SMPTE RECOMMENDED PRACTICE

RP 207-2005
Revision of RP 207-2002

Transport of Program Description Data in Vertical Ancillary Data Packets

Table of contents

Forward
1 Scope
2 Normative references
3 Packet format
4 Descriptors
Annex A (informative)

Forward

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 Recommended Practice RP 207 was prepared by Technology Committee D27.

1 Scope

SMPTE 334M defines a mapping of data in vertical ancillary data packets. In particular, it refers to a packet named program description which is identified by the following combination of data identifier (DID) and secondary data identifier (SDID):

$DID = 162_h$ $SDID = 101_h$

This packet carries data which define characteristics of the video and audio program material. It can be used by station equipment, for example, in producing PSIP (program and system information protocol) data in accordance with ATSC A/65.

This practice recommends a format for the program description packet.

Approved March 22, 2005

2 Normative references

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

ATSC A/53C, ATSC Digital Television Standard

ATSC A/65B, Program and System Information Protocol for Terrestrial Broadcast and Cable

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

SMPTE 334M-2000, Television — Vertical Ancillary Data Mapping for Bit-Serial Interface

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

3 Packet format

Each data packet follows the format defined in SMPTE 291M for a type 2 vertical ancillary (ANC) data packet. It consists of the ancillary data flag (ADF), the data ID (DID), the secondary data ID (SDID), the data count (DC), the user data words (UDW), and the checksum (CS). The UDW consists of the data payload plus forward error correction overhead.

Each program description vertical ancillary packet contains exactly one descriptor, as defined in ATSC A/65, ATSC A/53, and ISO/IEC 13818-1. The format of the vertical ancillary packet is therefore as follows:

Header:	UDW:	Suffix:
ADF (3 words) DID = 162_h SDID = 101_h DC = variable	Data payload (variable) = 1 descriptor	CS (1 word)

4 Descriptors

Descriptors are uniquely identified by their descriptor tag. Any of the descriptors listed in table 6-25 of ATSC A/65, as well as ATSC A/53 and ISO/IEC 13818-1, may be transported as described in this practice. Equipment that is intended to comply with this practice shall support those shown in the following table.

The UDW consists of one descriptor. All descriptors in compliance with ISO/IEC 13818-1, section 2.6, consist of an 8-bit descriptor tag, followed by an 8-bit descriptor length, followed by the data. The value of “length” is the number of bytes of data following the length byte.

For example, the Redistribution Control (RC) descriptor format would be the descriptor tag byte of AA_h followed by a length byte of 00_h and no data bytes. In contrast, the Caption Service descriptor format would be the descriptor tag byte of 86_h, followed by a length byte whose value will vary, followed by the variable length data bytes.

Table 1 – Descriptors

Descriptor name	Descriptor tag
AC-3 audio	81_h
Caption service	86_h
Content advisory	87_h
Redistribution control	AA_h

Annex A (informative)

The recommend space for placement of program description packets is in the luminance (Y) stream of the SMPTE 292 interface.

NOTE – Equipment designers should recognize that existing equipment installed in the field and conforming to the previous version of this document use only the luminance channel for data transmission. Therefore, receivers should be able to receive VANC packets carrying program description packets in any VANC ancillary data space.

It is suggested that program description packets be repeated every two seconds.

The available VANC area starts with the second line after the switching line specified in SMPTE RP 168.

Users should be aware that not all equipment transparently passes data in the vertical interval of the video signal. In some cases, data values in the vertical sync interval will not be preserved during signal processing and manipulation. Devices that do not preserve the entire vertical interval may require additional support equipment to handle the vertical interval.