



Content Type for Loudness Control

Metadata specification

Version 1.0

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Note: The information contained within this document may be subject to change.

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Introduction

This document defines a user data extension payload for the ISO Base Media File Format [ISOBMFF] with the objective of controlling loudness. It encompasses the content type information of an audio track, which serves as an index to one of the predefined types. Furthermore, flags are provided to signify specific predefined properties of the content. Generally, this information is utilized in conjunction with other parameters to determine the playback loudness target for the purpose of normalizing the loudness across assets of this type.

References

[ISOBMFF] ISO/IEC 14496-12, ISO Base Media File Format

Metadata Specification

In Section 1, a new Content Type box is defined based on the File Format standard [ISOBMFF]. This box can be located within a user data box in the box hierarchy as depicted in the following Table. It is identified by the Four-Character-Code (4CC) 'ctlc'.

Box type hierarchy				
4CC and box level				Box content
moov				Container for all the structure data
	trak			Container for an individual track or stream
		udta		User data
			cprt	Copyright, and so on
			tsel	Track selection box
			kind	Track kind box
			strk	Subtrack box
			ctlc	Content type for loudness control
			ludt	Audio stream loudness

Content type for loudness control

Definition

Box Types: 'ctlc'
 Container: UserDataBox of the corresponding TrackBox
 Mandatory: No
 Quantity: Zero or one

A `ContentTypeForLoudnessControlBox` is placed within a `UserDataBox` to provide guidance for loudness adjustments of the corresponding track during playback. This information can be utilized to achieve consistent playback loudness for libraries containing content of the same type while enabling content-specific loudness adjustments.

If a catalog of a specific content type is provided for playback with ad insertion, the best practice is to tag the ads with the same content type as the catalog.

Syntax

```
aligned(8) class ContentTypeForLoudnessControlBox
    extends FullBox('ctlc', version=0, flags)
{
    unsigned int(8)    content_type = 0;
}
```

Semantics

`version` is an integer that specifies the version of this box (0 in this document).

`flags` is a 24-bit integer bit field where a specific bit indicates that the content has a defined designation when it is 1. `flags` is 0 or 2 for the main program. Defined designations are given below.

Bit position	Designation
0 (LSB)	Advertisement
1	Immersive audio content with non-LFE components located above or below the horizontal plane
2 to 23	Reserved for future use. Value defaults to zero when writing

`content_type` is an index that defines the content type of the track for loudness control as defined in the following table:

<code>content_type</code>	Description
0	Unknown or other type
1	Device capture, user generated content
2	Music, music video
3	Professional AV content encoded offline
4	Professional AV content encoded live
5	Audio book, audio drama, podcast, video podcast
6	Alarm
7	Ringtone (to initiate event)
8	Spoken system response
9	UI input feedback sound (example: keyboard click)
10	Other system sound
11 to 255	Reserved for future use