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Information technology — Metadata registries (MDR) —

Part 30: Basic attributes of metadata

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

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 website.

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.

Introduction

Data processing and electronic data interchange rely heavily on accurate, reliable, controllable and verifiable data recorded in databases. A prerequisite for correct and proper use and interpretation of data is that both users and owners of data have a common understanding of the meaning and representation of the data. To facilitate this common understanding, a number of characteristics, or attributes, of the data have to be defined. These characteristics of data are known as "metadata", that is, "data that describes data". ISO/IEC 11179-3 provides a conceptual metamodel for the attributes of data elements and associated metadata to be specified and registered as metadata items in a metadata registry (MDR).

This document applies to the definition, specification and contents of collections of metadata, including interchanging or referencing among such collections.

Information technology — Metadata registries (MDR) —

Part 30:
Basic attributes of metadata

1 Scope

This document specifies basic attributes which are required to describe data elements and associated metadata, and which might be used in situations where a complete ISO/IEC 11179-3 metadata registry is not appropriate (e.g. in the specification of other International Standards).

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, *Information technology — Metadata registries (MDR) — Part 3: Registry metamodel and basic attributes*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Conformance

4.1 Overview of conformance

Conformance may be claimed to some or all of the basic attributes. Conformance claims shall specify a degree of conformance, as described in 4.2.

Conformance statements with respect to this document shall also be explicit as to which portions of this document conformity is being claimed. This may be done by reference to the relevant clauses.

4.2 Degree of conformance

4.2.1 General

The distinction between “strictly conforming” and “conforming” implementations is necessary to address the simultaneous needs for interoperability and extensions. This document describes specifications that promote interoperability. Extensions are motivated by needs of users, vendors, institutions, and industries, and:

a) are not directly specified by this document;

b) are specified and agreed to outside this document; and

c) may serve as trial usage for future editions of this document.

A strictly conforming implementation can be limited in usefulness but is maximally interoperable with respect to this document. A conforming implementation can be more useful but can be less interoperable with respect to this document.

4.2.2 Strictly conforming implementations

A strictly conforming implementation:

a) shall support all mandatory, optional and conditional attributes;

b) shall not use, test, access or probe for any extension features nor extensions to the attributes;

c) shall not recognize, nor act on, nor allow the production of attributes that are dependent on any unspecified, undefined or implementation-defined behaviour.

NOTE The use of extensions to the basic attributes can cause undefined behaviour.

4.2.3 Conforming implementations

A conforming implementation:

a) shall support all mandatory, optional and conditional attributes;

b) as permitted by the implementation, may use, test, access or probe for extension features or extensions to the attributes;

c) may recognize, act on or allow the production of attributes that are dependent on implementation-defined behaviour.

NOTE 1 All strictly conforming implementations are also conforming implementations.

NOTE 2 The use of extensions to the basic attributes can cause undefined behaviour.

4.3 Implementation conformance statement (ICS)

An implementation claiming conformance to this document shall include an implementation conformance statement stating:

a) whether it conforms or strictly conforms;

b) which clauses are supported;

c) what extensions, if any, are supported or used.

5 Basic attributes

5.1 Use of basic attributes

ISO/IEC 11179-3 describes a model for specifying metadata in a registry. However, sometimes the requirement for metadata specification exists outside the context of a registry, for example as part of an International Standard.

This document provides continuity from the first edition of ISO/IEC 11179-3[1)](Reference [1]), which focused on basic attributes of data elements. However, the scope of this document extends beyond just data elements to include data element concepts, conceptual domains, value domains, permissible values and value meanings.

1) ISO/IEC 11179-3:1994 – this first edition has been withdrawn.

A specification of metadata consists of a set of attributes, and relationships among those attributes. This Clause specifies a set of *basic* attributes to be used in contexts other than a metadata registry. *Basic* means that they are frequently needed to specify a metadata item. The attributes specified in this Clause are also considered *basic* in the sense that additional attributes might be required when the metadata items are used in a particular context.

Basic does not imply that all standardized attributes presented in this Clause are required in all cases. Distinction is made between those basic attributes that are:

— mandatory: always required;

— conditional: required to be present under certain specified conditions;

— optional: permitted but not required.

NOTE The obligations specified for some basic attributes (especially identifiers) in contexts other than a registry are different from those specified for metadata items in a registry, as defined in ISO/IEC 11179-3.

5.2 Common attributes

5.2.1 General

The attributes listed in this subclause are common to all types of metadata. These attributes are further categorized as: Identifying, Naming, Definitional, Administrative, and Relational.

