ICS 35.020 SLOVENSKÁ TECHNICKÁ NORMA Október 2023

STN	**Rámec pre systémy umelej inteligencie (AI) využívajúce strojové učenie (ML) (ISO/IEC 23053: 2022)**	**STN EN ISO/IEC 23053** 97 4162

Framework for Artificial Intelligence (AI) Systems Using Machine Learning (ML) (ISO/IEC 23053:2022)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/23

Obsahuje: EN ISO/IEC 23053:2023, ISO/IEC 23053:2022

137429

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO/IEC 23053

June 2023

ICS 35.020

English version

Framework for Artificial Intelligence (AI) Systems Using Machine Learning (ML) (ISO/IEC 23053:2022)

Cadre méthodologique pour les systèmes d'intelligence artificielle (IA) utilisant l'apprentissage machine (ISO/IEC 23053:2022)

Framework für Systeme der Künstlichen Intelligenz (KI) basierend auf maschinellem Lernen (ML) (ISO/IEC 23053:2022)

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European foreword

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INTERNATIONAL STANDARD

ISO/IEC 23053

First edition
2022-06

Framework for Artificial Intelligence (AI) Systems Using Machine Learning (ML)

Cadre méthodologique pour les systèmes d'intelligence artificielle (IA) utilisant l'apprentissage machine

Reference number
ISO/IEC 23053:2022(E)

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Published in Switzerland

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Foreword

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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 or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 42, *Artificial Intelligence*.

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Introduction

Artificial intelligence (AI) systems, in general, are engineered systems that generate outputs such as content, forecasts, recommendations or decisions for a given set of human-defined objectives. AI covers a wide range of technologies that reflect different approaches to dealing with these complex problems.

ML is a branch of AI that employs computational techniques to enable systems to learn from data or experiences. In other words, ML systems are developed through the optimisation of algorithms to fit to training data, or improve their performance based through maximizing a reward. ML methods include deep learning, which is also addressed in this document.

Terms such as knowledge, learning and decisions are used throughout the document. However, it is not the intent to anthropomorphize machine learning (ML).

This document aims to provide a framework for the description of AI systems that use ML. By establishing a common terminology and a common set of concepts for such systems, this document provides a basis for the clear explanation of the systems and various considerations that apply to their engineering and to their use. This document is intended for a wide audience including experts and non-practitioners. However, some of the clauses (identified in the overview in Clause 5), include more in-depth technical descriptions.

This document also provides the basis for other standards directed at specific aspects of ML systems and their components.

INTERNATIONAL STANDARD **ISO/IEC 23053:2022(E)**

Framework for Artificial Intelligence (AI) Systems Using Machine Learning (ML)

1 Scope

This document establishes an Artificial Intelligence (AI) and Machine Learning (ML) framework for describing a generic AI system using ML technology. The framework describes the system components and their functions in the AI ecosystem. This document is applicable to all types and sizes of organizations, including public and private companies, government entities, and not-for-profit organizations, that are implementing or using AI systems.

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 22989, *Information technology—Artificial intelligence — Artificial intelligence concepts and terminology*