



BSI Standards Publication

Information technology — Metadata registries (MDR)

Part 6: Registration

National foreword

This British Standard is the UK implementation of [ISO/IEC 11179-6:2023](#). It supersedes [BS ISO/IEC 11179-6:2015](#), which is withdrawn.

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Part 6: Registration

*Technologies de l'information — Registres de métadonnées (RM) —
Partie 6: Enregistrement des données*





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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.

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 or www.iec.ch/members_experts/refdocs).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see <https://patents.iec.ch>).

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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. In the IEC, see www.iec.ch/understanding-standards.

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

This fourth edition cancels and replaces the third edition ([ISO/IEC 11179-6:2015](http://www.iso.org/iso/11179-6:2015)), which has been technically revised.

The main changes are as follows:

- the restructuring of the different parts of [ISO/IEC 11179](http://www.iso.org/iso/11179) have been taken into account;
- references to other standards have been updated to the latest editions.

A list of all parts in the [ISO/IEC 11179](http://www.iso.org/iso/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

This document describes the procedure by which metadata items, or other registry items, required in various application areas can be assigned an internationally unique identifier and registered in a metadata registry maintained by one or more Registration Authorities. This document supports multiple schemes for ensuring the uniqueness of the identification.

The metamodel of the common facilities for a metadata registry is defined in [ISO/IEC 11179-3](#). Other parts in the [ISO/IEC 11179](#) series and the [ISO/IEC 19763](#) series provide additional metamodels to extend the common facilities to permit various types of metadata to be registered. The metamodel for the common facilities defined in [ISO/IEC 11179-3](#) allows a registry item to simply be identified or to be both identified and registered. A registered item may either be an administered item, meaning it has its own registration state, or it may be an attached item, which means it is attached to an administered item and shares the latter's registration state. The registered items are included in registries maintained by one or more Registration Authorities, to which the registered items logically and functionally belong. An organization wishing to become a registration authority may do so in accordance with the procedure prescribed in [Annex A](#).

The registration process described in this document may be applied to any type of registry item, such as those specified by:

- [ISO/IEC 11179-31](#)^[8]: data elements, data element concepts, conceptual domains, value meanings, value domains and classification schemes;
- [ISO/IEC 11179-32](#)^[9]: concept systems, relations and links;
- [ISO/IEC 11179-33](#)^[10]: data sets and associated attributes;
- [ISO/IEC 11179-34](#)^[16]: computable data;
- [ISO/IEC 11179-35](#)^[11]: models;
- [ISO/IEC 19763](#)^[14]: ontologies, process models, service models, role and goal models, information models, document models, mappings between models, and form designs;

and/or custom types not specified by these standards. Each registered item is represented within a metadata registry by a registration record that documents the common administration and identification, naming and definition details together with their metadata item-specific details.

Within this document, the use of “Registry” denotes an implementation of a registry that is based upon the common facilities defined in [ISO/IEC 11179-3](#) and that is managed by one or more Registration Authorities.

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Information technology — Metadata registries (MDR) —

Part 6: Registration

1 Scope

This document defines the type of information to be specified, the conditions to be met, and the procedure(s) to be followed for each item to be registered in a metadata registry. The requirements and procedures contained herein apply to all types of items specified in [ISO/IEC 11179-3](#), [ISO/IEC 11179-31](#)^[8], [ISO/IEC 11179-32](#)^[9], [ISO/IEC 11179-33](#)^[10], [ISO/IEC 11179-35](#)^[11] and those specified in [ISO/IEC 19763](#)^[14]. Some Registration Authorities can use this document to register and manage locally defined metadata item types that are not defined in [ISO/IEC 11179](#) or [ISO/IEC 19763](#).

This document addresses the common metadata that is used to document the common facilities of a registry: administration, identification, naming and definition, details that can apply to any and all types of registry items.

This document does not address the metadata that is specific to particular types of registry items, such as data elements and value domains. This document does not specify the registry's system design, file organization techniques, storage media, programming languages, etc. to be used in its implementation.

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: 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 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 <https://www.electropedia.org/>

3.1 data

re-interpretable representation of information in a formalized manner suitable for communication, interpretation, or processing

Note 1 to entry: Data can be processed by human or automatic means.

