

ISO/IEC 5259-3:2024-07 (E)

Artificial intelligence - Data quality for analytics and machine learning (ML) - Part 3: Data quality management requirements and guidelines

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
	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