FINAL DRAFT
International Standard

ISO/IEC FDIS 12792

Information technology — Artificial intelligence — Transparency taxonomy of AI systems

Technologies de l'information — Intelligence artificielle — Taxonomie pour la transparence des systèmes d'IA

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Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 42, *Artificial intelligence*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/CLC/JTC 21, *Artificial Intelligence*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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Introduction

The objectives of this document include:

— improving trustworthiness, accountability and communication among different AI stakeholders, including partners in a supply chain, customers, users, society and regulators, by establishing a consistent terminology around transparency of AI systems;

— providing AI stakeholders with information about different elements of transparency with their relevance and possible limitations to different use cases and target audience;

— serving as a basis for developing technology-specific, industry-specific or region-specific standards for transparency of AI systems.

Transparency for AI systems is the property of a system that stakeholders receive relevant information about the system. This can include information on items such as system features, limitations, data, system design and design choices (see ISO/IEC 22989:2022, 5.15.8).

Transparency enables relevant stakeholders to have access to information, so they can better understand how an AI system is developed, deployed and can be used. For example, this allows an AI customer (such as an AI user) of an AI system to determine if it is appropriate for their situation and supports an AI auditor in assessing if the system complies with conformity requirements.

A standardized transparency taxonomy of AI systems helps people with different backgrounds to better understand each other by using the same terminology. This in turn supports an improved understanding of AI systems, and provides a foundation for developing interoperable and coherent transparency related standards.

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This document is structured as follows:

— Clause 5 provides an overview of this document and describes the concept of transparency of AI systems;

— Clause 6 discusses how transparency needs can vary depending on the AI system context and on the stakeholders involved;

— Clause 7 discusses transparency items that describe the context of the AI system;

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— Clause 8 pertains to describing transparency disclosures at the AI system level;

— Clause 9 focuses on documenting the internal functioning of the system;

— Clause 10 offers guidance on the documentation of datasets as stand-alone items.

AI systems often affect society and the environment (see Clause 7). However, it is also true that society and the environment can affect the performance of an AI system. This can include various aspects, such as:

— environmental conditions that affect the functioning and longevity of an AI system;

— introduction or reinforcement of unwanted bias;

— organizational practices that can cause poor outcomes;

— effects such as concept drift (concept drift occurs when there is a change in the functional relationship between the model's input and output) and data drift (data drift is change in the statistical properties and characteristics of the input data);

— formation of unwanted feedback loops (e.g. negative reinforcement of discriminatory patterns), which can be especially problematic in the case of continuous learning.

While these are important items for consideration, a detailed analysis is not provided in this document. Some of these aspects are further detailed in ISO/IEC 23894, ISO/IEC 27701, and ISO/IEC 29134.

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Information technology — Artificial intelligence — Transparency taxonomy of AI systems

1 Scope

This document specifies a taxonomy of information elements to assist AI stakeholders with identifying and addressing the needs for transparency of AI systems. The document describes the semantics of the information elements and their relevance to the various objectives of different stakeholders.

This document is applicable to any kind of organization and application involving an AI system.

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 22989:2022, *Information technology — Artificial intelligence — Artificial intelligence concepts and terminology*

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 22989 and the following 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/

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3.1
attestation
issue of a statement, based on a decision, that fulfilment of *specified requirements* (3.14) has been demonstrated

Note 1 to entry: The resulting statement is intended to convey the assurance that the specified requirements have been fulfilled. Such an assurance does not, of itself, provide contractual or other legal guarantees.

Note 2 to entry: First-party attestation and third-party attestation are distinguished by the terms declaration, certification and accreditation, but there is no corresponding term applicable to second-party attestation.

[SOURCE: ISO/IEC 17000:2020, 7.3; modified — removed "referred to in this document as a "statement of conformity" from Note 1.]

3.2
carbon footprint
carbon footprint of a product
CFP
sum of greenhouse gas emissions and greenhouse gas removals in a product system, expressed as carbon dioxide equivalents and based on a life cycle assessment using the single impact category of climate change

[SOURCE: ISO 14050:2020, 3.11.1; modified — added the preferred term "carbon footprint"]

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