International

ISO/IEC 14496-12

Information technology — Coding of audio-visual objects —

Part 12: ISO base media file format

Technologies de l'information — Codage des objets audiovisuels —

Partie 12: Format ISO de base pour les fichiers médias

Eighth edition
2026-04

Reference number
ISO/IEC 14496-12:2026(en)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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).

ISO and IEC draw attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO and IEC take no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO and IEC had received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents and https://patents.iec.ch. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

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 eigth edition cancels and replaces the seventh edition (ISO/IEC 14496-12:2022), which has been technically revised.

The main changes are as follows:

— specification of essential sample groups

— addition of the essential descriptions hierarchy sample group

— addition of the preselection entity group and related boxes

— addition of the extended dependent random access point (EDRAP) sample group

— specification of the sample-packed restricted video track

— addition of the associated external stream track reference

— relaxing the presence requirements of the `HandlerBox` within a `MetaBox`

— addition of the handler property for items.

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.

The ISO base media file format is designed to contain timed media information for a presentation in a flexible, extensible format that facilitates interchange, management, editing, and presentation of the media. This presentation may be 'local' to the system containing the presentation, or may be via a network or other stream delivery mechanism.

The file structure is object-oriented; a file can be decomposed into constituent objects very simply, and the structure of the objects inferred directly from their type.

The file format is designed to be independent of any particular network protocol while enabling efficient support for them in general.

The ISO base media file format is a base format for media file formats.

Structure of this document

Clause 4 defines ISO base media files; files that are built from boxes.

Clause 5 defines typed ISO base media files, i.e. ISO base media files with a `FileTypeBox`.

Clause 6 provides common specifications to movie files, item files and segment files.

Clause 7 gives the core concepts and data-types for time-based presentations, called 'movies' in this document.

Clause 8 defines the boxes used by time-based presentations, and other formats.

Clause 9 defines the hint track formats used to support some streaming protocols.

Clause 10 builds on the concept of sample groups as defined in subclause 8.9 and defines some sample groups.

Clause 11 defines how to base a file format on this document.

Clause 12 builds on the general concepts of tracks as defined in Clause 8, and defines track formats for various general types of media (video, sound, etc.).

Clause 13 specifies different types of transformed media tracks.

Annex A provides an informative introduction to time-based presentations, which may be of assistance to first-time readers and implementers.

Annex B provides guidance on writing derived specifications.

Annex C provides the syntax for uniform resource identifier (URI) fragments.

Annex D documents how identifier values defined externally to this document are managed.

Annex E defines brands that may be used to identify the conformance and reader requirements to the structures defined in this document for time-based presentations.

Annex F contains the formal IANA registration of segments.

Annex G defines some forms used for labelling metadata with uniform resource identifier (URI) labels.

Annex H provides an overview of the use of hint tracks for RTP streams and RTP stream reception.

Annex I contains the formal definitions of the types of stream access points in timed media streams.

Annex J contains examples of the use of the `SegmentIndexBox` defined in 8.14.3.

Annex K defines the MIME parameters that may be used to annotate MIME types for time-based presentations based on Clause 6.