PD ISO/IEC TR 23843:2020

BSI Standards Publication

Information technology for learning, education and training — Catalogue model for virtual, augmented and mixed reality content

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National foreword

This Published Document is the UK implementation of ISO/IEC TR 23843:2020.

The UK participation in its preparation was entrusted to Technical Committee IST/43, Information technology for learning, education and training.

A list of organizations represented on this committee can be obtained on request to its committee manager.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited 2020

ISBN 978 0 539 02952 9

ICS 35.240.90

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 October 2020.

Amendments/corrigenda issued since publication

Date	Text affected

PD ISO/IEC TR 23843:2020

TECHNICAL REPORT

ISO/IEC TR 23843

First edition
2020-10

Information technology for learning, education and training — Catalogue model for virtual, augmented and mixed reality content

Technologies de l'information pour l'apprentissage, l'éducation et la formation — Modèle de catalogue pour les contenus en réalité virtuelle, augmentée et mixte

Reference number
ISO/IEC TR 23843:2020(E)

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Published in Switzerland

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Abbreviated terms **2**
5 Background **2**
5.1 Metadata for digital content 2
5.2 Characteristics of VR/AR/MR content 2
5.3 Actors and roles 3
5.4 Video games as the reference model 4
5.5 Application of game metadata 4
6 Catalogue model for VR/AR/MR content **6**
6.1 ADDIE model 6
6.1.1 General 6
6.1.2 Analyse 6
6.1.3 Design 7
6.1.4 Develop 7
6.1.5 Implement 7
6.1.6 Evaluate 7
6.2 Requirements for the catalogue model 8
6.2.1 General 8
6.2.2 Content entity 8
6.2.3 Platform entity 9
6.2.4 Local release entity 10
6.2.5 Distribution package entity 11
6.2.6 Additional content entity 11
6.2.7 Agent entity 12
Annex A (informative) **Related metadata models** **13**
Bibliography **21**

Foreword

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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 JTC1, *Information technology*, Subcommittee SC 36, *Information technology for learning, education and training*.

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.

Introduction

Effective use of the characteristics of virtual, augmented and mixed reality (VR, AR and MR, respectively) content in education has growing importance. There are increasing numbers of VR/AR/MR educational resources and there are also VR/AR/MR resources that have been aligned with curriculum documents. One of the main challenges is to search for and find content that is appropriate for the curriculum. However, lack of adequate description of such characteristics in a standard way makes it difficult for users to find suitable content.

This document describes a catalogue model for virtual, augmented and mixed reality content that can be linked to curriculum and achievement standards information. The curriculum catalogue metadata is designed to support search and retrieval of VR/AR/MR content in activities in education.

For teachers and learners, it supports:

— searching and selecting VR/AR/MR content related to curriculum;

— exploring specific features of the content (type, price, etc.) at a glance;

— finding technical information for the effective use of the VR/AR/MR content.

For the institution, it supports:

— managing the VR/AR/MR content related to the curriculum;

— adopting the VR/AR/MR content with priority based on the catalogue model.

For curriculum developers, it supports:

— comparing and identifying VR/AR/MR content for review to determine relevance to the curriculum.

For content providers, it supports:

— exploring and reviewing content to determine relevance and potential usefulness of content development initiatives;

— providing tools to gather reviews and feedback regarding content developed.

For device vendors, it supports:

— providing support for feedback regarding performance, technical configuration (e.g. platform, infrastructure), accessibility/usability information, and other improvements needed.

This document provides related catalogue models and specific elements of the catalogue model to use VR/AR/MR content for activities in education. However, specification of the catalogue model using the ISO/IEC 19788 series is not in the scope of this document.

TECHNICAL REPORT **ISO/IEC TR 23843:2020(E)**

Information technology for learning, education and training — Catalogue model for virtual, augmented and mixed reality content

1 Scope

This document describes how to search for virtual reality (VR), augmented reality (AR), and mixed reality (MR) content through a curriculum catalogue based on curriculum and achievement standards information. The curriculum catalogue metadata is defined in order to search for educational VR and MR content information.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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
curriculum
formally structured statement describing learning outcomes aligned to specific topics or units of learning, typically spanning all subject areas offered by an educational entity

3.2
virtual reality
VR
artificial environment presented using computer technologies

Note 1 to entry: Virtual reality has a high level of immersiveness, fidelity of information representation, and degree of active learner participation compared to other forms of mixed reality.

[SOURCE: ISO/IEC TR 18121:2015, 3.6]

3.3
augmented reality
AR
virtual objects superimposed upon or composited with the real world

Note 1 to entry: Virtual and real-world objects co-exist in augmented reality systems.