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

**AMENDMENT 5: New audio profile and level  
signalling and change to audio\_type table  
entry**

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

*AMENDEMENT 5: Signalisation de nouvelles combinaisons de profil et  
de niveau de flux audio et modification de la table des types audio*

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The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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INTERNATIONAL STANDARD  
ITU-T RECOMMENDATION

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

Amendment 5

New audio profile and level signalling and change to audio\_type table entry

1) Subclause 2.6.2

Replace Table 2-39 by the following table (with the changes underlined>:

Table 2-39 – Program and program element descriptors

| descriptor_tag | TS  | PS  | Identification                          |
|----------------|-----|-----|-----------------------------------------|
| 0              | n/a | n/a | Reserved                                |
| 1              | n/a | n/a | Reserved                                |
| 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       |
| 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             |

Table 2-39 – Program and program element descriptors

| descriptor_tag | TS         | PS         | Identification                                             |
|----------------|------------|------------|------------------------------------------------------------|
| 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                              |
| <u>43</u>      | <u>X</u>   | <u>X</u>   | <u>MPEG-2 AAC audio descriptor</u>                         |
| <u>44-63</u>   | <u>n/a</u> | <u>n/a</u> | <u>ITU-T Rec. H.222.0   ISO/IEC 13818-1 Reserved</u>       |
| 64-255         | n/a        | n/a        | User Private                                               |

## 2) Subclause 2.6.19

Replace Table 2-53 by the following (with the changes underlined):

Table 2-53 – Audio type values

| Value            | Description                |
|------------------|----------------------------|
| 0x00             | Undefined                  |
| 0x01             | Clean effects              |
| 0x02             | Hearing impaired           |
| 0x03             | Visual impaired commentary |
| <u>0x04-0x7F</u> | <u>User Private</u>        |
| <u>0x80-0xFF</u> | <u>Reserved</u>            |

## 3) Subclause 2.6.40

Replace Table 2-62, MPEG-4\_audio\_profile\_and\_level assignment values, by the following table (with the changes underlined):

Table 2-62 – MPEG-4\_audio\_profile\_and\_level assignment values

| Value     | Description               |
|-----------|---------------------------|
| 0x00-0x0F | Reserved                  |
| 0x10      | Main profile, level 1     |
| 0x11      | Main profile, level 2     |
| 0x12      | Main profile, level 3     |
| 0x13      | Main profile, level 4     |
| 0x14-0x17 | Reserved                  |
| 0x18      | Scalable Profile, level 1 |
| 0x19      | Scalable Profile, level 2 |
| 0x1A      | Scalable Profile, level 3 |
| 0x1B      | Scalable Profile, level 4 |
| 0x1C-0x1F | Reserved                  |

Table 2-62 – MPEG-4\_audio\_profile\_and\_level assignment values

| Value            | Description                                   |
|------------------|-----------------------------------------------|
| 0x20             | Speech profile, level 1                       |
| 0x21             | Speech profile, level 2                       |
| 0x22-0x27        | Reserved                                      |
| 0x28             | Synthesis profile, level 1                    |
| 0x29             | Synthesis profile, level 2                    |
| 0x2A             | Synthesis profile, level 3                    |
| 0x2B-0x2F        | Reserved                                      |
| 0x30             | High quality audio profile, level 1           |
| 0x31             | High quality audio profile, level 2           |
| 0x32             | High quality audio profile, level 3           |
| 0x33             | High quality audio profile, level 4           |
| 0x34             | High quality audio profile, level 5           |
| 0x35             | High quality audio profile, level 6           |
| 0x36             | High quality audio profile, level 7           |
| 0x37             | High quality audio profile, level 8           |
| 0x38             | Low delay audio profile, level 1              |
| 0x39             | Low delay audio profile, level 2              |
| 0x3A             | Low delay audio profile, level 3              |
| 0x3B             | Low delay audio profile, level 4              |
| 0x3C             | Low delay audio profile, level 5              |
| 0x3D             | Low delay audio profile, level 6              |
| 0x3E             | Low delay audio profile, level 7              |
| 0x3F             | Low delay audio profile, level 8              |
| 0x40             | Natural audio profile, level 1                |
| 0x41             | Natural audio profile, level 2                |
| 0x42             | Natural audio profile, level 3                |
| 0x43             | Natural audio profile, level 4                |
| 0x44-0x47        | Reserved                                      |
| 0x48             | Mobile audio internetworking profile, level 1 |
| 0x49             | Mobile audio internetworking profile, level 2 |
| 0x4A             | Mobile audio internetworking profile, level 3 |
| 0x4B             | Mobile audio internetworking profile, level 4 |
| 0x4C             | Mobile audio internetworking profile, level 5 |
| 0x4D             | Mobile audio internetworking profile, level 6 |
| 0x4E-0x4F        | Reserved                                      |
| <u>0x50</u>      | <u>AAC profile, level 1</u>                   |
| <u>0x51</u>      | <u>AAC profile, level 2</u>                   |
| <u>0x52</u>      | <u>AAC profile, level 4</u>                   |
| <u>0x53</u>      | <u>AAC profile, level 5</u>                   |
| <u>0x54-0x57</u> | <u>Reserved</u>                               |
| <u>0x58</u>      | <u>High efficiency AAC profile, level 2</u>   |
| <u>0x59</u>      | <u>High efficiency AAC profile, level 3</u>   |
| <u>0x5A</u>      | <u>High efficiency AAC profile, level 4</u>   |
| <u>0x5B</u>      | <u>High efficiency AAC profile, level 5</u>   |
| <u>0x5C-0xFF</u> | <u>Reserved</u>                               |

