International Standard

ISO/IEC 23090-12

Information technology — Coded representation of immersive media —

Part 12: MPEG immersive video

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

Partie 12: Vidéo immersive MPEG

Second edition
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Foreword

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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 23090-12:2023), which has been technically revised.

The main changes are as follows:

— Additional functionality: colourized geometry, capture device information, patch margins, background views, static background atlases, support for decoder-side depth estimation, chroma dynamic range modification, piecewise linear normalized disparity quantization, and linear depth quantization was added.

A list of all parts in the ISO/IEC 23090 series can be found on the ISO and IEC websites.

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Introduction

This document 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.

Information technology — Coded representation of immersive media —

Part 12: MPEG immersive video

1 Scope

This document specifies the syntax, semantics and decoding processes for MPEG immersive video (MIV), as an extension of ISO/IEC 23090-5. It provides support for playback of a three-dimensional (3D) scene within a limited range of viewing positions and orientations, with 6 Degrees of Freedom (6DoF).

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 14496-10:2022, *Information technology — Coding of audio-visual objects — Part 10: Advanced video coding*

ISO/IEC 23008-2:2023, *Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 2: High efficiency video coding*

ISO/IEC 23090-3:2021, *Information technology — Coded representation of immersive media — Part 3: Versatile video coding*

ISO/IEC 23090-5:2025, *Information technology — Coded representation of immersive media — Part 5: Visual Volumetric video-based coding (V3C) and Video-based point cloud compression (V-PCC)*