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**Information technology — Generic coding  
of moving pictures and associated audio  
information: Systems**

**AMENDMENT 2: Carriage of auxiliary video  
data**

*Technologies de l'information — Codage générique des images  
animées et du son associé: Systèmes*

*AMENDEMENT 2: Chariot de données vidéo auxiliaires*

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Reference number  
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## Foreword

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This corrected version of ISO/IEC 13818-1:2007/Amd.2:2008 incorporates the following corrections: the title has been changed from "*Information technology — Generic coding of moving pictures and associated audio information: Systems — Amendment 2: Carriage of auxiliary video streams*" to "*Information technology — Generic coding of moving pictures and associated audio information: Systems — Amendment 2: Carriage of auxiliary video data*", and the reference on the cover page has been changed from "ISO" to "ISO/IEC".

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INTERNATIONAL STANDARD  
ITU-T RECOMMENDATION

Information technology – Generic coding of moving pictures  
and associated audio information: Systems

Amendment 2

Carriage of auxiliary video data

1) Clause 2.4.3.7

Replace Table 2-27 with the following one:

Table 2-27 – Stream\_id\_extension assignments

| stream_id_extension                                                                                                                                        | Note | stream coding                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------------------------------------|
| 000 0000                                                                                                                                                   | 1    | IPMP Control Information stream               |
| 000 0001                                                                                                                                                   | 2    | IPMP stream                                   |
| 000 0010 ... 000 1111                                                                                                                                      |      | ISO/IEC 14496-17 text stream                  |
| 001 0000 ... 001 1111                                                                                                                                      |      | <u>ISO/IEC 23002-3 auxiliary video stream</u> |
| <del>010 0010</del> 010 0000 ... 011 1111                                                                                                                  |      | reserved_data_stream                          |
| 100 0000 ... 111 1111                                                                                                                                      |      | private_stream                                |
| NOTE 1 – PES packets of stream_id_extension 0b000 0000 (IPMP Control Information Stream) have a unique syntax specified in ISO/IEC 13818-11 (MPEG-2 IPMP). |      |                                               |
| NOTE 2 – PES packets of stream_id_extension 0b000 0001 (IPMP Stream) have a unique syntax specified in ISO/IEC 13818-11 (MPEG-2 IPMP).                     |      |                                               |

2) Clause 2.4.4.9

Replace Table 2-34 with the following one:

Table 2-34 – Stream type assignments

| Value | Description                                                                                    |
|-------|------------------------------------------------------------------------------------------------|
| 0x00  | ITU-T   ISO/IEC Reserved                                                                       |
| 0x01  | ISO/IEC 11172-2 Video                                                                          |
| 0x02  | ITU-T Rec. H.262   ISO/IEC 13818-2 Video or ISO/IEC 11172-2 constrained parameter video stream |
| 0x03  | ISO/IEC 11172-3 Audio                                                                          |
| 0x04  | ISO/IEC 13818-3 Audio                                                                          |
| 0x05  | ITU-T Rec. H.222.0   ISO/IEC 13818-1 private_sections                                          |
| 0x06  | ITU-T Rec. H.222.0   ISO/IEC 13818-1 PES packets containing private data                       |
| 0x07  | ISO/IEC 13522 MHEG                                                                             |
| 0x08  | ITU-T Rec. H.222.0   ISO/IEC 13818-1 Annex A DSM-CC                                            |
| 0x09  | ITU-T Rec. H.222.1                                                                             |
| 0x0A  | ISO/IEC 13818-6 type A                                                                         |
| 0x0B  | ISO/IEC 13818-6 type B                                                                         |
| 0x0C  | ISO/IEC 13818-6 type C                                                                         |
| 0x0D  | ISO/IEC 13818-6 type D                                                                         |
| 0x0E  | ITU-T Rec. H.222.0   ISO/IEC 13818-1 auxiliary                                                 |