[SOURCE: ISO/IEC 2382:2015, 2121272, modified — Notes to entry 2 and 3 deleted.]

3.2 data element

<organization of data> unit of *data* ([3.1](#)) that is considered in context to be indivisible

EXAMPLE The *data element* “age of a person” with values consisting of all combinations of 3 decimal digits.

Note 1 to entry: The definition states that a *data element* is “indivisible” in some context. This means that it is possible that a *data element* considered indivisible in one context (e.g. telephone number) can be divisible in another context, (e.g. country code, area code, local number).

[SOURCE: ISO/IEC 2382:2015, 2121599, modified — Note 1 to entry label removed from the example. Note 2 to entry replaced and renumbered as Note 1, Note 3 to entry deleted.]

3.3 metadata

data ([3.1](#)) that defines and describes other *data*

[SOURCE: ISO/IEC 11179-1:2023, 3.2.26]

3.4 registry

information system for registration

[SOURCE: ISO/IEC 11179-1:2023, 3.2.34]

3.5 identification scheme

system allocating identifiers to registered objects

[SOURCE: ISO/IEC 6523-1:1998, 3.6]

3.6 version

unique form differing in certain aspects from an earlier form

[SOURCE: ISO/IEC 11179-1:2023, 3.3.25]

3.7 registration acting body RAB

type of *organization* ([3.8](#)) participating in the registration process of administered items

Note 1 to entry: Currently, there are three RABs: registration authority (RA), *stewardship organization* (StO) and *submitting organization* (SuO).

3.8 organization

unique framework of authority within which individuals act, or are designated to act, towards some purpose

Note 1 to entry: The kinds of organizations covered by [ISO/IEC 6523-1](#) include the following examples:

- a) an organization incorporated under law;
- b) an unincorporated organization or activity providing goods, services or both including the following:
 - 1) partnerships;
 - 2) social or other non-profit organizations or similar bodies in which ownership or control is vested in a group of individuals;
 - 3) sole proprietorships;
 - 4) governmental bodies;

- c) groupings of the above types of organizations where there is a need to identify these in information interchange.

[SOURCE: ISO/IEC 6523-1:1998, 3.1, modified — 'goods and/or services' changed to 'goods, services or both', 'person or persons' changed to 'individuals', leading article deleted, trailing fullstop deleted, NOTE converted to Note 1 to entry.]

3.9

organization part

any department, service, or other entity within an *organization* (3.8) which needs to be identified for information exchange

[SOURCE: ISO/IEC 6523-1:1998, 3.2]

3.10

organization identification scheme

identification scheme dedicated to the unique identification of *organizations* (3.8)

3.11

International Code Designator

ICD

identifier of an *organization identification scheme* (3.10)

[SOURCE: ISO/IEC 6523-1:1998, 3.8, modified — uses 'identifier of' instead of 'the data element used to uniquely identify'.]

3.12

International Code Designator value

ICD value

identifier allocated to a particular *organization identification scheme* (3.10)

[SOURCE: ISO/IEC 6523-1:1998, 3.9]

3.13

organization identifier

identifier assigned to an *organization* (3.8) within an *organization identification scheme* (3.10) and unique within that scheme

[SOURCE: ISO/IEC 6523-1:1998, 3.10]

3.14

organization part identifier

OPI

identifier allocated to a particular *organization part* (3.9)

[SOURCE: ISO/IEC 6523-1:1998, 3.11]

3.15

international registration data identifier

IRDI

internationally unique identifier for an identified item as defined in the framework of [ISO/IEC 11179](#)

3.16

OPI Source Indicator

OPIS

data element (3.2) used to specify the source for the *organization part identifier* (3.14)

[SOURCE: ISO/IEC 6523-1:1998, 3.12]

4 Concept of operation

4.1 Metamodel of a metadata registry

The ISO/IEC 11179 series provides a conceptual metamodel of a metadata registry (MDR) for describing data. [ISO/IEC 11179-1](#) provides the means for understanding and associating the individual parts and is the foundation for a conceptual understanding of metadata and metadata registries.

