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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

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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

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

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2026-02-16

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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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

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

To ensure safe and controlled operation of an AI system, the human who supervise the target AI system need to have sufficient ability for monitoring and controlling the target AI system, and for ensuring the system follows organizational policies set by governance frameworks. The process to achieve this objective is called human oversight.

Human oversight is one of starting points for maximizing the power of AI systems and optimizing their performance, preserving human autonomy in decision-making. In an appropriate environment, AI systems can collect much more data, analyse them much faster and control other systems in smarter ways than human experts. At the same time, human experts, end-users or bystanders can sometimes better manage AI system malfunctions, depending on the use case. All these issues are addressed under appropriate control and monitoring of the target AI system, or human oversight.

The level of monitoring and controlling capability can be sufficient, but not necessarily perfect. The level of monitoring and controlling capability is expected to be sufficient, but not necessarily perfect. For example, grandmasters of Go have not reached full understanding of the workings of Go AI systems but these Go AI systems contribute to the evolution of Go. This is the same as traditional IT systems.

Human oversight is related to various issues. The first one is controllability, that is, whether an AI system allows a human to intervene in the functioning of an AI system. This is a starting point of human oversight and is discussed in ISO/IEC TS 8200:2024 [\[1\]](#). There are technical issues of monitoring and controlling of AI systems, e.g. ergonomics issues such as transparency and explainability, human-machine interface for avoidance of automation bias and others. They are described in this document. There are also governance and management issues, e.g. appropriate policies, appropriate training of personnel. These issues are described in ISO/IEC 38507 [\[2\]](#) and ISO/IEC 42001 [\[3\]](#).

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.

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 8200:2024, *Information technology — Artificial intelligence — Controllability of automated artificial intelligence systems*

ISO/IEC 22989:2022, *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 22989:2022, ISO/IEC TS 8200:2024 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

3.2 human oversight supervisor

designated person
human with responsibility or authority for human oversight

Note 1 to entry: Human is considered equivalent to natural person in an organizational context.

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

3.3 natural person

real human being as opposed to a legal person which may be a private or public organization

[SOURCE: ISO 25237:2017 [4], 3.34]

3.4

AI customer

organization or entity that uses an AI product or service either directly or by its provision to AI users

3.5

AI user

organization or entity that uses AI products or services

3.6

AI developer

organization or entity that is concerned with the development of AI services and products

3.7

AI subject

organization or entity that is impacted by an AI system, service or product

3.8

AI system operator

natural person handling an AI system

[SOURCE: ISO 81060-1:2007 [\[5\]](#), 3.14 - modified, change person to natural person, and changed equipment to AI system]

3.9

end-user

person who actually uses a product or a service

3.10

Organization

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

[SOURCE: ISO/IEC 42001:2023 [\[6\]](#), 3.1]

4 Abbreviated terms

5 Concept of human oversight of AI systems and their monitoring and control aspects

5.1 General

This document describes guidance on monitoring and control aspects of human oversight, after briefly touching human oversight in general.

As shown in [Figure 1](#), human oversight is achieved based on controllable AI systems, which are described in ISO/IEC TS 8200:2024. The controllable AI system is monitored and controlled primarily by natural persons, 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 [\[7\]](#) and ISO/IEC 42001:2023 [\[6\]](#).

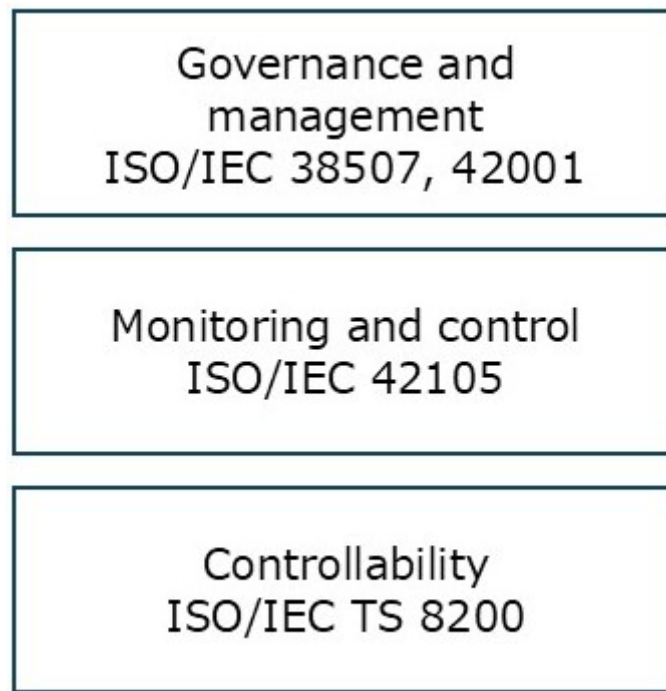


Figure 1 — Three-layer structure of human oversight standards

5.2 Objectives of human oversight

An AI system does not always work as intended by its AI developer and its AI customer because AI system is complicated and often works in a highly automated manner. In addition, because not every potential outcome can always be foreseen beforehand, unwanted side effects or consequences can be identified only after the deployment of the AI system. For example, sometimes important cases are found not included in training data after AI system deployment. In many cases these problems are identified not by its AI developer, but by its AI customers including AI users, or sometimes bystanders.

