

Artificial intelligence - Data quality for analytics and machine learning (ML) - Part 3: Data quality management requirements and guidelines (ISO/IEC 5259-3:2024)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English version

Artificial intelligence - Data quality for analytics and machine learning (ML) - Part 3: Data quality management requirements and guidelines (ISO/IEC 5259-3:2024)

Intelligence artificielle - Qualité des données pour les analyses de données et l'apprentissage automatique - Partie 3: Exigences et lignes directrices pour la gestion de la qualité des données (ISO/IEC 5259-3:2024)

Künstliche Intelligenz - Datenqualität für Analytik und maschinelles Lernen (ML) - Teil 3: Anforderungen und Leitlinien für das Datenqualitätsmanagement (ISO/IEC 5259-3:2024)

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Rue de la Science 23, B-1040 Brussels**

European foreword

The text of ISO/IEC 5259-3:2024 has been prepared by Technical Committee ISO/IEC JTC 1 "Information technology" of the International Organization for Standardization (ISO) and has been taken over as EN ISO/IEC 5259-3:2025 by Technical Committee CEN-CENELEC/ JTC 21 "Artificial Intelligence" the secretariat of which is held by DS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2025, and conflicting national standards shall be withdrawn at the latest by November 2025.

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Endorsement notice

The text of ISO/IEC 5259-3:2024 has been approved by CEN-CENELEC as EN ISO/IEC 5259-3:2025 without any modification.

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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*.

A list of all parts in the ISO/IEC 5259 series can be found on the ISO and IEC websites.

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Introduction

The quality of analytics and machine learning (ML) based products and services depends on the quality of data used to train ML models. Hence, data quality management is essential as it often helps to ensure the success of analytics and ML technology.

The adoption of a data quality management system facilitates managing the quality of products and services that employ analytics and ML technologies. This document defines vocabulary, requirements and guidelines for communication, alignment and agreement for managing data quality. The data quality management system provides transparency and auditability, either through self-assessment or third party assessment. It facilitates achieving relevant stakeholder satisfaction and managing quality, performance and self-declaration requirements. Specifically, this document defines requirements for a data quality management system with references to data quality measures that are relevant for the most commonly used analytics and ML technologies.

As data quality requirements vary with context and application domain, this document provides a generic set of requirements and recommendations relating to common data life cycle stages. A data life cycle is typically tightly integrated with the accompanying AI system life cycle and therefore has several dependencies. This document does not prescribe what AI system life cycle to use. Instead, it provides generic interfaces that allow users of this document the flexibility to interface with several life cycle models as long as the life cycle processes can be mapped.

ISO/IEC 5259-1 describes the data quality terminology and concepts used in this document.

ISO/IEC 5259-2¹⁾ describes the data quality model and data quality measures used in this document.

ISO/IEC 5259-4 describes the data quality process framework used in this document.

ISO/IEC 5259-5²⁾ provides a data quality governance framework as guidance for governing bodies.

ISO/IEC TR 5259-6³⁾ describes a visualization framework for data quality in analytics and ML.

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2) Under preparation. Stage at the time of publication: ISO/IEC DIS 5259-5:2023.

3) Under preparation. Stage at the time of publication: ISO/IEC CD TR 5259-6:2023.

Artificial intelligence — Data quality for analytics and machine learning (ML) —

Part 3: Data quality management requirements and guidelines

1 Scope

This document specifies requirements and provides guidance for establishing, implementing, maintaining and continually improving the quality of data used in the areas of analytics and machine learning.

This document does not define a detailed process, methods or metrics. Rather it defines the requirements and guidance for a quality management process along with a reference process and methods that can be tailored to meet the requirements in this document.

The requirements and recommendations set out in this document are generic and are intended to be applicable to all organizations, regardless of type, size or nature.

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 5259-1:2024, *Artificial intelligence — Data quality for analytics and machine learning (ML) — Part 1: Overview, terminology, and examples*

ISO/IEC 5259-2⁴⁾, *Artificial Intelligence — Data quality for analytics and machine learning (ML) — Part 2: Data quality measures*

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 5259-1 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 data quality claim

statement to what degree data satisfy a data quality requirement

4) Under preparation. Stage at the time of publication: ISO/IEC FDIS 5259-2:2024.