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SERIES J: CABLE NETWORKS AND TRANSMISSION
OF TELEVISION, SOUND PROGRAMME AND OTHER
MULTIMEDIA SIGNALS

Application for Interactive Digital Television – Part 1

**Specification for an integrated broadcast and
broadband digital television application control
framework**

Recommendation ITU-T J.207

ITU-T



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Specification for an integrated broadcast and broadband digital television application control framework

Summary

In accordance with Recommendation ITU-T J.205 and based on the viewpoint of architecture defined in Recommendation ITU-T J.206, Recommendation ITU-T J.207 provides guidance for administrations and entities who intend to provide integrated broadcast-broadband digital television (DTV) services and solutions. This Recommendation also defines high-level application programming interfaces (APIs) that are required to implement an application control framework for DTV-enabled devices. This framework is responsible for managing, integrating and controlling the interactive content and applications available through DTV services installed by the end user or embedded by the device manufacturer and providing a unified execution environment for them.

History

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Recommendation ITU-T J.207

Specification for an integrated broadcast and broadband digital television application control framework

1 Scope

In accordance with the requirements defined in [ITU-T J.205] and based on the viewpoint of [ITU-T J.206], this Recommendation provides guidance for administrations and entities who intend to provide integrated broadcast-broadband (IBB) digital television (DTV) services.

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 J.205] Recommendation ITU-T J.205 (2012), *Requirements for an application control framework using integrated broadcast and broadband digital television.*

[ITU-T J.206] Recommendation ITU-T J.206 (2013), *Architecture for an application control framework using integrated broadcast and broadband digital television.*

[ITU-R BT.2075] Recommendation ITU-R BT.2075-1 (2017), *Integrated broadcast-broadband system.*

NOTE – The terms "IBB system" and "IBB service" used in [ITU-R BT.2075] should be read as "IBB DTV system" and "IBB DTV service", respectively, for alignment with [ITU-T J.205].

3 Definitions

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

| | |
|-------|-----------------------------------|
| API | Application Programming Interface |
| DTV | Digital Television |
| IBB | Integrated Broadcast-Broadband |
| UHDTV | Ultrahigh Definition Television |
| VOD | Video on Demand |

5 Conventions

None.

6 The IBB DTV systems

The IBB DTV systems considered in this Recommendation are the systems listed in clause 3.1 of [ITU-R BT.2075]. The summary of each system in clause 3.2 of [ITU-R BT.2075] should also be used.

7 Service capabilities of the IBB DTV systems

This clause describes which service capabilities are provided in each system.

7.1 Items to be considered

Items listed and described in clause 4.1 of [ITU-R BT.2075] should be used with the following modification.

The seventh list entry on companion device collaboration should be modified as follows:

– Companion device collaboration:

Companion devices are those devices used with an IBB DTV receiver for presentation and interaction. Collaboration with companion devices is considered to be an effective presentation method, and user interaction is controlled by applications. Scenarios and requirements for the services using companion device collaboration are described in [b-ITU-T J.230]. IBB DTV systems should take into account the definitions and requirements in this Recommendation.

7.2 Consideration on service capabilities

Table 1 of [ITU-R BT.2075] should be used.

8 Technical elements of the IBB DTV systems

This clause describes how technical elements are designed in each system.

8.1 Items to be considered

Items listed and described in clause 5.1 of [ITU-R BT.2075] should be used with the following modification.

In item c), description of this item should be modified to incorporate a reference.

c) Supported application types

In [ITU-T J.205], several application types are defined. Supported application types are fundamental system designs of IBB DTV systems. Hence, describing supported application types to characterize IBB DTV systems is useful.

8.2 Consideration on technical elements

Table 2 of [ITU-R BT.2075] should be used.

Appendix I

Summary of Recommendation ITU-R BT.2075

(This appendix does not form an integral part of this Recommendation.)

[ITU-R BT.2075] provides information about IBB systems, and selection guidance for the systems. In this Recommendation, the following systems are included.

| | |
|------------|---|
| HbbTV | For HbbTV1.5: ETSI TS 102 796 V1.2.1 (2012) http://webapp.etsi.org/ewp/copy_file.asp?wki_id=39272 For HbbTV 2.0.1: ETSI TS 102 796 V1.4.1 (2016) http://www.etsi.org/deliver/etsi_ts/102700_102799/102796/01.04.01_60/ts_102796v010401p.pdf ¹ |
| Hybridcast | IPTVFJ STD-0010 and STD-0011 http://www.iptvforum.jp/en/download/ ARIB STD-B62 V1.0 http://www.arib.or.jp/english/html/overview/sb_ej.html |
| TOPSmedia | HTML5 based Smart TV Platform, TTA.KO-07.0111/R1 http://www.tta.or.kr/English/new/standardization/eng_ttastddesc.jsp?stdno=TTA.KO-07.0111/R1 |
| Ginga | ABNT NBR 15606 (2016) series http://www.abntcolegcao.com.br/coltv.aspx?Q=CING45WV08&ID=361668 http://www.abntcolegcao.com.br/coltv.aspx?Q=CING45WV08&ID=361857 http://www.abntcolegcao.com.br/coltv.aspx?Q=CING45WV08&ID=361860 http://www.abntcolegcao.com.br/coltv.aspx?Q=CING45WV08&ID=361862 Recommendation ITU-T H.761 (2014), Nested Context Language (NCL) and Ginga-NCL http://www.itu.int/rec/T-REC-H.761 |

This Recommendation consists of two kinds of information: service capabilities and technical elements of IBB systems.

For service capabilities, information about the following items for each system is described:

- relationship with interactive TVs;
- support of various types of IBB service – Application life cycle control;
- service integrity and security;
- end user privacy protection;
- content protection;
- companion device collaboration;
- video on demand (VOD) playback;
- applicability to ultrahigh definition television (UHDTV).

¹ NOTE: HbbTV version 2.0.1 supersedes HbbTV 2.0, published by ETSI in 2015.

Description of the above items is intended to provide information about which kinds of services are available and how each IBB system enables them.

For technical elements, detailed technical information is provided for the following items:

- coexistence with interactive TV systems;
- transport-related items;
- supported application types;
- application format;
- application authentication;
- security and permission control to access resources;
- protocols available for broadband access;
- protocols for broadcast channel, including delivery of application data;
- available delivery channels for application triggering and messaging;
- supported video formats and encoding;
- supported audio formats and encoding;
- subtitle control and formats;
- storage access and management;
- signalling format and delivery;
- synchronization between applications and broadcast programmes;
- protocols for device integration;
- device discovery protocol for device integration;
- VOD playback.

For the above items, information about built-in mechanism(s) of each system and how the mechanism(s) works to achieve service capabilities in each IBB system is described.

Bibliography

- [b-ITU-T J.230] Recommendation ITU-T J.230 (2016), *Requirements for platform functionalities on the integration of cable STB and companion devices including mobile second screen devices.*

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