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Information technology — MPEG systems technologies —

Part 8: Coding-independent code points

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Partie 8: Points de code indépendants du codage

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This second edition cancels and replaces the first edition (ISO/IEC 23001-8:2013), which has been technically revised.

It also incorporates the Amendment ISO/IEC 23001-8:2013/Amd 1:2015 and the Technical Corrigendum ISO/IEC 23001-8:2013/Cor 1:2015.

ISO/IEC 23001 consists of the following parts, under the general title *Information technology — MPEG systems technologies*:

— *Part 1: Binary MPEG format for XML*

— *Part 2: Fragment request units*

— *Part 3: XML IPMP messages*

— *Part 4: Codec configuration representation*

— *Part 5: Bitstream Syntax Description Language (BSDL)*

— *Part 7: Common encryption in ISO base media file format files*

— *Part 8: Coding-independent code points*

— *Part 9: Common encryption of MPEG-2 transport streams*

— *Part 10: Carriage of timed metadata metrics of media in ISO base media file format*

— *Part 11: Energy-efficient media consumption (green metadata)*

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Information technology — MPEG systems technologies —

Part 8: Coding-independent code points

1 Scope

This part of ISO/IEC 23001 defines various code points and fields that establish properties of a video or audio stream that are independent of the compression encoding and bit rate. These properties may describe the appropriate interpretation of decoded video or audio data or may, similarly, describe the characteristics of such signals before the signal is compressed by an encoder that is suitable for compressing such an input signal.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11664-1, *Colorimetry — Part 1: CIE standard colorimetric observers*

Rec. ITU-R BS.1770, *Algorithms to measure audio programme loudness and true-peak audio level*

Rec. ITU-R BS.1771-1, *Requirements for loudness and true-peak indicating meters*

EBU R 128, *Loudness normalization and permitted maximum level of audio signals*

EBU Tech 3341, *Loudness Metering: EBU mode metering to supplement loudness normalization in accordance with EBU R128*

EBU Tech 3342, *Loudness Range: A measure to supplement loudness normalisation in accordance with EBU R 128*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
channel
Ch.
conceptual representation of an audio signal for coding or transmission as it may be used within the digital signal processing chain of an audio codec

Note 1 to entry: A channel may correspond directly to one specific loudspeaker or it may carry an audio signal that is meant to be further processed and played back on more than one loudspeaker by some means not further specified here.

3.1.2
DRC
dynamic range compressor process that modifies the amplitude of an audio signal

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3.1.3
K-weighted
frequency weighting by means of a two-stage filter, as defined in Rec. ITU-R BS.1770

3.1.4
LKFS
loudness, K-weighted, relative to nominal full scale, as defined in Rec. ITU-R BS.1770

3.1.5
loudspeaker
LS
physical loudspeaker with a given geometric position relative to the listener and, if applicable, a label or name

Note 1 to entry: Even though the loudspeaker names used in this part of ISO/IEC 23001 each describe one discrete loudspeaker position, some loudspeaker signals may, in practice, be rendered on a loudspeaker array consisting of multiple loudspeakers which are all driven with the same audio signal, for example, in a theatrical setting.

3.1.6
loudspeaker index
association of a loudspeaker geometric position to a given index

3.1.7
loudspeaker layout
set of loudspeakers with a specific constellation of geometric positions meant for authoring or playback of audio content

3.1.8
loudspeaker layout index
association of a loudspeaker layout to a given index

3.2 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.

LSB least-significant bit

MSB most-significant bit

4 Conventions

NOTE The mathematical operators used in this part of ISO/IEC 23001 are similar to those used in the C programming language. However, integer division and arithmetic shift operations are specifically defined. Numbering and counting conventions generally begin from 0.

4.1 Arithmetic operators

The following arithmetic operators are defined as follows:

+ Addition.

− Subtraction (as a two-argument operator) or negation (as a unary prefix operator).

* Multiplication, including matrix multiplication.

x^y Exponentiation. Specifies x to the power of y. In other contexts, such notation is used for superscripting not intended for interpretation as exponentiation.

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