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Information technology — Coded representation of immersive media —

Part 10: Carriage of visual volumetric video-based coding data

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

Partie 10: Transport de données de codage basé sur la vidéo volumétrique



Reference number
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Foreword

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Introduction

This document addresses the storage of visual volumetric video-based coding data in files based on ISO/IEC 14496-12, reusing existing tools for storage of video-coded components. Another important aspect considered by this document is supporting flexible extraction of component streams at delivery or decoding time, or both.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

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Information technology — Coded representation of immersive media —

Part 10:
Carriage of visual volumetric video-based coding data

1 Scope

This document specifies carriage of coded media representations which comply with visual volumetric video-based coding and video-based point cloud compression (specified in ISO/IEC 23090-5).

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.

IEEE 754-2019, *IEEE Standard for Floating-Point Arithmetic*

IETF RFC 6381, *The 'Codecs' and 'Profiles' Parameters for "Bucket" Media Types*

ISO/IEC 14496-12, *Information technology — Coding of audio-visual objects — Part 12: ISO base media file format*

ISO/IEC 14496-15, *Information technology — Coding of audio-visual objects — Part 15: Carriage of network abstraction layer (NAL) unit structured video in the ISO based media file format*

ISO/IEC 23008-1:2017, *Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 1: MPEG media transport (MMT)*

ISO/IEC 23009-1:2019, *Information technology — Dynamic adaptive streaming over HTTP (DASH) — Part 1: Media presentation description and segment formats*

ISO/IEC 23090-5:2021 , *Information technology — Coded representation of immersive media — Part 5: Visual Volumetric Video-based Coding (V3C) and Video-based Point Cloud Compression (V-PCC)*

W3C Recommendation, *XML schema part 1: Structures*

W3C Recommendation, *XML schema part 2: Datatypes*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 23090-5 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
atlas parameter sets
non-ACL NAL units that have nal_unit_type equal to NAL_ASPS, NAL_AAPS, or NAL_AFPS.

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3.2
V3C content
volumetric media that is encoded

Note 1 to entry: For the purposes of this document, the media shall be encoded using ISO/IEC 23090-5.

3.3
volumetric visual track
track with a handler type reserved to describe volumetric visual track

3.4
V3C track
V3C bitstream track, V3C atlas track or V3C atlas tile track

3.5
V3C bitstream track
volumetric visual track containing V3C bitstream in case of single-track container

3.6
V3C atlas track
volumetric visual track containing V3C atlas bitstream in case of multi-track container

3.7
V3C atlas tile track
volumetric visual track containing portion of V3C atlas bitstream corresponding to one or more tiles in case of multi-track container

3.8
V3C video component track
video track which carries 2D video encoded data for any of the occupancy, geometry, or attribute component video bitstreams of the V3C bitstream

4 Abbreviated terms

2D	two-dimensional
3D	three-dimensional
CVS	coded V3C sequence
DASH	dynamic adaptive streaming over HTTP
HTTP	Hyper-text transfer protocol
IRAP	intra random access point
ISOBMFF	ISO base media file format
LoD	level of detail
PCC	point cloud compression
SEI	supplemental enhancement information
V3C	visual volumetric video-based coding
VPS	V3C parameter set
V-PCC	video-based Point Cloud Coding

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