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Information technology - Multimedia application format (MPEG-A) —

Part 13: Augmented reality application format

Technologies de l'information - Format des applications multimedias —

Partie 13: Format pour les Applications de Realité Augmentée

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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 ISO documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.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*.

This second edition cancels and replaces the first edition (ISO/IEC 23000-13:2014), which has been technically revised.

It also incorporates the Amendment ISO/IEC 23000-13:2014/Amd. 1:2015.

A list of all parts in the ISO/IEC 23000 series can be found on the ISO website.

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Introduction

Augmented Reality (AR) applications refer to a view of a real-world environment (RWE), whose elements are augmented by content, such as graphics or sound, in a computer driven process. Augmented Reality Application Format (ARAF) is a collection of a subset of the ISO/IEC 14496-11 Scene Description and Application Engine standard, combined with other relevant MPEG standards (e.g. ISO/IEC 23005, MPEG-V), designed to enable the consumption of 2D/3D multimedia content. Consequently, this document focuses not on client or server procedures, but on the data formats used to provide an augmented reality presentation.

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1 Scope

This document specifies the following:

— scene description elements for representing AR content;

— mechanisms to connect to local and remote sensors and actuators;

— mechanisms to integrated compressed media (image, audio, video, graphics);

— mechanisms to connect to remote resources such as maps and compressed media.

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 10646-1:2012, *Information technology — Universal multiple-octet coded character set (UCS) — Part 1: Architecture and basic multilingual plane*

ISO/IEC 14496-1:2010 + Amd. 2:2014, *Information technology — Coding of audio-visual objects — Part 1: Systems*

ISO/IEC 14496-3:2009, *Information technology — Coding of audio-visual objects — Part 3: Audio*

ISO/IEC 14496-11:2015, *Information technology — Coding of audio-visual objects — Part 11: Scene description and application engine*

ISO/IEC 14496-16:2011, *Information technology — Coding of audio-visual objects — Part 16: Animation Framework eXtension (AFX)*

ISO/IEC 14772-1:1997, *Information technology — Computer graphics and image processing — The Virtual Reality Modeling Language — Part 1: Functional specification and UTF-8 encoding*

ISO/IEC 23005-5, *Information technology — Media context and control — Part 5: Data formats for interaction devices*

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 23000-1 and the following apply.

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

— ISO Online browsing platform: available at http://www.iso.org/obp

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