

ISO 19178-1:2025-05 (E)

Geographic information - Training data markup language for artificial intelligence - Part 1: Conceptual model

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms, definitions and abbreviated terms	1
3.1	Terms and definitions	1
3.2	Abbreviated terms	3
4	Conventions	4
4.1	General	4
4.2	Identifiers	4
4.3	UML notation	4
5	Conformance	6
6	Overview	6
6.1	General	6
6.2	AI tasks for EO	6
6.3	Modularization	7
6.4	General modelling principles	8
6.4.1	Element modelling	8
6.4.2	Class hierarchy and inheritance of properties and relations	8
6.4.3	Definition of the semantics for all classes, properties and relations	9
6.4.4	Data integrity, authenticity and non-repudiation	9
6.5	Extending TrainingDML-AI	9
7	TrainingDML-AI UML model	9
7.1	General	9
7.2	ISO dependencies	9
7.3	Overview of the UML model	10
7.4	AI_TrainingDataset	12
7.4.1	General	12
7.4.2	Provisions	13
7.4.3	Class definitions	14
7.5	AI_TrainingData	15
7.5.1	General	15
7.5.2	Provisions	16
7.5.3	Class definitions	16
7.6	AI_Task	17
7.6.1	General	17
7.6.2	Provisions	18
7.6.3	Class definitions	18
7.7	AI_Label	18
7.7.1	General	18
7.7.2	Provisions	19
7.7.3	Class definitions	20
7.8	AI_Labeling	20

7.8.1	General	20
7.8.2	Provisions	21
7.8.3	Class definitions	22
7.9	AI_TDChangeset	22
7.9.1	General	22
7.9.2	Provisions	23
7.9.3	Class definitions	24
7.10	AI_DataQuality	24
7.10.1	General	24
7.10.2	Provisions	25
7.10.3	Class definitions	26
8	TrainingDML-AI Data Dictionary	26
8.1	General	26
8.2	ISO Classes	26
8.2.1	Feature (from ISO 19101-1)	26
8.2.2	MD_Band (from ISO 19115-1)	26
8.2.3	MD_Scope (from ISO 19115-1)	26
8.2.4	MD_ReferenceSystem (from ISO 19115-1)	26
8.2.5	LI_Lineage (from ISO 19115-1)	27
8.2.6	EX_Extent (from ISO 19115-1)	27
8.2.7	CI_Citation (from ISO 19115-1)	27
8.2.8	MD_Resolution (from ISO 19115-1)	27
8.2.9	DataQuality (from ISO 19157-1)	27
8.2.10	QualityElement (from ISO 19157-1)	28
8.3	AI_TrainingDataset	28
8.3.1	Metadata	28
8.3.2	Classes	28
8.4	AI_TrainingData	30
8.4.1	Metadata	30
8.4.2	Classes	30
8.5	AI_Task	31
8.5.1	Metadata	31
8.5.2	Classes	32
8.6	AI_Label	32
8.6.1	Metadata	32
8.6.2	Classes	32
8.7	AI_Labeling	34
8.7.1	Metadata	34
8.7.2	Classes	34
8.8	AI_TDChangeset	35
8.8.1	Metadata	35
8.8.2	Classes	35
8.9	AI_DataQuality	36
8.9.1	Metadata	36
8.9.2	Classes	36
	Annex A (normative) Abstract test suite	37
	Annex B (informative) Examples	44
	Bibliography	47