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Information technology — Metadata registries (MDR) —

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), which has been technically revised.

The main changes are as follows:

— the restructuring of the different parts of ISO/IEC 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 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.

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

the registration status of "Recorded" at any time. Administered items in "Recorded" registration status or higher are maintained under version control.

4.3.3.1.5 Qualified

When an administered item has the "Qualified" status, this means that the administered item had a "Recorded" registration status and the registration authority has confirmed that the mandatory metadata attributes are complete and conform to applicable quality requirements. In the event that an administered item is not approved by the registration authority for the "Qualified" registration status level, it shall remain at the "Recorded" registration status level.

4.3.3.1.6 Standard

When an administered item has the "Standard" status, this means that the administered item had a "Qualified" registration status and the registration authority has confirmed that the administered item is of sufficient quality and of broad interest for use in the community that uses this registry. There is possibly more than one "Standard" administered item that addresses the same function, concept, etc.

4.3.3.1.7 Preferred Standard

When an administered item has the "Preferred Standard" status, this means that the registration authority confirms that the administered item is preferred for use in the community that uses this registry.

4.3.3.1.8 Superseded

When an administered item has the "Superseded" status, this means that the registration authority has determined the administered item is no longer recommended for use in the community that uses this registry. A "Superseded" administered item may be used, but the successor administered item is preferred for use. "Superseded" administered items are retained in the registry archival storage facility for historic reference purposes. "Superseded" administered items should include a reference to the successor administered items. Only editorial edits of "Superseded" administered items are permitted. An administered item can move to "Superseded" status from "Recorded" status or above, so the quality of the attribution is possibly no better than in "Recorded" status.

4.3.3.1.9 Retired

When an administered item has the "Retired" status, this means that the registration authority has determined that the administered item is no longer recommended for use in the community that uses this registry. A "Retired" administered item should no longer be used. Such administered items are retained in the registry archival storage facility for historic reference and research purposes. "Retired" administered items should include a reference to replacement *administered items* when appropriate. Only editorial edits of "Retired" administered items are permitted. An administered item can move to "Retired" status from "Recorded" status or above, so the quality of the attribution is possibly no better than in "Recorded" status.

4.3.3.2 Documentation status categories

4.3.3.2.1 Overview

For the documentation status categories, any state of completeness is possible.

4.3.3.2.2 Historical

When an administered item has the "Historical" status, this means that the submitter wishes to make the community that uses this registry aware of the existence of an item that was used in the past and has not been used recently. It is important to record so that related items can be given additional

perspective through knowledge of this item. A “Historical” administered item has not passed through the dynamic registration levels. It is possible that the quality of the attribution is no better than in “Incomplete” status.

4.3.3.2.3 Application

When an administered item has the “Application” status, this means that the registration authority wishes to make the community that uses this registry aware of the existence of an administered item in their local domain that is used by an application system. It is possible that this item is very well described. It is also possible that the quality of the attribution is no better than in “Incomplete” status. Items with the “Application” status may be from application systems that are in current development.

4.3.4 Description of administrative status

There should be administrative statuses that denote the pending changes that are important to the community that uses this registry. These status levels forewarn the community of changes that will possibly have an impact on their area of interest. The administrative status values are defined and controlled by the registration authority responsible for the registry. D.3 provides examples of possible administrative statuses used to record the progress of an administered item within each registration status. The example shown is not normative.

4.4 Procedures

The registration authority shall establish procedures for necessary activities of the registry. Example functional activities that need procedures are:

a) **Submission of items** - Submitters hall submit items to the registration authority for entry into the registry.

b) **Entry of items into the registry** - The item shall first be identified. This process makes it an identified item. The item may also be designated and defined. Finally, the item may become an administered item by providing additional administrative information about the submitting organization and submitter.

c) **Specification of registration status** - An administered item may be recorded as “Incomplete” or “Candidate” registration status, as the submitter deems appropriate. A registration status of “Incomplete” implies usage restricted to the submitter’s domain while being posted for informational purposes. The “Candidate” status implies that the submitter intends to progress the administered item to higher registration status levels. Submitters or stewards can progress administered items in the “Candidate” status to the “Recorded” registration status by completing all mandatory metadata attributes required of that administered item.

d) **Progression of administered items** - Submitters shall progress administered items to “Recorded” status. Progression of administered items to registration status of “Qualified” or higher shall require the sponsorship of a steward and approval of the registration authority.

e) **Harmonization of administered items** - The objective of harmonization is to resolve any potential duplicate or overlapping of administered items and to understand the justifiable differences that possibly exist among the harmonized items. Procedures shall be established to facilitate administered item harmonization and reuse.

f) **Modification of administered items** - Procedures shall be established to change administered items.

g) **Retirement of administered items** - Procedures shall be established to retire administered items.

h) **Administrative processing** - The registration authority may assign administrative statuses in order to track an interim state of an administered item.

Functional operating procedures are needed for those that develop, operate, and/or maintain a registry. ISO/IEC 11179-3 requires organizational participation of certain roles, such as registration authority, registrar, submitter and steward.

