
Information technology — Artificial intelligence — Management system

*Technologies de l'information — Intelligence artificielle — Système
de management*

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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*.

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 and www.iec.ch/national-committees.

Introduction

Artificial intelligence (AI) is increasingly applied across all sectors utilizing information technology and is expected to be one of the main economic drivers. A consequence of this trend is that certain applications can give rise to societal challenges over the coming years.

This document intends to help organizations responsibly perform their role with respect to AI systems (e.g. to use, develop, monitor or provide products or services that utilize AI). AI potentially raises specific considerations such as:

- The use of AI for automatic decision-making, sometimes in a non-transparent and non-explainable way, can require specific management beyond the management of classical IT systems.
- The use of data analysis, insight and machine learning, rather than human-coded logic to design systems, both increases the application opportunities for AI systems and changes the way that such systems are developed, justified and deployed.
- AI systems that perform continuous learning change their behaviour during use. They require special consideration to ensure their responsible use continues with changing behaviour.

This document provides requirements for establishing, implementing, maintaining and continually improving an AI management system within the context of an organization. Organizations are expected to focus their application of requirements on features that are unique to AI. Certain features of AI, such as the ability to continuously learn and improve or a lack of transparency or explainability, can warrant different safeguards if they raise additional concerns compared to how the task would traditionally be performed. The adoption of an AI management system to extend the existing management structures is a strategic decision for an organization.

The organization's needs and objectives, processes, size and structure as well as the expectations of various interested parties influence the establishment and implementation of the AI management system. Another set of factors that influence the establishment and implementation of the AI management system are the many use cases for AI and the need to strike the appropriate balance between governance mechanisms and innovation. Organizations can elect to apply these requirements using a risk-based approach to ensure that the appropriate level of control is applied for the particular AI use cases, services or products within the organization's scope. All these influencing factors are expected to change and be reviewed from time to time.

The AI management system should be integrated with the organization's processes and overall management structure. Specific issues related to AI should be considered in the design of processes, information systems and controls. Crucial examples of such management processes are:

- determination of organizational objectives, involvement of interested parties and organizational policy;
- management of risks and opportunities;
- processes for the management of concerns related to the trustworthiness of AI systems such as security, safety, fairness, transparency, data quality and quality of AI systems throughout their life cycle;
- processes for the management of suppliers, partners and third parties that provide or develop AI systems for the organization.

This document provides guidelines for the deployment of applicable controls to support such processes.

This document avoids specific guidance on management processes. The organization can combine generally accepted frameworks, other International Standards and its own experience to implement crucial processes such as risk management, life cycle management and data quality management which are appropriate for the specific AI use cases, products or services within the scope.

An organization conforming with the requirements in this document can generate evidence of its responsibility and accountability regarding its role with respect to AI systems.

The order in which requirements are presented in this document does not reflect their importance or imply the order in which they are implemented. The list items are enumerated for reference purposes only.

Compatibility with other management system standards

This document applies the harmonized structure (identical clause numbers, clause titles, text and common terms and core definitions) developed to enhance alignment among management system standards (MSS). The AI management system provides requirements specific to managing the issues and risks arising from using AI in an organization. This common approach facilitates implementation and consistency with other management system standards, e.g. related to quality, safety, security and privacy.

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Information technology — Artificial intelligence — Management system

1 Scope

This document specifies the requirements and provides guidance for establishing, implementing, maintaining and continually improving an AI (artificial intelligence) management system within the context of an organization.

This document is intended for use by an organization providing or using products or services that utilize AI systems. This document is intended to help the organization develop, provide or use AI systems responsibly in pursuing its objectives and meet applicable requirements, obligations related to interested parties and expectations from them.

This document is applicable to any organization, regardless of size, type and nature, that provides or uses products or services that utilize 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 22989:2022, *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 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/>

3.1 organization

person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its *objectives* (3.6)

Note 1 to entry: The concept of organization includes, but is not limited to, sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution or part or combination thereof, whether incorporated or not, public or private.

Note 2 to entry: If the organization is part of a larger entity, the term “organization” refers only to the part of the larger entity that is within the scope of the AI *management system* (3.4).

3.2 interested party

person or *organization* (3.1) that can affect, be affected by, or perceive itself to be affected by a decision or activity

Note 1 to entry: An overview of interested parties in AI is provided in ISO/IEC 22989:2022, 5.19.

3.3

top management

person or group of people who directs and controls an *organization* (3.1) at the highest level

Note 1 to entry: Top management has the power to delegate authority and provide resources within the organization.

