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Australian STANDARD®

STANDARDS Australia

Information technology — Computer graphics, image processing and environmental data representation — Mixed and augmented reality (MAR) reference model



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(c) "can" means that something is possible.

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A Standard always has the following parts:

(i) The Preface states who developed the Standard, what the Standard is aiming to do, and how it relates to other documents.

(ii) The Scope states what the Standard is about, what it covers and what it does not cover.

(iii) The Normative references clause lists other documents that are referenced in the Standard as part of requirements.

(iv) The Terms and definitions clause defines important terms to help with understanding the Standard.

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(2) An informative appendix provides additional information or guidance. They usually do not contain requirements. If an informative appendix does contain requirements, the Standard will explain when those requirements apply

(3) A Bibliography lists documents referenced in the Standard but not as part of requirements.

Many Standards include notes. Notes provide recommendations and/or guidance only. They never contain requirements.

Preface

This Standard was prepared by the Standards Australia Committee IT-031, Modelling and Simulation.

The objective of this document is to define the scope and key concepts of mixed and augmented reality, the relevant terms and their definitions and a generalized system architecture that together serve as a reference model for mixed and augmented reality (MAR) applications, components, systems, services and specifications. This architectural reference model establishes the set of required sub-modules and their minimum functions, the associated information content and the information models to be provided and/or supported by a compliant MAR system.

The reference model is intended for use by current and future developers of MAR applications, components, systems, services or specifications to describe, compare, contrast and communicate their architectural design and implementation. The MAR reference model is designed to apply to MAR systems independent of specific algorithms, implementation methods, computational platforms, display systems and sensors or devices used.

This document does not specify how a particular MAR application, component, system, service or specification is designed, developed or implemented. It does not specify the bindings of those designs and concepts to programming languages or the encoding of MAR information through any coding technique or interchange format. This document contains a list of representative system classes and use cases with respect to the reference model.

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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.

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).

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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.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 24, *Computer graphics, image processing and environmental data representation*.

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.

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Introduction

This document contains annexes:

— Annex A gives examples of existing MAR solutions and technologies and how they fit into the MAR reference model.

— Annex B gives examples of representative MAR systems and how their architecture maps to the MAR reference model.

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NOTES

Australian Standard®

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1 Scope

This document defines the scope and key concepts of mixed and augmented reality, the relevant terms and their definitions and a generalized system architecture that together serve as a reference model for mixed and augmented reality (MAR) applications, components, systems, services and specifications. This architectural reference model establishes the set of required sub-modules and their minimum functions, the associated information content and the information models to be provided and/or supported by a compliant MAR system.

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2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

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

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

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Terms and definitions

3.1.1
augmentation
virtual object (3.1.24) data (computer-generated, synthetic) added on to or associated with target *physical object* (3.1.15) data (live video, real world image) in an *MAR scene* (3.1.9)

Note 1 to entry: This equally applies to physical object data added on to or associated with target virtual object data.

3.1.2
augmented reality
type of *mixed reality system* (3.1.13) in which *virtual world* (3.1.25) data are embedded and/or registered with the representation of *physical world* (3.1.16) data

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