PROPOSED SMPTE STANDARD

SMPTE 274M
Revision of
SMPTE 274M-1998

for Television — 1920 x 1080 Image Sample Structure, Digital Representation and Digital Timing Reference Sequences for Multiple Picture Rates

Contents

1 Scope
2 Normative references
3 General
4 Image structure
5 System colorimetry
6 Raster structure
7 Digital representation
8 Digital timing reference sequences (SAV, EAV)
9 Analog sync
10 Analog interface

Annex A Progressive segmented frame interface
Annex B Ancillary data
Annex C Bit-parallel interface
Annex D Pre- and post-filtering characteristics
Annex E Production aperture
Annex F Bibliography

1 Scope

1.1 This standard defines a family of image sample structures for the representation of stationary or moving two-dimensional images sampled temporally at a constant frame rate and having an image format of 1920 x 1080 and an aspect ratio of 16:9 as given in table 1. This standard specifies:

- R'G'B' color encoding;
- R'G'B' analog and digital representation;
- Y'P'BP'R color encoding, analog representation and analog interface; and
- Y'C'BC'R color encoding and digital representation

An auxiliary component A may optionally accompany R'G'B' and Y'C'BC'R; these interfaces are denoted R'G'B'A and $Y'C'_BC'_RA$. The A component, if present, shall have the same characteristics as the Y' or G' channel.

1.2 This standard specifies multiple frame and field rate formats (table 1) and eight-bit, ten-bit, and twelve-bit systems. It is not necessary for an implementation to support all formats to be compliant with this standard. However, an implementation must state which of the formats are supported. Interfaces for twelve-bit systems require more than a single link.

PROPOSED SMPTE STANDARD

SMPTE 339M
Revision of
SMPTE 339M-2000

for Television — Format for Non-PCM Audio and Data in AES3 — Generic Data Types

1 Scope

This standard specifies data type specific format requirements for several types of data bursts that may be carried within an AES3 interface according to SMPTE 337M. Included are descriptions of the data type, the format of the burst_payload for the data type, the coding of data type dependent fields in the burst_preamble, and additional data burst and bitstream formatting requirements not defined in SMPTE 337M. This includes specific synchronization methods which may affect formatting.

This standard covers generic data types which include null data, time stamp data, user defined data, and utility data which may include video frame synchronization information.

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.

SMPTE 337M-2000, Television — Format for Non-PCM Audio and Data in AES3 Serial Digital Audio Interface

SMPTE 338M-2000, Television — Format for Non-PCM Audio and Data in AES3 — Data Types

SMPTE RP 168, Switching Points for Serial Digital and Analog Interfaces Carrying Television and Data Payloads

3 Null data (data_type = 0)

The null data type is provided so that the preamble sync codes may be intentionally inserted into the data stream. Null data bursts may be of use in receiving devices to potentially enhance reliable autodetection of whether or not the subframe contains PCM audio or non-PCM data.

3.1 Null data burst_preamble

The burst_preamble for a null data burst shall set the length_code, error_flag, and data_type_dependent values to 0. The data_stream_number shall be set to any valid number other than 0x7. The data_type shall be set to 0.

3.2 Null data burst_payload

The null data burst shall contain no burst_payload (a payload of length 0).

4 Time stamp (data_type = 2)

The time stamp data type is used to convey time synchronization information associated with a specific data burst. This information shall include SMPTE 12M time code information and/or specific delay information. The use of time stamp bursts is optional. When present, the time stamp information shall apply to the data burst which immediately follows in the AES3 interface. When time code information is present, the time stamp may contain date and time zone information coded in the time code user (binary) groups according to SMPTE 309M.

4.1 Time stamp burst_preamble

The burst_preamble for a time stamp data burst shall include a data_type_dependent field set to a value of

PROPOSED SMPTE STANDARD

SMPTE 363M
Revision of
SMPTE 363M-2002

for Television —
Declarative Data Essence — Content Level 1

Table of contents

1 Scope
2 Normative references
3 Introduction
4 Content formats
5 Transport types
Annex A JFIF guidelines for JPEG
Annex B Examples of integrating television with web pages
Annex C Using enhanced television
Annex D Glossary
Annex E Receiver trigger behavior
Annex F Security model
Annex G Bibliography

1 Scope

This standard defines a standard for the authoring of declarative data content intended to be combined primarily with video and/or audio services, and distributed to data-capable television signal receivers. Declarative content is generally nonprocedural, and most commonly in the form of HTML. However, procedural scripting is also defined.

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.

EIA-746-A-1988, Transport of Internet Uniform Resource Locator (URL) Information Using TEXT-2 (T-2) Service

SMPTE 343M-2002, Television — Declarative Data Essence — Local Identifier (lid:) URI Scheme

SMPTE 366M-2002, Television — Declarative Data Essence — Document Object Model Level 0 (DOM-0) and Related Object Environment

IETF RFC 1952, GZIP File Format Specification Version 4.3

IETF RFC 2046, Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types

PROPOSED SMPTE STANDARD

SMPTE 373M

for Television —
Mapping 10-Bit 4:2:2 Component Digital Video into the ATM Common Laver

1 Scope

This standard defines a mapping of digital television signals into the ATM common layer defined by SMPTE 354M. The digital signal formats supported are defined in ITU-R BT.656-4, Parts 1 and 2 (4:2:2, 13.5 MHz, 525-line or 625-line, with timing reference signals).

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.

SMPTE 354M-2002, Television – ATM Common Layer for Transport of Packetized Audio, Video and Data over Asynchronous Transfer Mode using ATM Adaptation Layer Type 1

ITU-R BT.656-4 – Interfaces for Digital Component Video Signals in 525-Line and 625-Line Television Systems Operating at the 4:2:2 Level of Recommendation ITU-R BT.601 (Part A, Section 1)

3 General specifications

3.1 The terms *video*, *video signal*, and *video frame* shall be used throughout this standard to refer to the digital signal format defined in ITU-R BT.656-4, parts 1 and 2. Figure 1 shows that the proposed application-specific standard is below the SMPTE 259M layer and above the ATM common layer in the overall protocol stack.

3.2 All bits in the frame shall be mapped into a single object in a container. This includes all lines in the frame, all samples in the line, and all bits in every word. (This allows the transparent carriage of SMPTE SDI and SDTI signal formats.) As described, this mapping preserves all bits of the signal as received by the network adapter equipment at the source end of transport. Therefore, error detection and handling (EDH) processing is not performed by the transport system. Specifically, the network adapter equipment at the source end and destination end do not regenerate EDH checksums, and do not transfer "error detected here" flags to the "error detected already" category.

3.3 The signal regenerated at the receiver from the ATM common layer should be identical to the signal mapped into the ATM common layer at the transmitter based on the use of FEC associated with the use of the ATM transmission.