Note 2 to entry: If the scope of the *management system* (3.4) covers only part of an organization, then top management refers to those who direct and control that part of the organization.

3.4

management system

set of interrelated or interacting elements of an *organization* (3.1) to establish *policies* (3.5) and *objectives* (3.6), as well as *processes* (3.8) to achieve those objectives

Note 1 to entry: A management system can address a single discipline or several disciplines.

Note 2 to entry: The management system elements include the organization's structure, roles and responsibilities, planning and operation.

3.5

policy

intentions and direction of an *organization* (3.1) as formally expressed by its *top management* (3.3)

3.6

objective

result to be achieved

Note 1 to entry: An objective can be strategic, tactical, or operational.

Note 2 to entry: Objectives can relate to different disciplines (such as finance, health and safety, and environment). They can be, for example, organization-wide or specific to a project, product or *process* (3.8).

Note 3 to entry: An objective can be expressed in other ways, e.g. as an intended result, as a purpose, as an operational criterion, as an AI objective or by the use of other words with similar meaning (e.g. aim, goal, or target).

Note 4 to entry: In the context of AI *management systems* (3.4), AI objectives are set by the *organization* (3.1), consistent with the AI *policy* (3.5), to achieve specific results.

3.7

risk

effect of uncertainty

Note 1 to entry: An effect is a deviation from the expected — positive or negative.

Note 2 to entry: Uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of, an event, its consequence, or likelihood.

Note 3 to entry: Risk is often characterized by reference to potential events (as defined in ISO Guide 73) and consequences (as defined in ISO Guide 73), or a combination of these.

Note 4 to entry: Risk is often expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated likelihood (as defined in ISO Guide 73) of occurrence.

3.8

process

set of interrelated or interacting activities that uses or transforms inputs to deliver a result

Note 1 to entry: Whether the result of a process is called an output, a product or a service depends on the context of the reference.

3.9**competence**

ability to apply knowledge and skills to achieve intended results

3.10**documented information**

information required to be controlled and maintained by an *organization* (3.1) and the medium on which it is contained

Note 1 to entry: Documented information can be in any format and media and from any source.

Note 2 to entry: Documented information can refer to:

- the *management system* (3.4), including related *processes* (3.8);
- information created in order for the organization to operate (documentation);
- evidence of results achieved (records).

3.11**performance**

measurable result

Note 1 to entry: Performance can relate either to quantitative or qualitative findings.

Note 2 to entry: Performance can relate to managing activities, *processes* (3.8), products, services, systems or *organizations* (3.1).

Note 3 to entry: In the context of this document, performance refers both to results achieved by using AI systems and results related to the AI *management system* (3.4). The correct interpretation of the term is clear from the context of its use.

3.12**continual improvement**

recurring activity to enhance *performance* (3.11)

3.13**effectiveness**

extent to which planned activities are realized and planned results are achieved

3.14**requirement**

need or expectation that is stated, generally implied or obligatory

Note 1 to entry: “Generally implied” means that it is custom or common practice for the *organization* (3.1) and *interested parties* (3.2) that the need or expectation under consideration is implied.

Note 2 to entry: A specified requirement is one that is stated, e.g. in *documented information* (3.10).

3.15**conformity**

fulfilment of a *requirement* (3.14)

3.16**nonconformity**

non-fulfilment of a *requirement* (3.14)

3.17**corrective action**

action to eliminate the cause(s) of a *nonconformity* (3.16) and to prevent recurrence

3.18

audit

systematic and independent *process* (3.8) for obtaining evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled

Note 1 to entry: An audit can be an internal audit (first party) or an external audit (second party or third party), and it can be a combined audit (combining two or more disciplines).

Note 2 to entry: An internal audit is conducted by the *organization* (3.1) itself, or by an external party on its behalf.

Note 3 to entry: "Audit evidence" and "audit criteria" are defined in ISO 19011.

3.19

measurement

process (3.8) to determine a value

3.20

monitoring

determining the status of a system, a *process* (3.8) or an activity

Note 1 to entry: To determine the status, there can be a need to check, supervise or critically observe.

3.21

control

<risk> measure that maintains and/or modifies *risk* (3.7)

Note 1 to entry: Controls include, but are not limited to, any process, policy, device, practice or other conditions and/or actions which maintain and/or modify risk.

Note 2 to entry: Controls may not always exert the intended or assumed modifying effect.

[SOURCE: ISO 31000:2018, 3.8, modified — Added <risk> as application domain]

3.22

governing body

person or group of people who are accountable for the performance and conformance of the organization

Note 1 to entry: Not all organizations, particularly small organizations, will have a governing body separate from top management.

