows the end user to discover, select and consume services.

3.1.20 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.

3.1.21 set-top box (STB) [b-ITU-T J.183]: A hardware box that contains digital signal demodulator, de-multiplexer, MPEG-2 decoder, other functionalities and interfaces related to digital signal reception and presentation of the distributed programme at the subscriber's site.

3.1.22 stream [b-ITU-T J.200]: A unidirectional continuous flow of content.

3.1.23 subscriber [b-ITU-T M.3050.1]: The subscriber is responsible for concluding contracts for the services subscribed to and for paying for these services.

3.1.24 terminal device (TD) [ITU-T Y.1901]: An end-user device which typically presents and/or processes the content, such as a personal computer, a computer peripheral, a mobile device, a TV set, a monitor, a VoIP Terminal or an audio-visual media player.

3.1.25 video-on-demand (VoD) [ITU-T Y.1901]: A service in which the end user can, on demand, select and view a video content and where the end user can control the temporal order in which the video content is viewed (e.g. the ability to start the viewing, pause, fast forward, rewind, etc.).