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

Digital transmission of television signals – Part 1

Time-division multiplexing of multiple MPEG-2 transport streams and generic formats of transport streams over cable television systems

Recommendation ITU-T J.183

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Summary

Recommendation ITU-T J.183 describes a time-division multiplexing (TDM) format for transmitting multiple Motion Picture Experts Group version 2 (MPEG-2) transport streams (TSs) or generic formats of TSs by using a simple implementation of an MPEG-2 systems physical interface on cable television systems. The TDM frame encapsulates the MPEG-2 TSs or generic formats of TSs, which are packetized into 188-byte length prior to transmission. It also describes the framing structure for high-speed transmission by channel-bonding technology.

The format features interoperability with the existing satellite transmodulation format, which is based on the specification in Annex C of ITU-T J.83 and Annex C of ITU-T J.84 (satellite master antenna television (SMATV) system C (III)).

It may also be applicable to other transmission systems. When this format is introduced into existing digital cable television systems, it is recommended that information about the frame format be transmitted by the network information table simultaneously. It is necessary for the set-top box to identify the digital channel containing multiple MPEG-2 TSs or generic formats of TSs.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T J.183	2001-03-09	9	11.1002/1000/5395
2.0	ITU-T J.183	2016-03-15	9	11.1002/1000/12766

* 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/11.1002/1000/1830-en>.

FOREWORD

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The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

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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.183

Time-division multiplexing of multiple MPEG-2 transport streams and generic formats of transport streams over cable television systems

1 Scope

This Recommendation specifies a time-division multiplexing (TDM) frame format for adapting multiple Motion Picture Experts Group version 2 (MPEG-2) transport streams (TSs) or generic formats of TSs, some of which exceed the transmission rate per channel, into the existing physical layer interface specified in Annex C of [ITU-T J.83]. This format may be applicable to other transmission systems.

The frame format aims to multiplex TSs without change, except that some of the service information (SI) related to the network is replaced. By using this frame structure as an optional addition to conventional digital transmission equipment, multiple TSs can be multiplexed as they are. The functionality of multiplexing TSs into a single TS is not needed. In addition, the expansion of the frame format, being compliant with the first edition (2001-03-09) of this Recommendation, can provide the functionality for a high-speed transmission scheme by channel-bonding technology.

The frame format enables a cable television operator to pack multiple TSs into a single channel or multiple channels. Operation of a cable distribution network would become flexible if services could be integrated on the basis of the TS.

This Recommendation provides the information needed by designers and manufacturers of equipment (including receivers) for distributing digital multi-programme signals by cable networks.

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 (2014) | ISO/IEC 13818-1:2015, *Information technology – Generic coding of moving pictures and associated audio information: Systems.*
- [ITU-T H.262] Recommendation ITU-T H.262 (2012) | ISO/IEC 13818-2:2013, *Information technology – Generic coding of moving pictures and associated audio information: Video.*
- [ITU-T J.83] Recommendation ITU-T J.83 (2007), *Digital multi-programme systems for television, sound and data services for cable distribution.*
- [ITU-T J.94] Recommendation ITU-T J.94 (1998), *Service information for digital broadcasting in cable television systems.*
- [ITU-T J.288] Recommendation ITU-T J.288 (2016), *Encapsulation of type-length-value (TLV) packet for cable transmission systems.*
- [ITU-R BT.1869] Recommendation ITU-R BT.1869 (2010), *Multiplexing scheme for variable-length packets in digital multimedia broadcasting systems.*