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Foreword

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Introduction

AI systems can collect more data, analyse them faster and control other systems in more precise manners than human experts. At the same time, AI systems can have unintended outputs such as unintended bias, which can have disastrous effects.

The ability to monitor and control the target AI system enables to suppress the unintended outputs, and enables to support safe and controlled operation of the AI system. The process to achieve the system to follow organizational policies set by governance frameworks with the ability is called human oversight.

Human oversight comprises activities at various levels. The first level is governance and management level activities. From the top to the bottom, these activities set goals to be achieved (e.g. the level of transparency the AI system should achieve) and addressed in ISO/IEC 38507 [1] and ISO/IEC 42001 [2]. The second is operational level activities (e.g. the details of the information to be monitored and controlled) based on the capability of the AI system. This activity is the focus of this document. The third is the controllability that defines the capability of the AI system to be controlled and monitored (e.g. the ability to display and change the internal states of AI systems) and is described in ISO/IEC TS 8200 [3]. The capabilities to respond to the mandate goes from the bottom to the top.

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Information technology — Artificial intelligence — Guidance for human oversight of AI systems

1 Scope

This document provides guidance on human control and monitoring of AI systems, which is referred to as human oversight. This document extends ISO/IEC TS 8200 [3].

This document is applicable to all types of organizations developing and using AI systems during their whole life cycle.

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 TS 8200, *Information technology — Artificial intelligence — Controllability of automated artificial intelligence systems*

ISO/IEC 22989, *Information technology — Artificial intelligence — Artificial intelligence concepts and terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 22989, ISO/IEC TS 8200 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
human oversight
activities by a human intended to control an AI system

Note 1 to entry: Human oversight typically allows either exercising control, in the case of a controllable system, as defined in ISO/IEC TS 8200:2024 [4], or invoking post-hoc procedures to modify the outputs, or making operational and other changes to the AI system.

Note 2 to entry: This operational-level oversight accomplishes some goals of governance-level oversight in the sense of ISO/IEC 38507:2022 [5], but is not identical to it, and may involve human decisions of when to exercise control, as defined in ISO/IEC TS 8200:2024 [4].

3.2
human oversight supervisor
designated person
designated human with responsibility or authority for *human oversight* (3.1)

Note 1 to entry: This role involves supervision of the AI system, not a supervisory role within an organization.

Note 2 to entry: Human oversight supervisor can be multiple people.

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3.3
AI system operator
human handling an AI system

[SOURCE: ISO 81060-1:2007 [6], 3.14 - modified, changed person to human, and changed equipment to AI system.]

3.4
Organization
human or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives

[SOURCE: ISO/IEC 42001:2023 [7], 3.1, removed notes to entries.]

4 Abbreviated terms

AI artificial intelligence

SaaS software as a service

5 Concept of human oversight of AI systems

5.1 General

As shown in Figure 1, human oversight comprises activities at various levels, and supported by various characteristics of AI systems. There are three-levels of activities on oversight, governance and management-level, operational-level, and controllability. Governance activity sets the goal and mandates to the bottom. They are described in ISO/IEC 38507:2022 [5] and ISO/IEC 42001:2023 [7], and is out of scope of this document. Controllability provides the capability to respond to the mandate, from bottom to the top. It is described in ISO/IEC TS 8200:2024 [4], and is also out of scope of this document.

As shown in Figure 1, human oversight is achieved based on controllable AI systems, which are described in ISO/IEC TS 8200:2024 [4]. The controllable AI system is monitored and controlled primarily by humans, which is described in this document. The controllable AI systems are part of the target of governance and management activities described in ISO/IEC 38507:2022 [5] and ISO/IEC 42001:2023 [7].

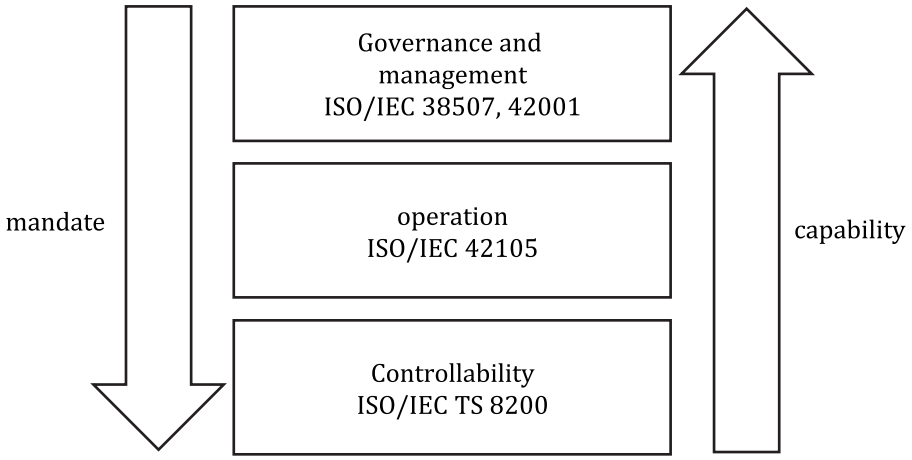


Figure 1 — Three-layer structure of ISO/IEC human oversight standards

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