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SMPTE RECOMMENDED PRACTICE

Packing KLV Encoded Metadata and Data Essence into SMPTE 291M Ancillary Data Packets



Page 1 of 5 pages

1 Scope

This practice describes a means for packing SMPTE metadata and data essence, encoded by the SMPTE KLV protocol, into SMPTE 291M ancillary data packets for transport. Packing of KLV encoded metadata and data essence in this practice is defined only for a 10-bit SDI component video signal interface.

2 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.

ANSI/SMPTE 259M-1997, Television — 10-Bit 4:2:2 Component and 4f_{sc} Composite Digital Signals — Serial Digital Interface

SMPTE 291M-1998, Television — Ancillary Data Packet and Space Formatting

SMPTE 292M-1998, Television — Bit-Serial Digital Interface for High-Definition Television Systems

SMPTE 336M-2001, Television — Data Encoding Protocol Using Key-Length-Value

Proposed SMPTE RP 168-2002, Definition of Vertical Interval Switching Point for Synchronous Video Switching

3 Introduction

This practice describes a means for packing SMPTE KLV encoded metadata and/or essence into SMPTE 291M ancillary data packets. There is strong interest in carrying audio/visual data, metadata, and/or essence, within the same digital stream. The use of one data stream facilitates delivery of the overall multimedia presentation. Metadata is classified as information about the essence. An example of metadata is information such as camera angle, scene identifier, or property rights. Other information about the essence is supplemental content to the audio and video such as closed captioning, sports statistics, or hyperlinked advertisements.

NOTE – ANSI/SMPTE 272M and SMPTE 299M already define the carriage of embedded digital audio in ANSI/SMPTE 259M (SDI) and SMPTE 292M (HD-SDI), respectively. Carriage of data essence types in SMPTE 291M ancillary data packets is under consideration.

4 Transport Packing

Ancillary data may be present within the horizontal ancillary data space and the vertical ancillary data space of the ANSI/SMPTE 259M or SMPTE 292M video signals. (Note that SMPTE 291M does not specify ancillary data packets over SMPTE 292M (HD-SDI), but the specification is readily carried over to HD-SDI.)

A possible data structure for a 10-bit ancillary data packet type 2 (ancillary packet type 2) carrying KLV encoded data is shown in figure 1 (informative). The KLV packet(s) shall be placed in the user data words of an ancillary data packet. The reader is urged to review SMPTE 291M for a detailed description of each field in the packet.