
**Information technology — Metadata
registries (MDR) —**

**Part 31:
Metamodel for data specification
registration**

Technologies de l'information — Registres de métadonnées (RM) —

*Partie 31: Métamodèle pour l'enregistrement des spécifications de
données*

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Contents

Page

Foreword	vii
Introduction	viii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Abbreviated terms	6
5 Conformance	6
5.1 Overview of conformance	6
5.2 Degree of conformance	6
5.2.1 General	6
5.2.2 Strictly conforming implementations	7
5.2.3 Conforming implementations	7
5.3 Conformance by feature	7
5.4 Registry conformance	8
5.4.1 Standard profiles for edition 4 registries	8
5.4.2 Conformance labels	8
5.5 Implementation conformance statement (ICS)	8
5.6 Obligation	8
6 Relationship to ISO/IEC 11179-3	9
6.1 Metamodel for a metadata registry	9
6.2 Specification of the metamodel	9
6.3 Use of UML Class diagrams and textual description	9
6.4 Package dependencies	10
6.5 Subclassing the Constraint_Set class	10
7 Data_Specification package	11
7.1 Overview of the Data_Specification package	11
7.2 High-level Data Specification metamodel region	12
7.2.1 Overview of the high-level metamodel region	12
7.2.2 Classes in the High-level Data Specification metamodel region	13
7.2.3 Associations of the High-Level Data Specification metamodel region	16
7.2.4 Constraints of the High Level metamodel region	17
7.3 Data Element Concept metamodel region	18
7.3.1 Overview of the Data Element Concept metamodel region	18
7.3.2 Classes in the Data Element Concept metamodel region	19
7.3.3 Associations in the Data Element Concept metamodel region	22
7.4 Conceptual Domain and Value Domain metamodel region	22
7.4.1 Overview of the Conceptual Domain and Value Domain metamodel region	22
7.4.2 Classes in the Conceptual Domain and Value Domain metamodel region	24
7.4.3 Association Classes in the Conceptual Domain and Value Domain metamodel region	41
7.4.4 Associations in the Conceptual Domain and Value Domain metamodel region	44
7.4.5 Additional Constraints of the Conceptual Domain and Value Domain metamodel region	45
7.5 Measurement metamodel region	46
7.5.1 Overview of the Measurement metamodel region	46
7.5.2 Classes in the Measurement metamodel region	47
7.5.3 Associations in the Measurement metamodel region	50
7.6 Data Element metamodel region	51
7.6.1 Overview of the Data Element metamodel region	51
7.6.2 Classes in the Data Element metamodel region	52
7.6.3 Associations in the Data Element metamodel region	56

7.7	Value Domain Subset metamodel region.....	57
7.7.1	Overview of the Value Domain Subset metamodel region.....	57
7.7.2	Classes in the Value Domain Subset metamodel region.....	57
7.7.3	Association classes in the Value Domain Subset metamodel region.....	61
7.7.4	Associations in the Value Domain Subset metamodel region.....	62
7.7.5	Constraints in the Value Domain Subset metamodel region.....	63
7.8	Conceptual Domain Subset metamodel region.....	63
7.8.1	Overview of the Conceptual Domain Subset metamodel region.....	63
7.8.2	Classes in the Conceptual Domain Subset metamodel region.....	64
7.8.3	Association classes in the Conceptual Domain Subset metamodel region.....	66
7.8.4	Associations in the Conceptual Domain Subset metamodel region.....	67
7.8.5	Constraints in the Conceptual Domain Subset metamodel region.....	68
7.9	Composite Data Elements and Datatypes metamodel region.....	68
7.9.1	Overview of the Composite Data Elements and Datatypes metamodel region.....	68
7.9.2	Classes in the Composite Data Elements and Datatypes metamodel region.....	69
7.9.3	Association Class in the Composite Data Elements and Datatypes metamodel region.....	71
7.9.4	Associations in the Composite Data Elements and Datatypes metamodel region.....	72
Annex A (informative) Consolidated class hierarchy.....		73
Annex B (informative) Example of Address as Composite Data Element and Datatype.....		74
Annex C (informative) Partial consolidated data specification metamodel.....		75
Bibliography.....		76

List of Figures

Figure 1 — Package dependencies.....	10
Figure 2 — Subclasses of Constraint_Set.....	11
Figure 3 — High-level Data Specification metamodel.....	12
Figure 4 — Data Element Concept metamodel region.....	18
Figure 5 — Conceptual Domain and Value Domain metamodel region	23
Figure 6 — Measurement metamodel region.....	46
Figure 7 — Data Element metamodel region.....	51
Figure 8 — Value Domain Subset metamodel region.....	57
Figure 9 — Conceptual Domain Subset metamodel region.....	63
Figure 10 — Composite Data Elements and Datatypes metamodel region.....	69
Figure A.1 — Consolidated Class Hierarchy.....	73
Figure B.1 — Object diagram of Address as Composite Datatype and Data Element.....	74
Figure C.1 — Partial Consolidated Data Specification metamodel	75

