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Introduction

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/IEC DIS 24931-1

Information Technology — Metaverse —

Part 1: Concepts, definitions and terminology

ICS: 01.040.35; 35.240.95

ISO/IEC JTC 1/SC 24

Secretariat: **BSI**

Voting begins on:
2025-05-19

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2025-08-11

This document is circulated as received from the committee secretariat.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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).

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This document was prepared by Technical Committee *ISO/IEC JTC 1: Information Technology, 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.

Introduction

In futurism and science fiction, the metaverse is a hypothetical instance of the Internet as a persistent, universal, immersive, social, virtual world that is facilitated by virtual reality (VR) and augmented reality (AR). The term metaverse was first introduced in the 1992 science fiction novel Snow Crash where people access a virtual urban environment from VR goggles or public terminals.

The metaverse will be immersive, persistent, interactive, and allow users to have presence. It will comprise an entire digital world enabled through the networking of devices that can both mimic and extend the real world. VR provides immersion into the metaverse while AR can enable the metaverse to be layered onto the real world. The metaverse is intended to be a decentralized 3D virtual environment, in contrast to the current predominantly 2D Internet. Similar to the real world or internet, it will be always operational even though some parts may be non-operational for maintenance reasons.

Many organizations are seeking to define and create the metaverse. This document is intended to provide a general overview of the Metaverse and define some of the foundational terms and concepts. It is intended to be the first of a multi-part standard on aspects of the metaverse.

Information Technology — Metaverse —

Part 1: Concepts, definitions and terminology

1 Scope

This document provides an overview and defines fundamental terms and concepts for the metaverse.

This document specifies the following functionalities:

- a) Overview of the metaverse with description of its characteristics and technologies
- b) Fundamental concepts
- c) Terminology and definitions

2 Normative references

There are no normative references in this document.

3 Terms and Definition, Terminology and Abbreviated

For the purposes of this document, the following terms, definitions and abbreviated terms 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 <https://www.electropedia.org/>

3.1 Terminology

3.1.1

access point

a device, technology, or interface that enables users to enter or interact with the metaverse

Note 1 to entry: Access point, gateway and portal are frequently used interchangeably. However *gateway* (3.1.35) is a broader concept that refers to any interface or system that connects to the metaverse, while *portal* (3.1.59) refers to accessing a particular area of the metaverse generally through a *metaverse platform* (3.1.52).

Note 2 to entry: An access point includes the physical device (for example a VR headset) and also the firmware and software (for example a games platform) to integrate the user into a metaverse virtual world.

Note 3 to entry: An example of an access point is a human computer interface as shown in [Figure 1](#).

3.1.2

agent

system controlled by AI that assists users in navigating the metaverse

Note 1 to entry: ISO definition of 'software agent': digital entity that perceives its environment and takes actions that maximize its chance of successfully achieving its goals.

Note 2 to entry: Agents can provide recommendations, help with tasks, or facilitate interactions. Agents operate behind the scenes, unlike avatars, using AI to analyse user behaviour and preferences. They can also manage environments and automate processes, making the Metaverse more dynamic.

Note 3 to entry: A *chatbot* (3.1.14) is an example of an agent.

[SOURCE: ISO/IEC TR 29119-11:2020(en), 3.1.]

3.1.3

AI avatar

digital representation of a participant or character controlled by AI

Note 1 to entry: AI avatars are more interactive, personalized, and adaptable, making them suitable for a variety of applications whereas *NPCs* (3.1.56) are primarily designed to enrich the gaming experience with fixed roles and behaviours.

3.1.4

artificial intelligence

AI

ability of a computer or computer-controlled entity to perform tasks commonly associated with intelligent beings

[SOURCE: ISO/IEC TR 24030:2021(en), 3.1]

3.1.5

augmented reality

AR

interactive experience of a real-world environment whereby the objects that reside in the real world are augmented by computer-generated perceptual information

[SOURCE: ISO/IEC 18038:2020(en)]

3.1.6

avatar

digital (generally visual) representation of a human participant in the metaverse

EXAMPLE A player's representation in a video game and human or fantastic representation of a person in online worlds.

[SOURCE: ISO/IEC 23005-4:2018(en), 3.1.1]

Note 1 to entry: Avatars may represent non-humans (aliens) and other living creatures (e.g. animals including pets).

3.1.7

binaural sound

method of recording sound that uses two microphones, arranged with the intent to create a 3D stereo sound sensation for the listener of actually being in the room with the performers or instruments

Note 1 to entry: binaural sound is also known as binaural audio.

3.1.8

binocular parallax

apparent difference in the direction of a point as seen separately by one eye and the other, while the head remains in a fixed position.

Note 1 to entry: Binocular parallax is equivalent to the optic angle between the visual axes of both eyes, when they are fixated to a single point.

[SOURCE: ISO/TR 9241-331:2012(en), 2.21]

3.1.9

block

sequence of bits whose length is the block size of the block cipher

[SOURCE: ISO/IEC 29167-10:2017(en), 3.1.16]

3.1.10

blockchain

distributed ledger ([3.1.32](#)) with *confirmed blocks* ([3.1.12](#)) organized in an append-only, sequential chain using cryptographic links

Note 1 to entry: Blockchains are designed to be tamper-resistant and to create final, definitive and immutable ledger records.

[SOURCE: ISO 22739:2024(en)]

3.1.11

cloud computing

paradigm for enabling network access to a scalable and elastic pool of shareable physical or virtual resources with self-service provisioning and administration on-demand

[SOURCE: ISO/IEC 17788:2014, 3.25]

[SOURCE: ISO 81001-1:2021(en), 3.3.3]

3.1.12

confirmed block

block that has been confirmed (accepted as authentic by the blockchain network)

[SOURCE: ISO 22739:2024(en)]

3.1.13

brain computer interface

BCI

direct communication pathway between the brain's electrical activity and an external device, most commonly a computer or robotic limb^[1]

Note 1 to entry: ISO/IEC JTC 1/SC 43 Brain-computer interfaces is the relevant ISO/IEC subcommittee.

3.1.14

chatbot

software application that is designed to mimic human conversation through text or voice interactions

3.1.15

content creation

act of developing content for the metaverse

Note 1 to entry: This content can take many forms ranging from single 3D assets such as avatars to large events such as concerts that are wholly online.

3.1.16

content creator

1. person who develops content for the metaverse (see [3.1.15](#))
2. creator of media files that are being used within the MAR experience

Note 1 to entry: The media files can be 2D and/or 3D graphics, images, videos and/or sounds.

[SOURCE: ISO/IEC 23000-13:2017(en), 3.1.4]

3.1.17

crypto asset

digital asset ([3.1.21](#)) implemented using cryptographic techniques

Note 1 to entry: A distributed ledger technology (DLT) system ([3.1.32](#)) can be used to manage or transfer crypto assets.

[SOURCE: ISO 22739:2024(en)]