International Standard

ISO/IEC 23090-23

Information technology — Coded representation of immersive media —

Part 23: Conformance and reference software for MPEG immersive video

Technologies de l'information — Représentation codée de média immersifs —

Partie 23: Conformité et logiciels de référence pour la vidéo immersive MPEG

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Foreword

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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 23090-23:2023), which has been technically revised.

The main changes are as follows:

— Additional reference bitstreams, updated reference software, and an extension of the decoder output logging process, to test the functionality that was added in ISO/IEC 23090-12:2025.

A list of all parts in the ISO/IEC 23090 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 23090-12 was developed to support compression of immersive video content, in which a real or virtual 3D scene is captured by multiple real or virtual cameras. The use of this document enables storage and distribution of immersive video content over existing and future networks, for playback with 6 degrees of freedom of view position and orientation.

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Information technology — Coded representation of immersive media —

Part 23: Conformance and reference software for MPEG immersive video

1 Scope

This document specifies a set of tests and procedures designed to indicate whether encoders or decoders meet the requirements specified in ISO/IEC 23090-12.

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 23090-12:2025, *Information technology — Coded representation of immersive media — Part 12: MPEG immersive video*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 23090-12 and the following apply.

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

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

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

3.1
alternative decoder
decoder (3.4) other than the *reference software decoder* (3.7)

3.2
bitstream
sequence of bits that conforms to the syntax requirements specified by ISO/IEC 23090-12 or sequence of bits to be tested for conformance to those syntax requirements

3.3
bitstream zip-file
archive file containing a bitstream plus files with information on that bitstream for the purpose of decoder conformance testing

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3.4
decoder
embodiment of the decoding process specified by ISO/IEC 23090-12 or process to be tested for conformance to that decoding process specification

Note 1 to entry: The decoding process does not include post-decoding, reconstruction and display process, which are outside of the scope of this document.

3.5
decoder output log
log file that is output by a *decoder* (3.4) in response to a *bitstream* (3.2) for use in bitstream analysis or decoder conformance testing

3.6
encoder
embodiment of a process that produces a *bitstream* (3.2)

Note 1 to entry: The process is not specified in this document.

3.7
reference software decoder
particular *decoder* (3.4) provided as a software package for use as an example available for study, as a potential starting basis for the development of other decoders, as a way of testing *bitstreams* (3.2) for conformance, and as a reference for comparison with the behaviour of other decoders

3.8
reference software encoder
particular *encoder* (3.6) provided as a software package for use as an example available for study, as a potential starting basis for the development of other encoders, and as a reference for comparison with the behaviour of other encoders

4 Abbreviated terms

For the purposes of this document, the abbreviated terms in ISO/IEC 23090-12:2025, Clause 4 apply.

5 Conventions

For the purposes of this document, the conventions specified in ISO/IEC 23090-12:2025, Clause 5 apply.

6 Conformance testing

6.1 General

The following clauses specify normative tests for verifying the conformance of bitstreams as well as decoders. Those normative tests make use of test data (bitstream test suites) provided as an electronic annex to this document and the reference software decoder.

6.2 Bitstream conformance

The bitstream conformance of ISO/IEC 23090-12 is specified by ISO/IEC 23090-12:2025, Clause E.4.

6.3 Decoder conformance

The decoder conformance of ISO/IEC 23090-12 is specified by ISO/IEC 23090-12:2025, Clause E.5.

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