Table 2-34 – Stream type assignments

| Value     | Description                                                                                    |
|-----------|------------------------------------------------------------------------------------------------|
| 0x0F      | ISO/IEC 13818-7 Audio with ADTS transport syntax                                               |
| 0x10      | ISO/IEC 14496-2 Visual                                                                         |
| 0x11      | ISO/IEC 14496-3 Audio with the LATM transport syntax as defined in ISO/IEC 14496-3/Amd.1       |
| 0x12      | ISO/IEC 14496-1 SL-packetized stream or FlexMux stream carried in PES packets                  |
| 0x13      | ISO/IEC 14496-1 SL-packetized stream or FlexMux stream carried in ISO/IEC 14496_sections       |
| 0x14      | ISO/IEC 13818-6 Synchronized Download Protocol                                                 |
| 0x15      | Metadata carried in PES packets                                                                |
| 0x16      | Metadata carried in metadata_sections                                                          |
| 0x17      | Metadata carried in ISO/IEC 13818-6 Data Carousel                                              |
| 0x18      | Metadata carried in ISO/IEC 13818-6 Object Carousel                                            |
| 0x19      | Metadata carried in ISO/IEC 13818-6 Synchronized Download Protocol                             |
| 0x1A      | IPMP stream (defined in ISO/IEC 13818-11, MPEG-2 IPMP)                                         |
| 0x1B      | AVC video stream as defined in ITU-T Rec. H.264   ISO/IEC 14496-10 Video                       |
| 0x1C      | ISO/IEC 14496-3 Audio, without using any additional transport syntax, such as DST, ALS and SLS |
| 0x1D      | ISO/IEC 14496-17 Text                                                                          |
| 0x1E      | Auxiliary video stream as defined in ISO/IEC 23002-3                                           |
| 0x1F-0x7E | ITU-T Rec. H.222.0   ISO/IEC 13818-1 Reserved                                                  |
| 0x7F      | IPMP stream                                                                                    |
| 0x80-0xFF | User Private                                                                                   |

### 3) Clause 2.6.1

Replace Table 2-45 with the following one:

Table 2-45 – Program and program element descriptors

| descriptor_tag | TS  | PS  | Identification                          |
|----------------|-----|-----|-----------------------------------------|
| 0              | n/a | n/a | Reserved                                |
| 1              | n/a | X   | Forbidden                               |
| 2              | X   | X   | video_stream_descriptor                 |
| 3              | X   | X   | audio_stream_descriptor                 |
| 4              | X   | X   | hierarchy_descriptor                    |
| 5              | X   | X   | registration_descriptor                 |
| 6              | X   | X   | data_stream_alignment_descriptor        |
| 7              | X   | X   | target_background_grid_descriptor       |
| 8              | X   | X   | video_window_descriptor                 |
| 9              | X   | X   | CA_descriptor                           |
| 10             | X   | X   | ISO_639_language_descriptor             |
| 11             | X   | X   | system_clock_descriptor                 |
| 12             | X   | X   | multiplex_buffer_utilization_descriptor |
| 13             | X   | X   | copyright_descriptor                    |
| 14             | X   |     | maximum_bitrate_descriptor              |
| 15             | X   | X   | private_data_indicator_descriptor       |

Table 2-45 – Program and program element descriptors

| descriptor_tag | TS  | PS  | Identification                                             |
|----------------|-----|-----|------------------------------------------------------------|
| 16             | X   | X   | smoothing_buffer_descriptor                                |
| 17             | X   |     | STD_descriptor                                             |
| 18             | X   | X   | IBP_descriptor                                             |
| 19-26          | X   |     | Defined in ISO/IEC 13818-6                                 |
| 27             | X   | X   | MPEG-4_video_descriptor                                    |
| 28             | X   | X   | MPEG-4_audio_descriptor                                    |
| 29             | X   | X   | IOD_descriptor                                             |
| 30             | X   |     | SL_descriptor                                              |
| 31             | X   | X   | FMC_descriptor                                             |
| 32             | X   | X   | external_ES_ID_descriptor                                  |
| 33             | X   | X   | MuxCode_descriptor                                         |
| 34             | X   | X   | FmxBufferSize_descriptor                                   |
| 35             | X   |     | multiplexBuffer_descriptor                                 |
| 36             | X   | X   | content_labeling_descriptor                                |
| 37             | X   | X   | metadata_pointer_descriptor                                |
| 38             | X   | X   | metadata_descriptor                                        |
| 39             | X   | X   | metadata_STD_descriptor                                    |
| 40             | X   | X   | AVC video descriptor                                       |
| 41             | X   | X   | IPMP_descriptor (defined in ISO/IEC 13818-11, MPEG-2 IPMP) |
| 42             | X   | X   | AVC timing and HRD_descriptor                              |
| 43             | X   | X   | MPEG-2 AAC audio descriptor                                |
| 44             | X   | X   | FlexMux_Timing_descriptor                                  |
| 45             | X   | X   | MPEG-4_text_descriptor                                     |
| 46             | X   | X   | MPEG-4_audio_extension_descriptor                          |
| 47             | X   | X   | <u>auxiliary video stream descriptor</u>                   |
| 48-63          | n/a | n/a | ITU-T Rec. H.222.0   ISO/IEC 13818-1 Reserved              |
| 64-255         | n/a | n/a | User Private                                               |

