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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](https://www.iso.org/foreword-supplementary-information.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*.

A list of all parts in the ISO/IEC 23090 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](https://www.iso.org/members.html).

# Introduction

The conformance and reference software of ISO/IEC 23090-14 serves following main purposes:

* Validation of the written specification of the parts of ISO/IEC 23090-14: Second amendment 2.
* Clarification of the written specification of the parts of ISO/IEC 23090-14: Second amendment.
* Conformance testing for checking interoperability for the various applications against the reference software which aims to be complaint with ISO/IEC 23090-14: Second amendment.

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Information technology — Coded representation of immersive media — Part 24: Conformance and reference software for Scene Description – Amendment 1: Support for Haptics, augmented reality, avatars, interactivity, and lighting

# Scope

This document specifies the conformance and reference software implementing the normative clauses of ISO/IEC 23090‑14: second amendment.

# 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.

*glTF 2.0 Khronos Group, The GL Transmission Format (glTF) 2.0 Specification*, Available at <https://github.com/KhronosGroup/glTF/tree/master/specification/2.0/>

*ISO/IEC 23090-14, Information technology – Coded representation of immersive media- Part 14: Scene description*

# Terms, definitions, symbols, and abbreviated terms

For this document, the terms, definition and symbols and abbreviated terms given in the ISO/IEC 23090-14 apply.

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

* IEC Electropedia: available at <https://www.electropedia.org/>
* ISO online browsing platform: available at <https://www.iso.org/obp>

# Reference software

The reference software for extensions on Haptics, Interactivity, and lighting are part of the second amendment of ISO/IEC 23090-14. The implementation of the second amendment extensions will be merged with the branch named `feat/amd2`. Upon maturity, the implementation from feat/amd2 branch will be merge with the `develop` branch. Consequently, a new tag release will be generated.

[Ed. Note: All git issues related to software implementation of Amendment 2 of ISO/IEC 23090-14 in the reference software are tracked with a label ‘AMD2’. Please follow the link below for more information: [https://git.mpeg.expert/MPEG/Systems/SceneDescription/software/reference/-/issues/](https://git.mpeg.expert/MPEG/Systems/SceneDescription/software/reference/-/issues/?sort=updated_desc&state=opened&label_name%5B%5D=Amd%202%EF%B8%8F%E2%83%A3&first_page_size=20). Correspondingly, merge requests for the second amendment extension can be found in [https://git.mpeg.expert/MPEG/Systems/SceneDescription/software/reference/-/merge\_requests](https://git.mpeg.expert/MPEG/Systems/SceneDescription/software/reference/-/merge_requests?scope=all&state=opened&label_name%5b%5d=Amd%202%EF%B8%8F%E2%83%A3)/.]

# 5 Conformance software

The conformance software for extensions on Haptics, Interactivity, and lighting are part of the second amendment of ISO/IEC 23090-14. The implementation of second amendment extensions will be merged with the branch named `feat/amd2`. Upon maturity, the implementation from `feat/amd2` branch will be merge with the `develop` branch. Consequently, a new tag release will be generated.

Unit test or validation test assets will be part of the extension’s folder. A corresponding unit test case is available for extensions.

[ Ed. Note: All git issues related to software implementation of Amendment 2 of ISO/IEC 23090-14 in the conformance software are tracked with a label ‘AMD2’. Please follow the link below for more information: https://git.mpeg.expert/MPEG/Systems/SceneDescription/software/23090-24-gltf-validator/-/issues/. Correspondingly, merge requests for the second amendment extension can be found in https://git.mpeg.expert/MPEG/Systems/SceneDescription/software/23090-24-gltf-validator/-/merge\_requests/.]