Technical Report

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# Information technology — Artificial intelligence for multimedia —

## Part 1: Vision and scenarios

*Technologies de l'information — Intelligence artificielle pour le multimédia —*

*Partie 1: Vision et scénarios*

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# Foreword

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# Introduction

This document is part of the ISO/IEC 23888 series (also known as MPEG-AI) on artificial intelligence (AI) for multimedia.

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# Information technology — Artificial intelligence for multimedia —

# Part 1: Vision and scenarios

## 1 Scope

This document presents the role of artificial intelligence (AI) technologies, including neural networks (NN), in multimedia coding and processing activities. It describes the current perspectives on AI for multimedia and identifies working assumptions and technical challenges expected from working with AI and NN-based technologies. This document highlights a variety of multimedia coding activities, key scenarios and gaps that are to be addressed by further standardization efforts.

## 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 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 General AI concepts and terminology

**3.1.1**
**AI component**
functional element that constructs an *AI system* (3.1.4)

[SOURCE: ISO/IEC 22989:2022, 3.1.2]

**3.1.2**
**activation function**
function applied to the weighted combination of all inputs of a *neuron* (3.1.15)

Note 1 to entry: Activation function allows neural networks to learn complicated features in the data. They are typically non-linear.

[SOURCE: ISO/IEC 22989:2022, 3.4.1]

**3.1.3**
**artificial intelligence**
AI
<discipline> research and development of mechanisms and applications of *AI systems* (3.1.4)

[SOURCE: ISO/IEC 22989:2022, 3.1.3, modified — Note 1 to entry has been removed.]

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