The core metamodel in [ISO/IEC 11179-3](#) specifies common facilities for a generic registry. Other parts of [ISO/IEC 11179](#) specify specialized metadata items, including:

- [ISO/IEC 11179-31](#)^[8]: data elements, data element concepts, value domains, conceptual domains, and others;
- [ISO/IEC 11179-32](#)^[9]: concept systems, relations and links;
- [ISO/IEC 11179-33](#)^[10]: data sets;
- [ISO/IEC 11179-35](#)^[11]: models.

This document addresses aspects common to the registration of any registry item. This document also applies to the registration of items specified in [ISO/IEC 19763](#), such as process models, service models, documents and forms.

It is envisioned that an organization may extend its registry with additional types of items that are to be registered. It is also envisioned that the standard may be extended at a later date to specify additional types of items. Others may want to use this document to register and manage locally defined metadata item types that are not defined in any document. The common facilities specified here apply equally to all such extensions.

4.2 Common facilities

4.2.1 Identification

Any registry item that is to be retrieved directly (as opposed to indirectly through a related item), shall be an identified item, so the item can be referenced. Each identified item shall have at least one identifier, and that identifier shall be unique within a specified namespace. Early editions of [ISO/IEC 11179](#) mandated the identification scheme specified by [ISO/IEC 6523](#)^[3]. From the third edition (2013) onwards, [ISO/IEC 11179](#) permits any identification scheme that can guarantee uniqueness (e.g. IETF RFC 4122^[1]).

[Annex A](#) describes the structure of the identifier if the identification scheme specified by [ISO/IEC 6523](#) is used.

4.2.2 Designation and definition

Any registry item can be designated (named), defined or both in the registry.

[ISO/IEC 11179-4](#)^[6] provides guidelines for the formulation of data definitions.

[ISO/IEC 11179-5](#)^[7] provides instructions for naming of the following items: concept, data element concept, conceptual domain, data element, and value domain, as defined in [ISO/IEC 11179-3](#) and [ISO/IEC 11179-31](#)^[8]. [ISO/IEC 11179-5](#) describes naming in an MDR, including principles and rules by which naming conventions can be developed, and provides examples of naming conventions.

4.2.3 Classification

Any registry item can be classified in a classification scheme.

[ISO/IEC 11179-3:2023](#), Clause 10 describes the registration of classification schemes and their use in classifying items in a registry. [ISO/IEC TR 11179-2^{\[5\]}](#) provides further guidance on the use of classification schemes.

4.2.4 Registration

Any identified item can be made a registered item to allow it to be managed in the registry. Each registered item shall be instantiated as one of the specializations: administered item or attached item in accordance with [ISO/IEC 11179-3](#).

Registration is the primary topic of this document.

4.3 Status categories

4.3.1 General

There are two types of status categories. The registration status is a designation of the level of registration or quality of metadata or progression of an administered item. The administrative status is a designation of the status in the administrative process of a registration authority for handling registration requests. Both status categories apply to individual administered items that have been registered in the registry. Attached items do not have their own statuses. They inherit the status of the administered item to which they are attached.

An administrative status specifies the process that an administered item is undergoing within a registration status. It identifies the process that is taking place within a registration status. It is very probable that the permissible administrative status values will be dependent upon the current registration status that an administered item possesses. A registration authority will establish the focus of the use of administrative status. A registration authority determines the allowed values of this attribute. It is the responsibility of the registration authority to refine, publish, and implement this administrative feature.

Because the registration status of an administered item determines when constraints are to be enforced, each item shall be administered by exactly one registration authority. If more than one registration authority needs to register the same real-world item, then separate administered items shall be registered. If necessary, they can be related through the item mapping facility of [ISO/IEC 11179-3:2023](#), Clause 11.

4.3.2 Summary of registration status categories

Registration status specifies the state of an administered item that is in the registry, in the view of the registration authority. Registration status categories shall apply to individual administered items that have been registered in the registry by the registration authority. Registration status categories are of two sub-types: lifecycle and documentation. The lifecycle registration status categories address improvement and progression towards levels of perfection of the quality of the metadata of the item and of the preferences of usage of the administered item. The documentation registration status categories are used to denote positions at which there will be no more progression in quality of metadata or use of the administered item. The relationships among these status categories, along with the requirements for an administered item to achieve a particular registration status level, are presented in [Table 1](#).

