



International
Standard

ISO/IEC 5259-3

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

**Part 3:
Data quality management
requirements and guidelines**

*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*

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Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and abbreviated terms	2
5 Intended usage	2
6 Overall data quality management	2
6.1 Objective.....	2
6.2 General.....	2
6.3 Requirements and recommendations.....	3
6.3.1 General.....	3
6.3.2 Data quality culture.....	3
6.3.3 Management of data quality issues.....	3
6.3.4 Competence management.....	3
6.3.5 Resource management.....	4
6.3.6 Management system integration.....	4
6.3.7 Documentation.....	4
6.3.8 Data quality audit and assessment.....	4
6.3.9 Confirmation review and data quality measures.....	5
6.3.10 Project-specific data quality management.....	5
6.4 Work products.....	5
7 Life cycle-specific data quality management	6
7.1 Objective.....	6
7.2 General.....	6
7.2.1 Data quality management life cycle.....	6
7.2.2 Data quality management life cycle stages.....	7
7.2.3 Project-independent tailoring of the data quality management life cycle.....	8
7.2.4 Horizontal aspects of the data quality management life cycle.....	8
7.3 Requirements and recommendations.....	9
7.3.1 Data motivation and conceptualization.....	9
7.3.2 Data specification.....	9
7.3.3 Data planning.....	11
7.3.4 Data acquisition.....	11
7.3.5 Data preprocessing.....	13
7.3.6 Data augmentation.....	13
7.3.7 Data provisioning.....	14
7.3.8 Data decommissioning.....	16
7.4 Work products.....	17
7.4.1 Work products of data motivation and conceptualization stage.....	17
7.4.2 Work products of data specification stage.....	17
7.4.3 Work products of data planning stage.....	17
7.4.4 Work products of data acquisition stage.....	17
7.4.5 Work products of data preprocessing stage.....	17
7.4.6 Work products of data augmentation stage.....	18
7.4.7 Work products of data provisioning stage.....	18
7.4.8 Work products of data decommissioning stage.....	18
8 Horizontal processes	18
8.1 Objective.....	18
8.2 General.....	18
8.3 Requirements and recommendations.....	18
8.3.1 Verification and validation.....	18

ISO/IEC 5259-3:2024(en)

8.3.2	Configuration management	19
8.3.3	Change management	19
8.3.4	Risk management	20
8.4	Work products	21
8.4.1	Work products of verification and validation	21
8.4.2	Work products of configuration management	21
8.4.3	Work products of change management	21
8.4.4	Work products for risk management	21
9	Management of data quality in supply chains	22
9.1	Objective	22
9.2	Requirements and recommendations	22
9.3	Work products	22
10	Management of data processing tools	23
10.1	Objective	23
10.2	Requirements and recommendations	23
10.3	Work products	23
11	Management of data quality dependencies	23
11.1	Objective	23
11.2	Requirements and recommendations	23
11.3	Work products	23
12	Project-specific data quality management	24
12.1	Objective	24
12.2	Requirements and recommendations	24
12.2.1	Context and intended use	24
12.2.2	Objective	24
12.2.3	Requirements and recommendations	24
12.3	Specification and management of data quality requirements	24
12.3.1	Objective	24
12.3.2	Requirements and recommendations	25
12.4	Roles and responsibilities in data quality management	25
12.4.1	Objective	25
12.4.2	Requirements and recommendations	25
12.4.3	Work products	25
12.5	Tailoring of the data quality activities	25
12.6	Planning and coordination of the data quality activities	26
12.6.1	General	26
12.6.2	Data quality plan	26
12.6.3	Planning of processes	26
12.7	Progression of the data quality life cycle	26
12.8	Data quality justification	26
12.9	Decommissioning	27
12.10	Work products	27
Bibliography		28

Foreword

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

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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

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.