It is therefore necessary to ensure AI systems meet their business objectives. It is achieved by a person who directly supervises the target AI system and closely controls the output of AI systems through its human-machine interface. The AI customer sets policy for the target AI system, e.g. the level of bias or transparency, and the person who supervises the system monitors and controls the system to make the system does not violate the policy (e.g. unknown side effects). The effectiveness of human oversight depends on the clear policy, and is realized through appropriate mechanisms such as human-machine interfaces for monitoring and control.

An AI system can have multiple objectives to achieve, e.g. performance and security. In human oversight, it is important to balance the objectives. The relative priority of the multiple objectives depends on the context and the target system including risks and level of automation.

Human oversight is one of the means to mitigate risks. As described in ISO/IEC Guide 51 [\[8\]](#), risk mitigation activity reduces risks to make the risk tolerable, but does not eliminate risks completely. In this context, handling of risks of AI system are the same as risks for traditional systems.

5.3 Various types of human oversight

5.3.1 General

There are various types of human oversight. The target AI system can be a subsystem of another AI system and human oversight supervisor can access the target AI system through other subsystems such as

supporting tools. Timing and the ability of intervention can vary. Finally, there can be various difficulties for achieving effective human oversight.

NOTE Some sources use terminology such as “human on/in-the-loop” or “human-in-command”. While these terms have engineering origins, they have increasingly been adopted by policymakers, the media and others for policy, legal or other purposes. In the context of AI systems, “loop” and “command”-related terminology can be ambiguous, imprecise and often suggestive of a level or form of oversight or controllability that is not, in reality, possible. [Annex B](#) details the rationale for why the authors of this standard purposefully decided to not make use of terms involving “loop” or “command” in connection with humans and AI systems.

5.3.2 Target AI system of human oversight

5.3.2.1 Range of target AI system

AI system includes whole AI product and service, i.e. AI functionalities as well as system interfaces, business logic implementations, computing resources and physical facilities. See ISO/IEC TS 8200:2024, Figure 1 for more details.

The AI system overseen sometimes composed of multiple subsystems. In some cases another system, or a supporting tool is added as a subsystem. Human oversight supervisor is expected to supervise the whole system even if such tools are added.

Considering who develops the system, there can be three patterns for the target AI system and human oversight supervisor, as shown in [Figure 2](#).

Pattern 1: human oversight supervisor directly monitors and controls the AI system provided by AI producer, or the target AI system.

Pattern 2: AI producer provides AI or non-AI system (supporting tool) as well as main AI system. Target AI system includes both main AI system and supporting tool.

Pattern 3: AI customer adds third party’s additional AI or non-AI systems to main AI systems provided by AI producer. Target AI system includes both main AI system and supporting tool.

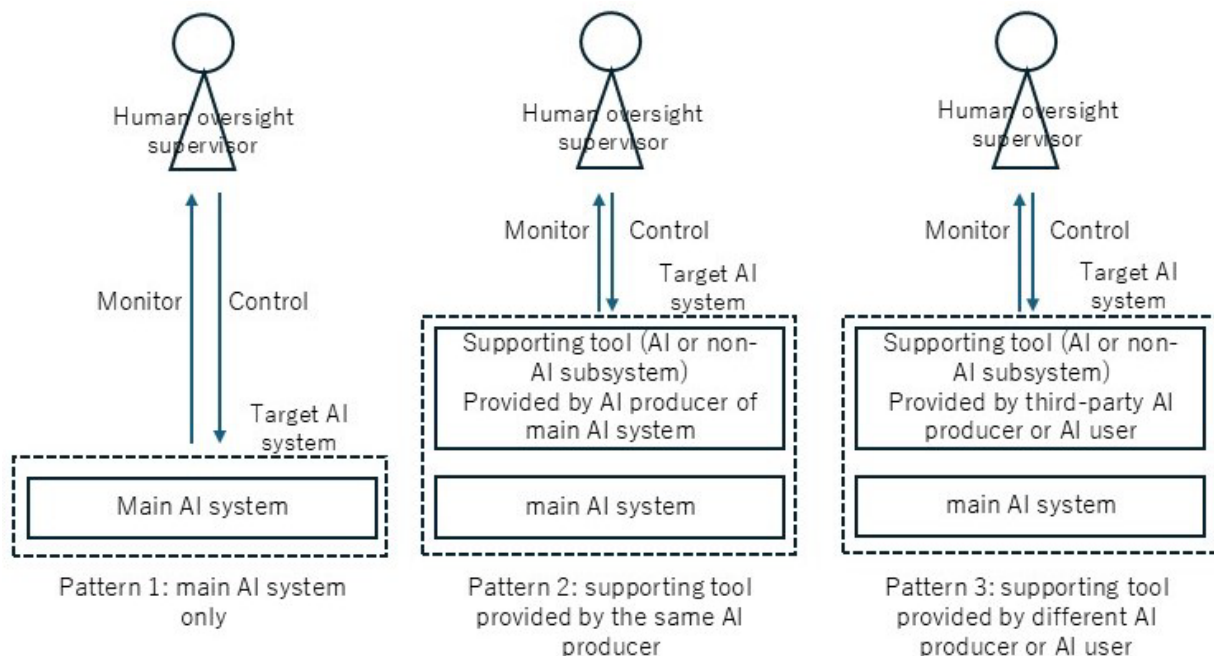


Figure 2 — The target AI system of human oversight