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Information technology — Coding-independent code points —

Part 3: **Audio**

Technologies de l'information — Points de code indépendants du codage —

Partie 3: Audio

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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 ISO documents 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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/IEC JTC1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

Together with ISO/IEC 23091-1 and ISO/IEC 23091-2[1)], this first edition of ISO/IEC 23091-3 cancels and replaces ISO/IEC 23001-8:2016, which has been technically revised.

A list of all parts in the ISO/IEC 23091 series can be found on the ISO website.

1) Under preparation. Stage at time of publication: ISO/IEC DIS 23091-2:2017.

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Introduction

There is a need to identify some characteristics of media that are logically independent of the compression format (for example, aspects that relate to the sourcing or presentation or the role of the media component). These media characteristics have typically been documented by fields that take an encoded value or item selected from an enumerated list, herein called code points.

Prior to the existence of the parts of this standard, the specification of these fields was copied into every document that needed them, sometimes with new values being added.

This past practice has raised a number of issues, including the following.

a) A lack of a formal way to avoid conflicting assignments being made.

b) Having additional values defined in later documents that may be practically used with older compression formats, without clear formal applicability of these new values.

c) Any update or correction of code point semantics can incur significant effort to update all places in which the code point is specified, instead of enabling a single central specification to apply.

d) The choice of reference for other specifications (such as container or delivery formats) not being obvious; wherein a formal reference to a compression format specification appears to favour that one format over others, and also appears to preclude definitions defined in other compression format specifications.

e) Burdensome maintenance needs to ensure that a reference to material defined in a compression format specification is maintained appropriately over different revisions of the referenced format specification, as the content of a compression format specification may change over time and is ordinarily not intended as a point of reference for defining such code points.

The parts of this series provide a central definition of such code points to address these issues. In this document, code points that are used for audio are specified. ISO/IEC 23091-1 specifies a Uniform Resource Name (URN) format that can be used with the code points defined in all parts of the series, including this one.

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Information technology — Coding-independent code points —

Part 3: Audio

1 Scope

This document defines various code points and fields that establish properties of an audio stream that are independent of the compression encoding and bit rate. These properties could describe the appropriate interpretation of decoded audio data or could, 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 are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 23091-1, *Information technology — Coding independent code points — Part 1: Systems*

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 R 128*

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

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
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

3.2
dynamic range compressor
DRC
process that modifies the amplitude of an audio signal

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3.3
K-weighted
frequency weighting by means of a two-stage filter

Note 1 to entry: As defined in Reference [3].

3.4
LKFS
loudness, K-weighted, relative to nominal full scale

Note 1 to entry: As defined in Reference [3].

3.5
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 document 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.

3.6
loudspeaker index
association of a loudspeaker geometric position to a given index

3.7
loudspeaker layout
set of loudspeakers with a specific constellation of geometric positions meant for authoring or playback of audio content

3.8
lousdspeaker layout index
association of a loudspeaker layout to a given index

4 Code points and usage

4.1 General

This Clause identifies the code points defined in this document, as listed in Table 1 with cross-references to the subclause in which each is specified.

Table 1 — List of code points

Name	Abstract	Subclause
OutputChannelPosition	Audio channel assignment	6.1
ChannelConfiguration	Audio channel configuration	6.2
LoudspeakerGeometry	Audio loudspeaker geometry	6.3
LoudspeakerElevation	Audio loudspeaker elevation	6.3
LoudspeakerAzimuth	Audio loudspeaker azimuth	6.3
ProgramLoudness	Audio program loudness level	6.4
AnchorLoudness	Audio anchor content loudness level	6.5
LoudnessRange	Range of loudness	6.6
LoudnessRangeTop	Top value of loudness range	6.7
MomentaryLoudnessMax	Maximum Loudness (400 ms window)	6.8
ShortTermLoudnessMax	Maximum Loudness (3 s window)	6.9

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