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AMENDMENT 2
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Information technology — Coding of audio-visual objects —

Part 1: **Systems**

AMENDMENT 2: 3D compression profile and level indication

Technologies de l'information — Codage des objets audiovisuels —

Partie 1: Systèmes

AMENDEMENT 2: Profil de compression 3D et indication du niveau

Reference number
ISO/IEC 14496-1:2004/Amd.2:2007(E)

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Foreword

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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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 2 to ISO/IEC 14496-1:2004 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

ISO/IEC 14496 specifies a system for the communication of interactive audio-visual scenes. The specification includes the following elements:

1) the coded representation of natural or synthetic, two-dimensional (2D) or three-dimensional (3D) objects that can be manifested audibly and/or visually (audio-visual objects) (specified in ISO/IEC 14496 parts 1, 2 and 3);

2) the coded representation of the spatio-temporal positioning of audio-visual objects as well as their behaviour in response to interaction (scene description, specified in of ISO/IEC 14496 parts 11 and 20);

3) the coded representation of information related to the management of data streams (synchronization, identification, description and association of stream content, specified in of ISO/IEC 14496 parts 11 and 20);

4) a generic interface to the data stream delivery layer functionality (specified in ISO/IEC 14496-6);

5) an application engine for programmatic control of the player: format, delivery of downloadable Java byte code as well as its execution lifecycle and behaviour through APIs (specified in ISO/IEC 14496-11); and

6) a file format to contain the media information of an ISO/IEC 14496 presentation in a flexible, extensible format to facilitate interchange, management, editing and presentation of the media.

The information representation, specified in ISO/IEC 14496-1, ISO/IEC 14496-11 and ISO/IEC 14496-20 describes the means to create an interactive audio-visual scene in terms of coded audio-visual information and associated scene description information. The encoded content is presented to a terminal as the collection of elementary streams. Elementary streams contain the coded representation of either audio or visual data, scene description information or user interaction data. Elementary streams may as well themselves convey information to identify streams, to describe logical dependencies between streams, or to describe information related to the content of the streams. Each elementary stream contains only one type of data.

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This amendment specifies the 3D compression profile to represent encoded 3D graphic objects. This profile will facilitate the creation of the bitstream which is suitable for the 3D contents as 3D games, GUIs and various 3D-based applications.

Part 16 of MPEG-4 “Animation Framework eXtension” (ISO/IEC 14496-16) defines a new set of tools for 3D static and animation data. In order to enable faithful and reliable reproduction of three-dimensional content in MPEG-4 presentations, the data format, bitstream, its stream type and its configuration are defined. The document also establishes new dimension of MPEG-4 3D compression profiles and levels and defines the 3D compression profiles and levels.

New 3D compression profiles and levels shall be signalled in MPEG-4 Systems to insure conformance. The scope of this amendment is to define new tools that will enable the signalling of the newly established 3D Compression Profile dimension and to specify 3D Compression Profile and Level Indication values.

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Part 1:
Systems

AMENDMENT 2: 3D compression profile and level indication

In Clause 2, add the following normative reference:

ISO/IEC 14496-16:2006, *Information technology — Coding of audio-visual objects — Part 16: Animation Framework eXtension (AFX).*

In subclause 7.2.6.19.1, replace:

```
class ExtensionProfileLevelDescriptor() extends BaseDescriptor :bit(8)
ExtensionProfileLevelDescrTag {
      bit(8) profileLevelIndicationIndex;
      bit(8) ODProfileLevelIndication;
      bit(8) sceneProfileLevelIndication;
      bit(8) audioProfileLevelIndication;
      bit(8) visualProfileLevelIndication;
      bit(8) graphicsProfileLevelIndication;
      bit(8) MPEGJProfileLevelIndication;
      bit(8) TextProfileLevelIndication;
}
```

with:

```
class ExtensionProfileLevelDescriptor() extends ExtensionDescriptor :  bit(8)
ExtensionProfileLevelDescrTag {
      bit(8) profileLevelIndicationIndex;
      bit(8) ODProfileLevelIndication;
      bit(8) sceneProfileLevelIndication;
      bit(8) audioProfileLevelIndication;
      bit(8) visualProfileLevelIndication;
      bit(8) graphicsProfileLevelIndication;
      bit(8) MPEGJProfileLevelIndication;
      bit(8) TextProfileLevelIndication;
      bit(8) 3DCProfileLevelIndication;
}
```

In subclause 7.2.6.19.2, add the following paragraph:

`3DCProfileLevelIndication` – an indication of the 3D Compression Profile and Level specified in ISO/IEC 14496-16 and required to process the content associated with the InitialObjectDescriptor containing this 3D Compression Profile and Level descriptor

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