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INTERNATIONAL STANDARD

# ISO/IEC 14496-15

Fourth edition
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# Information technology — Coding of audio-visual objects —

## Part 15: Carriage of network abstraction layer (NAL) unit structured video in the ISO base media file format

*Technologies de l'information — Codage des objets audiovisuels —*

*Partie 15: Transport de vidéo structuré en unités NAL au format ISO de base pour les fichiers médias*

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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

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.

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

This fourth edition cancels and replaces the third edition (ISO/IEC 14496-15:2014), which has been technically revised.

It also incorporates the Technical Corrigendum ISO/IEC 14496-15:2014/Cor 1:2015.

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

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# Introduction

This document defines a storage format based on, and compatible with, the ISO Base Media File Format (ISO/IEC 14496-12), which is used by the MP4 file format (ISO/IEC 14496-14) and the Motion JPEG 2000 file format (ISO/IEC 15444-3) among others. This document enables video streams formatted as Network Adaptation Layer Units (NAL Units) to

a) be used in conjunction with other media streams, such as audio,

b) be used in an MPEG-4 systems environment, if desired,

c) be formatted for delivery by a streaming server, using hint tracks, and

d) inherit all the use cases and features of the ISO Base Media File Format on which MP4 and MJ2 are based.

This document may be used as a standalone specification; it specifies how NAL unit structured video content shall be stored in an ISO Base Media File Format compliant format. However, it is normally used in the context of a specification, such as the MP4 file format, derived from the ISO Base Media File Format, that permits the use of NAL unit structured video such as AVC (ISO/IEC 14496-10) video and High Efficiency Video Coding (HEVC, ISO/IEC 23008-2) video.

The ISO Base Media File Format is becoming increasingly common as a general-purpose media container format for the exchange of digital media, and its use in this context should accelerate both adoption and interoperability.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

The ISO and IEC take no position concerning the evidence, validity and scope of this patent right.

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# Information technology — Coding of audio-visual objects —

## Part 15:
## Carriage of network abstraction layer (NAL) unit structured video in the ISO base media file format

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### 1 Scope

This document specifies the storage format for streams of video that is structured as NAL units, such as AVC (ISO/IEC 14496-10) and HEVC (ISO/IEC 23008-2) video streams.

### 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 14496-12:2015, *Information technology — Coding of audio-visual objects — Part 12: ISO base media file format*

ISO/IEC 14496-10:2014, *Information technology — Coding of audio-visual objects — Part 10: Advanced Video Coding*

ISO/IEC 23008-2:—[1)], *Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 2: High efficiency video coding*

1) To be published.

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