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Information technology — Coded representation of immersive media —

Part 33: Conformance and reference software for haptics coding

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

Partie 33: Conformité et logiciel de référence pour le codage haptique

Reference number
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Foreword

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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 describes the reference software and the conformance testing for ISO/IEC 23090-31, coding representation for Haptics. The reference software includes both encoder and decoder functionality.

The reference software is useful in aiding users of a standard for coding Haptics to establish and test conformance and interoperability, and to educate users and demonstrate the capabilities of the standard. For these purposes, the accompanying software is provided as an aid for the study and implementation of ISO/IEC 23090-31 compression of Haptics.

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Information technology — Coded representation of immersive media —

Part 33: Conformance and reference software for haptics coding

1 Scope

The document specifies a set of tests and procedures designed to indicate whether encoders or decoders meet the requirements specified in ISO/IEC 23090-31.

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 23090-31:2025, *Information technology — Coded representation of immersive media — Part 31: Haptics coding*

3 Terms, definitions, symbols and abbreviated terms

For the purposes of this document, the terms and definitions given in ISO/IEC 23090-31 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 Terms and definitions

3.1.1
bitstream
sequence of bits that conforms to the syntax requirements specified by ISO/IEC 23090-31 or sequence of bits to be tested for conformance to those syntax requirements

3.1.2
decoder
embodiment of the decoding process specified by ISO/IEC 23090-31

3.1.3
encoder
embodiment of a process, not specified in this document (except in respect to identification of the reference software encoder), that produces a bitstream

3.1.4
reference software decoder
particular *decoder* (3.1.2) 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 for conformance, and as a reference for comparison with the behaviour of other decoders

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3.1.5
reference software encoder
particular *encoder* (3.1.3) 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

3.2 Abbreviated terms and symbols

For the purposes of this document, the symbols and abbreviated terms given in ISO/IEC 23090-31 apply.

4 Reference software

4.1 General

The purpose of this clause is to provide the following:

— Reference decoder software capable of decoding bitstreams that shall conform to ISO/IEC 23090-31 in a manner that shall conform to the decoding process specified in ISO/IEC 23090-31.

— Reference encoder software capable of producing bitstreams that shall conform to ISO/IEC 23090-31.

Some examples of uses that can be appropriate for the reference decoder software are as follows:

— as an illustration of how to perform the decoding process specified in ISO/IEC 23090-31;

— as the starting basis for the implementation of a decoder that conforms to ISO/IEC 23090-31;

— for testing the conformance of a decoder implementation with the decoding process specified in ISO/IEC 23090-31;

— for testing the conformance of a bitstream to the constraints specified for bitstream conformance in ISO/IEC 23090-31, as the software can detect and report many bitstream conformance violations.

However, the lack of the detection of any conformance violation by the reference decoder software should not be considered as definitive proof that the bitstream conforms to all constraints specified for bitstream conformance in ISO/IEC 23090-31.

Some examples of uses that can be appropriate for the reference encoder software are as follows:

— as an illustration of how to perform an encoding process that produces bitstreams that conform to the constraints specified for bitstream conformance in ISO/IEC 23090-31;

— as the starting basis for the implementation of an encoder that conforms to ISO/IEC 23090-31;

— as a means of generating bitstreams for testing the conformance of a decoder implementation with the decoding process specified in ISO/IEC 23090-31;

— as a means of evaluating and demonstrating examples of the quality that can be achieved by an encoding process that conforms to ISO/IEC 23090-31.

4.2 Software location and license

The reference software is available at https://standards.iso.org/iso-iec/23090/-33/ed-1/en/

The software license is provided in the file LICENSE included with the software.

4.3 Software installation

Installation instructions are provided in the file Readme.md included with the software.

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