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OF TELEVISION, SOUND PROGRAMME AND OTHER
MULTIMEDIA SIGNALS

IP Video Broadcast

Specifications of IP video broadcast (IPVB) for cable TV networks

Recommendation ITU-T J.1211

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Summary

In recent years, IP-based video services have developed rapidly in cable (CATV) networks, especially the highly asymmetric IP-based services with large bandwidth, such as 4K, 8K and VR, whose single program bandwidth might easily exceed 35Mbps or even up to 100Mbps. This requires a large downlink bandwidth of transmission channels and poses challenges to existing CATV technologies. For this scenario, it is necessary to propose a low cost and low complexity solution to meet the bandwidth requirements of the current asymmetric IP-based video services.

Recommendation ITU-T J.1211 specifies an IPVB technology, which simply adds a one-way IP-based video broadcast system to the existing low-cost bidirectional CATV networks. The IPVB can greatly increase the bandwidth of downlink programs, and at the same time, have the characteristics of being low cost and low complexity. The IPVB in downlink transmits IP-based video streams through broadcast channels which are identified by multicast IP addresses and UDP port numbers, and broadcasts all the IP-based video streams through the CATV networks to all subscribers. By cooperating with the uplink channel provided by the existing bidirectional access networks, it is capable of providing varieties of IP-based high bit rate video services in CATV networks.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
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* 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>.

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1 Scope

This Recommendation describes the technique specifications of IPVB systems, including the system architecture of IPVB, broadcast channel planning of services, coding schemes and the encapsulation formation of audio and video data, broadcast service information (BSI) tables and functional modules of IPVB systems. The Recommendation is applicable to the network construction of IPVB systems, the development of equipment, and the operation and management of IPVB systems.

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.222.0] Recommendation ITU-T H.222.0 (2018) | ISO/IEC 13818-1:2019, *Information technology – Generic coding of moving pictures and associated audio information: Systems*.
- [ITU-T J.83] Recommendation ITU-T J.83 (2007), *Digital multi-programme systems for television, sound and data services for cable distribution*.
- [IEEE 802.3ae] IEEE 802.3ae-2002, *IEEE Standard for Information Technology- Local and Metropolitan Area Networks – Specific Requirements Part 3: Carrier Sense Multiple Access With Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications Amendment: Media Access Control (MAC) Parameters, Physical Layers, and Management Parameters for 10 Gb/S Operation*.

3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 broadcast channel: The broadcast channels in this Recommendation refer to the logical channels labelled with D-class IP addresses and UDP destination port numbers. Usually one channel corresponds to a digital TV transmission stream or service stream.

3.2.2 IP broadcast: IP broadcast in this Recommendation refers to the implementation of the broadcast transmission of the baseband stream of IP on the CATV distribution network.

3.2.3 main channel: The main channel in this Recommendation refers to the broadcast channels delivering the digital TV service index data of IPVB.