List of Tables

Table 1 — Attributes of Data_Element_Constraint_Set class	21
Table 2 — Attributes of Conceptual_Domain class	24
Table 3 — Attributes of Enumerated_Conceptual_Domain class	26
Table 4 — Attributes of Enumerated_Conceptual_Domain_Definition class	29
Table 5 — Attributes of Value_Domain class	30
Table 6 — Attributes of Permissible_Value class	33
Table 7 — Attributes of Reference_Enumerated_Value_Domain class	34
Table 8 — Attributes of Datatype class	35
Table 9 — Example 1 of Datatype class	35
Table 10 — Example 2 of Datatype class	35
Table 11 — Attributes of Datatype_Scheme class	36
Table 12 — Attributes of Reference_Enumerated_CD_Constraint_Set class	37
Table 13 — Attributes of Local_Enumerated_CD_Constraint_Set class	38
Table 14 — Attributes of Value_Domain_Constraint_Set class	38
Table 15 — Attributes of Described_Value_Domain_Constraint_Set class	39
Table 16 — Attributes of Reference_Enumerated_VD_Constraint_Set class	40
Table 17 — Attributes of Local_Enumerated_VD_Constraint_Set class	40
Table 18 — Attributes of Permissible_Value_Constraint_Set class	41
Table 19 — Attributes of Value_Meaning_Set association class	42
Table 20 — Attributes of Permissible_Value_Meaning association class	43
Table 21 — Attributes of Permissible_Value_Set association class	44
Table 22 — Attributes of Dimensionality class	50
Table 23 — Attributes of Data_Element class	52
Table 24 — Attributes of Data_Element_Example class	53
Table 25 — Attributes of Data_Element_Derivation_Rule class	54
Table 26 — Attributes of Data_Element_Constraint_Set class	55
Table 27 — Attributes of Local_Enumerated_Value_Domain_Subset class	60
Table 28 — Attributes of Local_Enumerated_VD_Subset_Constraint_Set class	61
Table 29 — Attributes of Subset_Values association class	62
Table 30 — Attributes of Local_Enumerated_Conceptual_Domain_Subset class	65
Table 31 — Attributes of Local_Enumerated_CD_Subset_Constraint_Set class	66
Table 32 — Attributes of Subset_Value_Meanings association class	67
Table 33 — Attributes of Data_Element_Collection class	70
Table 34 — Attributes of Data_Element_Sequence association class	71

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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This document was prepared by Joint Technical Committee ISO/IEC/JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

A list of all parts in the ISO/IEC 11179 series can be found on the ISO and IEC websites.

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

In ISO/IEC 11179-3, the structure of a Metadata Registry is specified in the form of a conceptual data model. ISO/IEC 11179-3 specifies a metamodel for “registry common facilities”, which is intended to be extended by other parts of ISO/IEC 11179 for specific purposes.

This document provides a specification of the extensions to the registry metamodel specified in ISO/IEC 11179-3 to enable the registration of metadata about data elements and associated concepts, such as “data element concepts”, “conceptual domains” and “value domains”. Generically, these are all referred to as “metadata items”. Such metadata are necessary to clearly describe, record, analyse, classify and administer data.

This document is part of the 4th edition modularization of the ISO/IEC 11179 series. It extracts the Data Description package from ISO/IEC 11179-3:2013 to make it more accessible and renames it “Metamodel for data specification registration”. At the same time, some enhancements have been made as follows:

- support for externally defined “reference enumerated conceptual domains” ([7.4.2.6](#)) and “reference enumerated value domains” ([7.4.2.13](#));
- support for sub-setting of value domains ([7.7](#)) and conceptual domains ([7.8](#)) within a specified context;
- support for composite data elements and data types ([7.9](#));
- finer-grained conformance options (see [5.3](#));
- relaxation of some constraints in the standard, while giving registration authorities the ability to enforce them if they wish (see [6.5](#)).

From [Clause 5](#) onwards, this document uses:

- **bold** font to highlight terms which represent metadata objects specified by the metamodel;
- normal font for terms which represent concepts defined in [Clause 3](#).

EXAMPLE **Conceptual_Domain** ([7.2.2.2](#)) is a class each instance of which models a conceptual domain.

Information technology — Metadata registries (MDR) —

Part 31:

Metamodel for data specification registration

1 Scope

This document provides a specification for an extension to a Metadata Registry (MDR), as specified in ISO/IEC 11179-3, in which metadata that describes data elements and associated concepts, such as “data element concepts”, “conceptual domains” and “value domains” can be registered.

The specification in this document, together with the relevant clauses of the specification in ISO/IEC 11179-3, provides the ability to record metadata about:

- a) data elements, units of measure and derivation rules;
- b) data element concepts and associated object classes and properties;
- c) conceptual domains, conceptual domain subsets and value meanings;
- d) value domains, value domain subsets, datatypes and permissible values.

This document is applicable to the formulation of data representations, concepts, meanings and relationships to be shared among people and machines, independent of the organization that produces the data. It is not applicable to the physical representation of data as bits and bytes at the machine level.

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 11179-3:2023, *Information technology — Metadata registries (MDR) — Part 3: Metamodel for registry common facilities*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 11179-3 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

object class

set of ideas, abstractions or things in the real world that are identified with explicit boundaries and meaning and whose properties and behaviour follow the same rules

3.2

property

quality common to all members of an *object class* (3.1)