Note 2 to entry: A governing body can include, but is not limited to, board of directors, committees of the board, supervisory board, trustees or overseers.

[SOURCE: ISO/IEC 38500:2015, 2.9, modified — Added Notes to entry.]

3.23

information security

preservation of confidentiality, integrity and availability of information

Note 1 to entry: Other properties such as authenticity, accountability, non-repudiation and reliability can also be involved.

[SOURCE: ISO/IEC 27000:2018, 3.28]

3.24

AI system impact assessment

formal, documented process by which the impacts on individuals, groups of individuals, or both, and societies are identified, evaluated and addressed by an organization developing, providing or using products or services utilizing artificial intelligence

3.25**data quality**

characteristic of data that the data meet the organization's data requirements for a specific context

[SOURCE: ISO/IEC 5259-1:—¹⁾, 3.4]

3.26**statement of applicability**

documentation of all necessary *controls* (3.23) and justification for inclusion or exclusion of controls

Note 1 to entry: Organizations may not require all controls listed in [Annex A](#) or may even exceed the list in [Annex A](#) with additional controls established by the organization itself.

Note 2 to entry: All identified risks shall be documented by the organization according to the requirements of this document. All identified risks and the risk management measures (controls) established to address them shall be reflected in the statement of applicability.

4 Context of the organization**4.1 Understanding the organization and its context**

The organization shall determine external and internal issues that are relevant to its purpose and that affect its ability to achieve the intended result(s) of its AI management system.

The organization shall determine whether climate change is a relevant issue.

The organization shall consider the intended purpose of the AI systems that are developed, provided or used by the organization. The organization shall determine its roles with respect to these AI systems.

NOTE 1 To understand the organization and its context, it can be helpful for the organization to determine its role relative to the AI system. These roles can include, but are not limited to, one or more of the following:

- AI providers, including AI platform providers, AI product or service providers;
- AI producers, including AI developers, AI designers, AI operators, AI testers and evaluators, AI deployers, AI human factor professionals, domain experts, AI impact assessors, procurers, AI governance and oversight professionals;
- AI customers, including AI users;
- AI partners, including AI system integrators and data providers;
- AI subjects, including data subjects and other subjects;
- relevant authorities, including policymakers and regulators.

A detailed description of these roles is provided by ISO/IEC 22989. Furthermore, the types of roles and their relationship to the AI system life cycle are also described in the NIST AI risk management framework.^[29] The organization's roles can determine the applicability and extent of applicability of the requirements and controls in this document.

NOTE 2 External and internal issues to be addressed under this clause can vary according to the organization's roles and jurisdiction and their impact on its ability to achieve the intended outcome(s) of its AI management system. These can include, but are not limited to:

- a) external context related considerations such as:
 - 1) applicable legal requirements, including prohibited uses of AI;
 - 2) policies, guidelines and decisions from regulators that have an impact on the interpretation or enforcement of legal requirements in the development and use of AI systems;

1) Under preparation. Stage at the time of publication ISO/IEC DIS 5259-1:2023.

- 3) incentives or consequences associated with the intended purpose and the use of AI systems;
 - 4) culture, traditions, values, norms and ethics with respect to development and use of AI;
 - 5) competitive landscape and trends for new products and services using AI systems;
- b) internal context related considerations such as:
- 1) organizational context, governance, objectives (see [6.2](#)), policies and procedures;
 - 2) contractual obligations;
 - 3) intended purpose of the AI system to be developed or used.

NOTE 3 Role determination can be formed by obligations related to categories of data the organization processes (e.g. personally identifiable information (PII) processor or PII controller when processing PII). See ISO/IEC 29100 for PII and related roles. Roles can also be informed by legal requirements specific to AI systems.

4.2 Understanding the needs and expectations of interested parties

The organization shall determine:

- the interested parties that are relevant to the AI management system;
- the relevant requirements of these interested parties;
- which of these requirements will be addressed through the AI management system.

NOTE Relevant interested parties can have requirements related to climate change.

4.3 Determining the scope of the AI management system

The organization shall determine the boundaries and applicability of the AI management system to establish its scope.

When determining this scope, the organization shall consider:

- the external and internal issues referred to in [4.1](#);
- the requirements referred to in [4.2](#).

The scope shall be available as documented information.

The scope of the AI management system shall determine the organization's activities with respect to this document's requirements on the AI management system, leadership, planning, support, operation, performance, evaluation, improvement, controls and objectives.

4.4 AI management system

The organization shall establish, implement, maintain, continually improve and document an AI management system, including the processes needed and their interactions, in accordance with the requirements of this document.