APPLICATION FOR INTERACTIVE DIGITAL TELEVISION – PART 1

Specification for integrated broadcast and broadband digital television application control framework

Recommendation ITU-T J.207
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Specification for 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 in the development of integrated broadcast-broadband system solutions. This Recommendation also defines high-level application programming interfaces (APIs) needed 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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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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Recommendation ITU-T J.207

Specification for 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.


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
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 that 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.

- 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)

For HbbTV 2.0:

ETSI TS 102 796 V1.3.1 (2015)
http://www.etsi.org/deliver/etsi_ts/102700_102799/102796/01.03.01/102796v10301p.pdf

Hybridcast

IPTVFJ STD-0010 and STD-0011

ARIB STD-B62 V1.0
http://www.arib.or.jp/english/html/overview/sb_ej.html

HTML5 based Smart TV Platform

TTAK.KO-07.0111/R1
http://www.tta.or.kr/English/new/standardization/eng_ttastddesc.jsp?stdno=TTAK.KO-07.0111/R1

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).

Description of the above items is intended to provide information about which kinds of service 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

SERIES OF ITU-T RECOMMENDATIONS

Series A  Organization of the work of ITU-T
Series D  General tariff principles
Series E  Overall network operation, telephone service, service operation and human factors
Series F  Non-telephone telecommunication services
Series G  Transmission systems and media, digital systems and networks
Series H  Audiovisual and multimedia systems
Series I  Integrated services digital network

Series J  Cable networks and transmission of television, sound programme and other multimedia signals

Series K  Protection against interference
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