

SMPTE STANDARD

Unidirectional Transport of
Constant Bit Rate MPEG-2
Transport Streams on IP Networks



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Foreword

SMPTE (the Society of Motion Picture and Television Engineers) is an internationally-recognized standards developing organization. Headquartered and incorporated in the United States of America, SMPTE has members in over 80 countries on six continents. SMPTE's Engineering Documents, including Standards, Recommended Practices and Engineering Guidelines, are prepared by SMPTE's Technology Committees. Participation in these Committees is open to all with a bona fide interest in their work. SMPTE cooperates closely with other standards-developing organizations, including ISO, IEC and ITU.

SMPTE Engineering Documents are drafted in accordance with the rules given in Part XIII of its Administrative Practices.

SMPTE 2022-2 was prepared by Technology Committee N26 on File Management and Networking Technology.

Introduction

This section is entirely informative and does not form an integral part of this document.

IP-based networks have become increasingly important for delivery of compressed content as MPEG-2 Transport Streams. However, existing transport protocols do not fully meet the user requirements. This standard describes modifications to existing transport protocols which can be used for the unidirectional carriage of MPEG-2 Transport Streams over IP networks.

This standard is intended for real-time audio/video applications such as contribution, distribution, and film. The applications addressed by this standard may employ any compression scheme that is supported by the CBR MPEG-2 Transport Stream. This standard defines two classes of devices. Class 1 supports 188 byte Transport Stream packets, class 2 supports 188 byte and 204 byte Transport Stream packets.

1 Scope

This standard defines a unidirectional transport protocol for the carriage of real-time Constant Bitrate (CBR) MPEG-2 Transport Streams over IP networks. For professional applications, MPEG-2 using the 4:2:2P@ML profile is currently the normal practice. However, Transport Streams containing other forms of MPEG-2 and newer MPEG standards encapsulated as MPEG-2 Transport Streams are also supported by this Standard.

2 Conformance Notation

Normative text is text that describes elements of the design that are indispensable or contains the conformance language keywords: "shall", "should", or "may". Informative text is text that is potentially helpful to the user, but not indispensable, and can be removed, changed, or added editorially without affecting interoperability. Informative text does not contain any conformance keywords.

All text in this document is, by default, normative, except: the Introduction, any section explicitly labeled as "Informative" or individual paragraphs that start with "Note:"

The keywords "shall" and "shall not" indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted.

The keywords, "should" and "should not" indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

The keywords "may" and "need not" indicate courses of action permissible within the limits of the document. The keyword "reserved" indicates a provision that is not defined at this time, shall not be used, and may be defined in the future. The keyword "forbidden" indicates "reserved" and in addition indicates that the provision will never be defined in the future.

A conformant implementation according to this document is one that includes all mandatory provisions ("shall") and, if implemented, all recommended provisions ("should") as described. A conformant implementation need not implement optional provisions ("may") and need not implement them as described.

3 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

SMPTE 2022-1-2007, Forward Error Correction for Real-Time Video/Audio Transport Over IP Networks

ISO/IEC 13818-1:2000, Generic Coding of Moving Pictures and Associated Audio Information: Systems

IETF RFC 2250, RTP Payload Format for MPEG1 / MPEG2 Video User Performance Requirements

IETF RFC 2236, Internet Group Management Protocol, Version 2

IETF RFC 3376, Internet Group Management Protocol, Version 3