



**International
Standard**

ISO/IEC 23090-33

**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*

ISO/IEC 23090-33:2025

<https://standards.iteh.ai/catalog/standards/iso/c837b4ab-1ace-43d5-9dbc-aa4aca79d666/iso-iec-23090-33-2025>

**First edition
2025-11**

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO/IEC 23090-33:2025

<https://standards.iteh.ai/catalog/standards/iso/c837b4ab-1ace-43d5-9dbc-aa4aca79d666/iso-iec-23090-33-2025>



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms, definitions, symbols and abbreviated terms	1
3.1 Terms and definitions	1
3.2 Abbreviated terms and symbols	2
4 Reference software	2
4.1 General	2
4.2 Software location and license	2
4.3 Software installation	2
4.4 Software architecture	3
4.5 Software usage	3
4.5.1 General	3
4.5.2 Examples of encoding	3
4.5.3 Examples of decoding	3
4.5.4 Examples of synthesis	3
4.6 Input reference files and software evaluation	4
4.7 Reference software limitations	4
4.8 Recommended bitrates	5
5 Conformance testing	5
5.1 General	5
5.2 Conformance testing for interchange format	6
5.3 Conformance testing for MIHS stream	7
5.4 MIHS compatibility conformance	7
5.5 Conformance testing for decoder	8
5.6 Conformance testing and reference files	8
Annex A (informative) List of recommended bitrates with wavelet and vectorial encoding	9
Annex B (informative) List of recommended bitrates with wavelet encoding only	13
Annex C (informative) List of recommended bitrates with vectorial encoding only	17
Annex D (normative) List of HJIF schema constraints	18
Annex E (normative) List of HJIF semantic checks	20
Annex F (normative) List of MIHS constraints	22
Annex G (normative) List of HJIF constraints to ensure compatibility with MIHS	26
Annex H (informative) List of input reference files	28
Annex I (informative) List of schema conformance testing files	30
Annex J (informative) List of semantic conformance testing files	32
Annex K (informative) List of MIHS conformance testing files	33
Annex L (informative) List of MIHS compatibility testing files	34
Annex M (informative) List of MIHS conversion testing files	36

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 or www.iec.ch/members_experts/refdocs).

ISO and IEC draw attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO and IEC take no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO and IEC had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents and <https://patents.iec.ch>. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

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

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. In the IEC, see www.iec.ch/understanding-standards.

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*.

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.

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.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO/IEC 23090-33:2025](https://standards.iteh.ai/catalog/standards/iso/c837b4ab-1ace-43d5-9dbc-aa4aca79d666/iso-iec-23090-33-2025)

<https://standards.iteh.ai/catalog/standards/iso/c837b4ab-1ace-43d5-9dbc-aa4aca79d666/iso-iec-23090-33-2025>