5.2.2 Identifying

Attribute	Obligation
item identifier	Zero or more per metadata item. Required if *name* (see 5.2.3) is not unique within a given *context.*
item identifier – identifier	One per *item identifier*. (The mandatory portion of an *item identifier*.)
item identifier – registration authority identifier	Zero or one per *item identifier*. (The optional portion of an *item identifier* – see NOTE 2.)
version	Zero or one per metadata item.

NOTE 1 While *item identifier* is mandatory within a registry, it is only conditional in non-registry usages. The requirement for an *item identifier* can be eliminated by qualifying *name* and/or *context name* to ensure that the combination is unique.

NOTE 2 While *item registration authority identifier* is mandatory within a registry, it is optional in non-registry settings.

5.2.3 Naming

Attribute	Obligation
name	One or more per metadata item (see NOTE).
designation language	Zero or one per name
context name	Zero or more per metadata item. Required if more than one *name* attribute exists.
context identifier	Zero or one per metadata item. Required if *context name* is not unique within its usage context (e.g. a standard).
context description	*One per* context name.
designation acceptability	Zero or one per name (see NOTE).

NOTE If more than one *name* is specified within a given *context*, it is usual to nominate one name as "preferred", and the others (the synonyms) as "accepted".

5.2.4 Definitional

Attribute	Obligation
definition	One for each *context* in which the metadata item is used (see NOTE).
definition language	Zero or one per *definition.*
definition source reference	Zero or one per *definition.*

NOTE Where multiple *definitions* are assigned to the same metadata item, the semantics of the *definition* should be the same across all *contexts*. (If the semantics are different, separate metadata items should be specified.) However, the terminology used to express the semantics might need to be different in different *contexts*, and thus separate *definitions* are permitted for each *context*.

5.2.5 Administrative

Administrative attributes are primarily associated with recording metadata items in a registry. They are therefore optional in non-registry settings.

Attribute	Obligation
comments	Zero or one per metadata item.
registration status	Zero or one per metadata item.
responsible organization	Zero or one per metadata item.
submitting organization	Zero or one per metadata item.

5.2.6 Relational

Attribute	Obligation
classification scheme name	One for each *classification scheme* in which a metadata item is classified.
classification scheme identifier	*Zero or one per* classification scheme name*. Required if* classification scheme name *is not unique within a* context*.*
classification scheme item value	One for each *classification scheme item* by which a metadata item is classified.
related metadata reference	Zero or more per metadata item (see NOTE).
type of relationship	*One per* related metadata reference*.*

NOTE A Registration_Authority could choose to use a Reference_Document, an administrative_note or an explanatory_comment to record a related metadata reference.

5.3 Attributes specific to Data_Element_Concepts

The attributes listed in this subclause are specific to Data_Element_Concepts.

Attribute	Obligation
object class name	*Zero or one per* data element concept.
object class identifier	*Zero or one per* data element concept.
property name	*Zero or one per* data element concept.
property identifier	*Zero or one per* data element concept.

5.4 Attributes specific to Data_Elements

The attributes listed in this subclause are specific to Data_Elements.

Attribute	Obligation
value domain name	Zero or one per *data element.*
value domain identifier	Zero or one per *data element.*
datatype name	Zero or one per *data element.* Required if neither *value domain name* nor *value domain identifier* is not specified.
datatype scheme reference	Zero or one per *datatype name.*
layout of representation	Zero or one per *data element.*
maximum size	Zero or one per *data element.*
minimum size	Zero or one per *data element.*

NOTE This document removes 'representation class' as a separate attribute, and views it as just an example of classification, which can be specified using the relational attributes. E.g. *classification scheme name* = 'representation class', and the *classification scheme item value* has the value that representation class would previously have had.

5.5 Attributes specific to Conceptual_Domains

The attributes listed in this subclause are specific to Conceptual_Domains.

Attribute	Obligation
dimensionality	*Zero or one per* conceptual domain.

5.6 Attributes specific to Value_Domains

The attributes listed in this subclause are specific to Value_Domains.

Attribute	Obligation
datatype name	*One per* value domain.
datatype scheme reference	Zero or one per *datatype name.*
unit of measure name	Zero or one per *value domain.*

5.7 Attributes specific to Permissible_Values

The attributes listed in this subclause are specific to Permissible_Values.

Attribute	Obligation
permitted value	*One per* permissible value.
permissible value begin date	*Zero or one per* permissible value.
permissible value end date	*Zero or one per* permissible value.