International Standard

ISO/IEC 14496-26

Information technology — Coding of audio-visual objects —

Part 26: Audio conformance

Technologies de l'information — Codage des objets audiovisuels —

Partie 26: Conformité audio

Second edition
2024-11

Reference number
ISO/IEC 14496-26:2024(en)

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Published in Switzerland

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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.

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 or www.iec.ch/members_experts/refdocs).

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

This second edition cancels and replaces the first edition (ISO/IEC 14496-26:2010), which has been technically revised. It also incorporates the Amendments ISO/IEC 14496-26:2010/Amd 2:2010, ISO/IEC 14496-26:2010/Amd 3:2014, ISO/IEC 14496-26:2010/Amd 4:2016, ISO/IEC 14496-26:2010/Amd 5:2018 and the Technical Corrigenda ISO/IEC 14496-26:2010/Cor 2:2011, ISO/IEC 14496-26:2010/Cor 3:2011, ISO/IEC 14496-26:2010/Cor 4:2011, ISO/IEC 14496-26:2010/Cor 5:2012, ISO/IEC 14496-26:2010/Cor 6:2013, ISO/IEC 14496-26:2010/Cor 7:2013 and ISO/IEC 14496-26:2010/Cor 8:2015.

The main changes are as follows:

- Introduced additional BSAC conformance bitstreams to assist in implementing Terrestrial-DMB products
- Correction according to bitstreams and wave files for BSAC
- Correction according to channel_pair_element()
- Correction for MPEG-4 ALS floating point bitstreams
- Correction for MPEG-4 SLS test sequences

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- Correction for BSAC and HE-AAC V2 profile
- Correction for ER AAC test sequences
- New conformance bitstreams for Low Delay AAC V2 profile
- Correction for AAC block length parameter and test sequences
- Additional multichannel conformance data for AAC and HE-AAC
- Additional levels of ALS simple profile and SBR enhancements
- Additional levels of MPEG-4 ALS simple profile supporting high-resolution audio

A list of all parts in the ISO/IEC 14496 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

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Introduction

ISO/IEC 14496-3 specifies coded representations of audio information. ISO/IEC 14496-3 allows for large flexibility, achieving suitability of ISO/IEC 14496 for many different applications. The flexibility is obtained by including parameters in the bitstream that define the characteristics of coded bitstreams. Examples are the audio sampling frequency bitrate parameters, synchronisation timestamps, the association of bitstreams and synthetic objects within objects.

Characteristics of compressed data and decoders are defined for ISO/IEC 14496-3. The compressed data characteristics define the subset of the standard that is exploited in the compressed data. Examples are the applied values or range of the sampling rate and bitrate parameters. Decoder characteristics define the properties and capabilities of the applied decoding process. An example of a property is the applied arithmetic accuracy. The capabilities of a decoder specify which compressed data the decoder can decode and reconstruct, by defining the subset of the standard that may be exploited in the decodable compressed data. Compressed data can be decoded by a decoder if the characteristics of the compressed data are within the subset of the standard specified by the decoder capabilities.

The tests described in this document can be used for various purposes such as:

- manufacturers of encoders, and their customers, can use the tests to verify whether the encoder produces bitstreams compliant with ISO/IEC 14496-3.
- manufacturers of decoders and their customers can use the tests to verify whether the decoder meets the requirements specified in ISO/IEC 14496-3 for the claimed decoder capabilities.
- manufacturers and customers of terminals supporting interactive, broadcast and local sessions over a multitude of transport protocols and networks, can use the tests to verify whether the claimed functionalities are compliant with ISO/IEC 14496-6.
- manufacturers of test equipments, and their customers can use the tests to verify compliance with ISO/IEC 14496-3.

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Information technology — Coding of audio-visual objects —

Part 26:
Audio conformance

1 Scope

This document specifies how tests can be designed to verify whether compressed data and decoders meet requirements specified by ISO/IEC 14496-3. Encoders are not addressed specifically. An ISO/IEC 14496 encoder generates compressed data compliant with the syntactic and semantic bitstream payload requirements specified in ISO/IEC 14496-3.

This document summarises the requirements, cross references them to characteristics, and defines how conformance with them can be tested. Guidelines are given on constructing tests to verify decoder conformance. Some examples of compressed data implemented according to these guidelines are provided as an electronic annex to this document usually together with their uncompressed counterparts (reference waveforms).

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/IEC 11172-3, *Information technology — Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s — Part 3: Audio*

ISO/IEC 11172-4, *Information technology — Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s — Part 4: Compliance testing*

ISO/IEC 13818-3, *Information technology — Generic coding of moving pictures and associated audio information — Part 3: Audio*

ISO/IEC 13818-4, *Information technology — Generic coding of moving pictures and associated audio information — Part 4: Conformance testing*

ISO/IEC 13818-7, *Information technology — Generic coding of moving pictures and associated audio information — Part 7: Advanced Audio Coding (AAC)*

ISO/IEC 14496-1, *Information technology — Coding of audio-visual objects — Part 1: Systems*

ISO/IEC 14496-3, *Information technology — Coding of audio-visual objects — Part 3: Audio*

ISO/IEC 14496-3:2019, *Information technology — Coding of audio-visual objects — Part 3: Audio*

ISO/IEC 14496-11, *Information technology — Coding of audio-visual objects — Part 11: Scene description and application engine*

ISO/IEC 23003-1, *Information technology — MPEG audio technologies — Part 1: MPEG Surround*

ISO/IEC 23003-2:2018, *Information technology — MPEG audio technologies — Part 2: Spatial Audio Object Coding (SAOC)*

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