
**Information technology — Coding of
audio-visual objects —**

**Part 14:
MP4 file format**

**AMENDMENT 1: Handling of MPEG-4 audio
enhancement layers**

Technologies de l'information — Codage des objets audiovisuels —

Partie 14: Format de fichier MP4

*AMENDEMENT 1: Traitement des couches d'amélioration MPEG-4
audio*

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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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Amendment 1 to ISO/IEC 14496-14:2003 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

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Information technology — Coding of audio-visual objects —

Part 14: MP4 file format

AMENDMENT 1: Handling of MPEG-4 audio enhancement layers

In Clause 2, replace:

ISO/IEC 14496-1:2001, *Information technology — Coding of audio-visual objects — Part 1: Systems*
with:

ISO/IEC 14496-1:2010, *Information technology — Coding of audio-visual objects — Part 1: Systems*

In 5.1.1, replace:

The syntax for ObjectDescriptor and InitialObjectDescriptor is described in 8.6.2 through 8.6.4.

with:

The syntax for ObjectDescriptor and InitialObjectDescriptor is described in 7.2.6 of ISO/IEC 14496-1:2004.

In 5.1.2, replace:

The semantics for ObjectDescriptor and InitialObjectDescriptor are described in 8.6.2 through 8.6.4. The contents of this box are formed by taking an object descriptor or initial object descriptor and:

with:

The semantics for ObjectDescriptor and InitialObjectDescriptor are described in 7.2.6 of ISO/IEC 14496-1:2004. The contents of this box are formed by taking an object descriptor or initial object descriptor and:

In 5.2, replace:

- `dpnd` - this track has an MPEG-4 dependency on the referenced track

with:

- `dpnd` - this track has an MPEG-4 dependency on the referenced track. If the track type is an `MP4AudioEnhancementSampleEntry` as defined in clause 5.6 then this track-reference is mandatory and indicates a strong dependency, i.e. the track containing the reference cannot be decoded without the referenced track.

In 5.6, replace:

For visual streams, a VisualSampleEntry is used; for audio streams, an AudioSampleEntry. For all other MPEG-4 streams, a MpegSampleEntry is used. Hint tracks use an entry format specific to their protocol, with an appropriate name.

with:

For visual streams, an MP4VisualSampleEntry is used; for audio streams which are not enhancement layers, i.e. not a scalable extension, an MP4AudioSampleEntry is used. For audio streams which are enhancement layers, an MP4AudioEnhancementSampleEntry is used. For all other MPEG-4 streams, an MpegSampleEntry is used. Hint tracks use an entry format specific to their protocol, with an appropriate name.

In 5.6, add the following paragraph:

An MP4AudioEnhancementSampleEntry indicates that this track contains MPEG audio data that is enhancement audio data only (e.g. a spatial or quality enhancement) and the track cannot be decoded without the referenced audio track, as indicated by a mandatory track-reference of type `cond`.

In 5.6.1, add the following text to the fixed-size text:

```
class MP4AudioEnhancementSampleEntry() extends AudioSampleEntry ('m4ae') {  
    ESDBox ES;  
}
```