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

Part 1: **Systems**

AMENDMENT 2: Support for raw audio-visual data

Technologies de l'information — Codage des objets audiovisuels —

Partie 1: Systèmes

AMENDEMENT 2: Prise en charge de données audiovisuelles brutes

Reference number
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Foreword

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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.

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 14496-1:2010 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This Amendment is to define the mechanisms for enabling the use of raw data (audio and video) an MPEG-4 scene. It consists in defining the ObjectTypeIndication, the DecoderSpecificInfo and the Access Unit for RawVideo and RawAudio.

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Part 1: Systems

AMENDMENT 2: Support for raw audio-visual data

In Table 1, replace line:

0x6A-0xBF	Reserved for ISO use

with lines:

0x6A-0x92	Reserved for Registration Authority
0x93-0xBF	Reserved for ISO use

In Table 2, replace line:

0x09-0xBF	Reserved for ISO (command tags)

with lines:

0x09-0x63	Reserved for Registration Authority
0x64-0xBF	Reserved for ISO (command tags)

In Table 5, replace line:

0x09-0x1F	reserved for ISO use

with lines:

0x09	LASeR stream (defined in ISO/IEC 14496-20:2008, clauses 6 and 12)
0x0A	SAF stream (defined in ISO/IEC 14496-20:2008, clause 7)
0x0B	Raw video stream
0x0C	Raw audio stream
0x0D-0x1F	reserved for ISO use

In Table 6, replace:

0x0C - 0x1F	reserved for ISO use

with:

0x0C	Application Multiplex Stream
0x0D - 0x5B	reserved for Registration Authority
0x5C - 0x1F	reserved for ISO use

In 7.2.6.7.2, add the following new paragraph at the end of the subclause:

For values of `DecoderConfigDescriptor.objectTypeIndication` that refer to streams complying with ISO/IEC 14496-20, the decoder specific information is a LASeRHeader() defined in 12.2.1 of ISO/IEC 14496-20:2008.

RAW Video Decoder Specific Info

```
class RAWVideoConfig extends DecoderSpecificInfo : bit(8) tag=DecSpecificInfoTag {
unsigned int(16)    width;
unsigned int(16)    height;
unsigned int(8)     bit_depth;
unsigned int(32)    stride;
unsigned int(32)    coding4CC;
unsigned int(8)     fps;
unsigned int(1)     use_frame_packing;
unsigned int(7)     frame_packing;
}
```

Semantics:

`width`	– width of the video of the largest color component
`height`	– height of the video of the largest color component
`bit_depth`	– number of bits for each channel sample from the set of permitted values as defined by coding4CC
`stride`	– size in bytes of one horizontal line
`coding4CC`	– a 4 character code representing the parameters of the raw data as specified by the MPEG-4 Registration Authority (http://www.mp4ra.org/)
`fps`	– frames per second of the video stream; if 0 then the frame rate is not known or variable
`use_frame_packing`	– this indicates if a frame contains two or more views
`frame_packing`	– framePacking as defined in ISO/IEC 23001-8, Coding Independent Code Points

Note For more than one view the data is packed in a single frame (it is assumed that all views are sampled at the same instant). The packaging is indicated by the `frame_packing` field.

Example

```
<decSpecificInfo>
<RAWVideoConfig width=480 height=800 bits_per_pixel=12 stride=720 colorFOURCC="NV21" fps=15
use_frame_packing=1 frame_packing=4 />
</decSpecificInfo>
```

Note NV21 is just an example `codingFOURCC` value.

RAW Audio Decoder Specific Info

```
class RAWAudioConfig extends DecoderSpecificInfo : bit(8) tag=DecSpecificInfoTag {
unsigned int(24)    sampling_rate;
unsigned int(16)    bits_per_sample;
unsigned int(8)     channels;
unsigned int(32)    coding4CC;
```