Table 1 — Registration status levels and criteria

Administered item registration status category	Status criteria
Lifecycle statuses	
Incomplete	The submitter wishes to make the community that uses this registry aware of the existence of an administered item in their local domain.
Candidate	The administered item has been proposed for progression through the registration levels.
Recorded	The registration authority has confirmed that — all mandatory metadata attributes have been completed.
Qualified	The registration authority has confirmed that — the mandatory metadata attributes are complete and — the mandatory metadata attributes conform to applicable quality requirements.
Standard	The registration authority confirms that the administered item is — of sufficient quality and — of broad interest for use in the community that uses this registry.
Preferred Standard	The registration authority confirms that the administered item is — preferred for use within the community that uses this registry.
Superseded	The registration authority determined that the administered item is — no longer recommended for use by the community that uses this registry, and — a successor administered item is now preferred for use.
Retired	The registration authority has approved the administered item as — no longer recommended for use in the community that uses this registry and — should no longer be used.
Documentation statuses	
Historical	The submitter wishes to make the community that uses this registry aware of the existence of an administered item that was used in the past.
Application	The registration authority wishes to make the community that uses this metadata register aware of the existence of an administered item in their local domain that is in an application system and is not specified at the logical level. This item may be very well described.

While the general intent is to progress as many administered items as possible from “Incomplete” to the “Preferred Standard” registration status, progression to a status higher than “Recorded” or “Qualified” is not always appropriate. That is, necessary metadata attribute documentation for an administered item is possibly not available to establish required documentation for the “Recorded” status, is possibly not of the quality necessary for the “Qualified” status, or identification as “Preferred Standard” administered item is possibly not appropriate. Such administered items shall be held at their current status level in the metadata register to facilitate understanding of and access to these administered items by the community that uses this registry.

4.3.3 Description of registration status categories

4.3.3.1 Lifecycle status categories

4.3.3.1.1 Overview

The lifecycle status category of an administered item entry shall be based upon the completeness of the data entered, its accuracy, and its conformance to the established format and syntax. The lifecycle status category shall be one of those listed in [Table 1](#) in [4.3.2](#) and described in [4.3.3.1.2](#) through [4.3.3.1.9](#).

NOTE Attached items do not have their own registration status. Instead, the rules do not apply to them, except that once the associated administered item reaches “Recorded” status or above, all mandatory attributes and other constraints are enforced for the attached items as well as for the administered item.

4.3.3.1.2 Incomplete

When an administered item has the “Incomplete” status, this means that the submitter wishes to make the community that uses this registry aware of the existence of an administered item, and any associated attached items in their local domain. An administered item in the status of “Incomplete” in the registry shall not be maintained under version control. The minimum metadata attribute documentation for the “Incomplete” status in the registry shall be as follows:

- a) identifier;
- b) submitter organization name;
- c) submitter contact name;
- d) submitter contact information.

It is possible that the administered item does not contain all mandatory attribute values, and other constraints specified for particular metadata objects in the [ISO/IEC 11179-3](#) and related metamodels are not enforced.

4.3.3.1.3 Candidate

When an administered item has the “Candidate” status, this means that the administered item, and any associated attached items, has been proposed for progression through the registration levels. Administered items in the “Candidate” status are maintained under version control. The minimum metadata attribute documentation for the “Candidate” status includes all attributes required for “Incomplete” status, plus the following:

- a) stewardship organization name;
- b) stewardship contact name;
- c) stewardship contact information.

It is possible that the administered item does not contain all mandatory attribute values, and other constraints specified for particular metadata objects in the [ISO/IEC 11179-3](#) and related metamodels are not enforced.

4.3.3.1.4 Recorded

When an administered item has the “Recorded” status, this means that all mandatory metadata attributes have been completed, all mandatory associations have been instantiated and all associated constraints are to be enforced. The preceding rule also applies to any and all attached items attached to the administered item. An administered item in the “Recorded” status implies that the administered item may be shared across domains. The contents of the mandatory metadata attributes possibly do not conform to quality requirements. The submitter may request the retirement of an administered item in