**4) Subclause 2.6.67**

Add the following after subclause 2.6.67:

**2.6.68 MPEG-2 AAC audio descriptor**

For individual ISO/IEC 13818-7 streams directly carried in PES packets, the MPEG-2 AAC audio descriptor defined in Table Amd.5-1 provides basic information for identifying the coding parameters of such audio elementary streams.

**Table Amd.5-1 – MPEG-2 AAC\_audio\_descriptor**

| Syntax                                   | No. of bits | Mnemonic      |
|------------------------------------------|-------------|---------------|
| MPEG-2_AAC_audio_descriptor () {         |             |               |
| <b>descriptor_tag</b>                    | 8           | <b>uimsbf</b> |
| <b>descriptor_length</b>                 | 8           | <b>uimsbf</b> |
| <b>MPEG-2_AAC_profile</b>                | 8           | <b>uimsbf</b> |
| <b>MPEG-2_AAC_channel_configuration</b>  | 8           | <b>uimsbf</b> |
| <b>MPEG-2_AAC_additional_information</b> | 8           | <b>uimsbf</b> |
| }                                        |             |               |

**Semantics of fields in MPEG-2 AAC audio descriptor**

**MPEG-2\_AAC\_profile** – This 8-bit field indicates the AAC profile according to the index in ISO/IEC 13818-7:2004 subclause 7.1 Table 31.

**MPEG-2\_AAC\_channel\_configuration** – This 8-bit field indicates the number and configuration of audio channels presented to the listener by the AAC decoder for the specified program. Values in the range from 1 to 6 indicate number and configuration of audio channels as given for "Default bitstream index number" in ISO/IEC 13818-7:2004 subclause 8.9 Table 42. All other values indicate that the number and configuration of audio channels is undefined.

**MPEG-2\_AAC\_additional\_information** – This 8-bit field indicates whether or not bandwidth extension data as defined in ISO/IEC 13818-7:2004 is embedded in the AAC bitstream according to Table Amd.5-2.

**Table Amd.5-2 – MPEG-2 AAC\_additional\_information field values**

| Value     | Description                                                                      |
|-----------|----------------------------------------------------------------------------------|
| 0x00      | AAC data according to ISO/IEC 13818-7:2004                                       |
| 0x01      | AAC data with Bandwidth Extension data present according to ISO/IEC 13818-7:2004 |
| 0x02-0xFF | Reserved                                                                         |

**5) Subclause 2.11.2.1**

Replace the following text (with the changes underlined):

In case of an ISO/IEC 14496-3 elementary stream, before PES packetization the elementary stream data shall be first encapsulated in the LATM transport syntax defined in ISO/IEC 14496-3 / Amd.1. If a PTS is present in the PES packet header it shall refer to the first audio frame that follows the first syncword that commences in the payload of the PES packet.

to:

In case of an ISO/IEC 14496-3 elementary stream, before PES packetization the elementary stream data shall be first encapsulated in the LATM/LOAS AudioSyncStream() transport syntax defined in ISO/IEC 14496-3:2001 subclause 1.7.2. If a PTS is present in the PES packet header, it shall refer to the first audio frame that follows the first syncword that commences in the payload of the PES packet.