#### 4) New clauses 2.6.74 to 2.6.75

Add the following clauses:

##### 2.6.74 Auxiliary video stream descriptor

The auxiliary video stream descriptor specifies parameters for the decoding and interpretation of the auxiliary video stream to which the descriptor is associated. For each auxiliary video stream carried in an ITU-T Rec. H.222.0 | ISO/IEC 13818-1 stream, the auxiliary video stream descriptor shall be included in the PMT or in the PSM, if PSM is present in the program stream.

Table 2-92.3 – Auxiliary video stream descriptor

| Syntax                                                                                                                                                              | No. of bits | Mnemonic                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------------------|
| Auxiliary_video_stream_descriptor() {<br><b>descriptor_tag</b><br><b>descriptor_length</b><br><b>aux_video_codedstreamtype</b><br>si_rbsp(descriptor_length-1)<br>} | 8<br>8<br>8 | <b>uimsbf</b><br><b>uimsbf</b><br><b>uimsbf</b> |

#### 2.6.75 Semantic definition of fields in auxiliary video stream descriptor

**aux\_video\_codedstreamtype** – An 8-bit unsigned integer that indicates the compression coding type of the auxiliary video stream. The value of **aux\_video\_codedstreamtype** shall match one of the stream types defined in Table 2-34 for video (for instance 0x02, 0x10 or 0x1B). In order to convey additional information such as profile/level, a descriptor that corresponds to the **aux\_video\_codedstreamtype** may also be included in the PMT or in the PSM, if PSM is present in the program stream, for the auxiliary video data stream.

NOTE – For example, if the auxiliary video is encoded using ITU-T Rec. H.264 | ISO/IEC 14496-10 Video, then the value of **aux\_video\_codedstreamtype** is 0x1B and an AVC video descriptor (descriptor\_tag = 40) can be optionally included.

**si\_rbsp()** – Supplemental Information RBSP as defined in ISO/IEC 23002-3. It shall contain at least one Auxiliary Video Supplemental Information (AVSI) message (also defined in ISO/IEC 23002-3). The type of auxiliary video is inferred from **si\_rbsp()**. The total size of **si\_rbsp()** shall not exceed 254 bytes.

### 5) New clause 2.16

Add the following new clause:

#### 2.16 Carriage of auxiliary video streams

ISO/IEC 23002-3 specifies auxiliary video streams. ISO/IEC 23002-3 auxiliary video streams can be carried over ITU-T Rec. H.222.0 | ISO/IEC 13818-1 streams as follows:

- in Table 2-27, 16 stream-id\_extension values are assigned to signal auxiliary video streams;
- in Table 2-34, one stream-type value is assigned to signal an auxiliary video stream;
- in Table 2-45, one descriptor tag is assigned to indicate an auxiliary video stream descriptor;
- in subclause 2.6.57 the auxiliary video stream descriptor is specified;
- the auxiliary video stream descriptor is associated to each auxiliary video stream.

Auxiliary video streams provide additional information about a conventional primary video sequence, as specified in ISO/IEC 23002-3. The auxiliary video stream shall be synchronized with its primary video counterpart through the use of timestamps in the associated PES header based on the same PCR clock.

In case a program contains multiple video streams, it will be up to the application to specify the association between the video component and auxiliary video streams.