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Part 12: Sample variants

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Partie 12: Variantes d'échantillon

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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).

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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.

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 23001-12:2015), which has been technically revised.

The main changes compared to the previous edition are as follows:

— support for using sample variants for multiple alternate samples;

— support for using sample variants for multiple alternate protection schemes;

— support for carriage of sample variants in MPEG-2 transport streams.

A list of all parts in the ISO/IEC 23001 series can be found on the ISO website.

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.

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Information technology — MPEG systems technologies —

Part 12:
Sample variants

1 Scope

This document defines sample variants and their carriage in the ISO base media file format (ISO/IEC 14496-12) and MPEG-2 transport stream (ISO/IEC 13818-1).

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 13818-1:2018, *Information technology — Generic coding of moving pictures and associated audio information — Part 1: Systems*

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

ISO/IEC 23001-7, *Information technology — MPEG systems technologies — Part 7: Common encryption in ISO base media file format files*

ISO/IEC 23001-9, *Information technology — MPEG systems technologies — Part 9: Common encryption of MPEG-2 transport streams*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO/IEC 13818-1, ISO/IEC 14496-12, and the following apply.

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

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

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

3.1
double encrypted
encrypted first by a *media key* (3.3) (as part of the encryption of the complete sample variant) and then by a variant byte range key

Note 1 to entry: See 7.2.

3.2
media data stream
track or packetized elementary stream containing audio-visual content

Note 1 to entry: Track is as specified in ISO/IEC 14496-12.

Note 2 to entry: Packetized elementary stream is as specified in ISO/IEC 13818-1.

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3.3
media key
encryption key associated with one or more media *samples* (3.5)

3.4
media KID
encryption KID associated with one or more media *samples* (3.5)

3.5
sample
data of a sample or of an access unit

Note 1 to entry: Data of a sample is as specified in ISO/IEC 14496-12.

Note 2 to entry: Data of an access unit is as specified in ISO/IEC 13818-1.

3.6
sample variant
assembled media *sample* (3.5) replacing an original sample

3.7
sample variants media data stream Extractor
logical module that performs the steps that implement the process of generating a complete compliant *media data stream* (3.2) composed of *sample variants* (3.6)

3.8
variant byte range
location of a sequence of bytes that can constitute a portion of a *sample variant* (3.6)

3.9
variant constructor
sample variant (3.6) metadata that defines how to assemble an individual sample variant

3.10
variant data stream
track or packetized elementary stream for variant data

Note 1 to entry: Track is as specified in ISO/IEC 14496-12.

Note 2 to entry: Packetized elementary stream is as specified in ISO/IEC 13818-1.

3.11
variant media data
media data used to construct a *sample variant* (3.6)

Note 1 to entry: Some of the media data can come from the original media data stream.

3.12
variant processor
logical module that implements the process of assembling *sample variants* (3.6)

4 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.

CENC Common Encryption (as specified in ISO/IEC 23001-7)

CETS Common Encryption of MPEG-2 Transport Streams (as specified in ISO/IEC 23001-9)

DRM Digital Rights Management

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