Annex B provides a suggested set of roles and responsibilities along with suggested functional operating procedures for the use of the registry by role.

Annex C provides a suggested concept of operations.

Annex D provides suggested procedures to address these functional requirements and the concept of operations.

Annex E provides suggested procedures for harmonization of administered items.

5 Metadata registries of administered items

5.1 General

A metadata registry is a system for registering metadata. A particular metadata registry may be used to manage any number of metadata registers, the information stores or databases maintained by the metadata registry. Each metadata register is maintained by one or more registration authorities. The number of metadata registers and registration authorities for any particular implementation of a metadata registry is a decision of the implementer and/or operator of a particular metadata registry.

Each administered item in any metadata register is associated with exactly one registration authority through the registration association. (See ISO/IEC 11179-3:2023, 9.5.4.)

The principal participants of metadata registries are registration authorities, submitting organizations, and stewardship organizations. The registration authority has one or more registrars as its contacts. Submitting organizations submit items to a registration authority for entry into a metadata registry under their control. A submitter is a contact for a submitting organization for a particular administered item. A submitting organization may utilize any number of submitters. Each administered item may be associated with one or more submitting organization, but with exactly one submitter at each organization. Stewardship organizations are authoritative sources for the attributes of administered items. A steward is a contact for a stewardship organization for a particular administered item. A stewardship organization may utilize any number of stewards. Each administered item is associated with exactly one steward and exactly one stewardship organization once the administered item reaches “Recorded” status.

5.2 Contents

5.2.1 Metadata registry views

In the context of this document, the views on the contents of the metadata register may vary based upon of the roles of the participants in the metadata registry and the levels of conformance to which the registry ascribes.

5.2.2 Metadata registry contents and levels of conformance

Stewardship organizations may have an impact on the content of individual attributes of each administered item. Stewardship organizations do not have the purview on the composition of the registry itself, i.e. what specific metadata attributes to include with each administered item. The registration authority specifies the requirements. For example, while the registration authority determines, in accordance with this document, that each administered item shall have a definition, the stewardship organization ensures that the definition of an item is semantically correct.

A registration authority may adopt a stricter or less strict level of conformance, levying corresponding requirements on submitting organizations. The contents of a metadata register, therefore, may vary

accordingly. Conformance for metadata registries shall be in accordance with ISO/IEC 11179-3:2023, Clause 4. ISO/IEC 11179-3:2023, 9.4.6 provides a mechanism for a registration authority to control which constraints are applied to which administered items.

5.2.3 Metadata registry contents and types of administered items

Not all metadata registries will have the need or the means to support all the types of metadata items specified in the metadata models described in various parts of ISO/IEC 11179 and ISO/IEC 19763. Possibly, some metadata registries will start with a metadata register of data element concepts; some will start with conceptual domains, then, at a later time, implement data elements and value domains. This document refers the reader to the relevant parts of ISO/IEC 11179 and ISO/IEC 19763 for the registry metadata attributes needed for specific types of administered items. This document makes use of the registry metadata attributes that apply to all administered items.

A metadata registry, however, shall not violate the business rules (as specified via associations and multiplicities) of the registry metamodel specified in relevant parts of ISO/IEC 11179 and ISO/IEC 19763 for administered items that have a registration status of “Recorded”.

5.3 Language(s)

The language(s) used by the metadata registry shall be documented by the registration authority or authorities using the ‘primary_language’ and ‘alternative_languages’ attributes of the Registry_ Specification. (See ISO/IEC 11179-3:2023, 9.4.10.)

5.4 Availability of the metadata registry of administered items

Access to the contents of the metadata register shall be governed in accordance with the procedure prescribed by the appropriate registration authority.

6 Conformance

A conforming implementation shall be in accordance with Clauses 4 and 5.

Annex A
(informative)

Identifiers based on ISO/IEC 6523

A.1 General

Metadata items identified under the provisions of this document are each assigned one or more unique identifiers. This annex specifies the formation of identifier values based on ISO/IEC 6523. In this document, the use of ISO/IEC 6523 is optional.

A.2 Components of International Registration Data Identifier (IRDI)

An identified item, as specified in ISO/IEC 11179-3:2023, 7.3.1, is uniquely identified by one or more scoped identifiers within a specified namespace. When a scoped identifier is developed based on ISO/IEC 6523, it is known as an International Registration Data Identifier (IRDI).

The uniqueness of an IRDI is determined by the combination of the values of three identifying attributes, as depicted in Figure A.1.

a) An identifier assigned to a registration authority, hereafter called Registration Authority Identifier (RAI).

b) An identifier assigned to an identified item within a registration authority, hereafter called Data Identifier (DI).

c) An identifier assigned to a version under which an item registration is submitted or updated, hereafter called version identifier (VI).

NOTE 1 Although it is possible the version identifier is not required to make an identified item unique within a metadata register, the inclusion of the version identifier in the International Registration Data Identifier would provide a unique reference point, in case a conflict arises.

NOTE 2 OPI and OPIS are optional per ISO/IEC 6523. This document uses the entire structure of ISO/IEC 6523 as a Registration Authority Identifier.

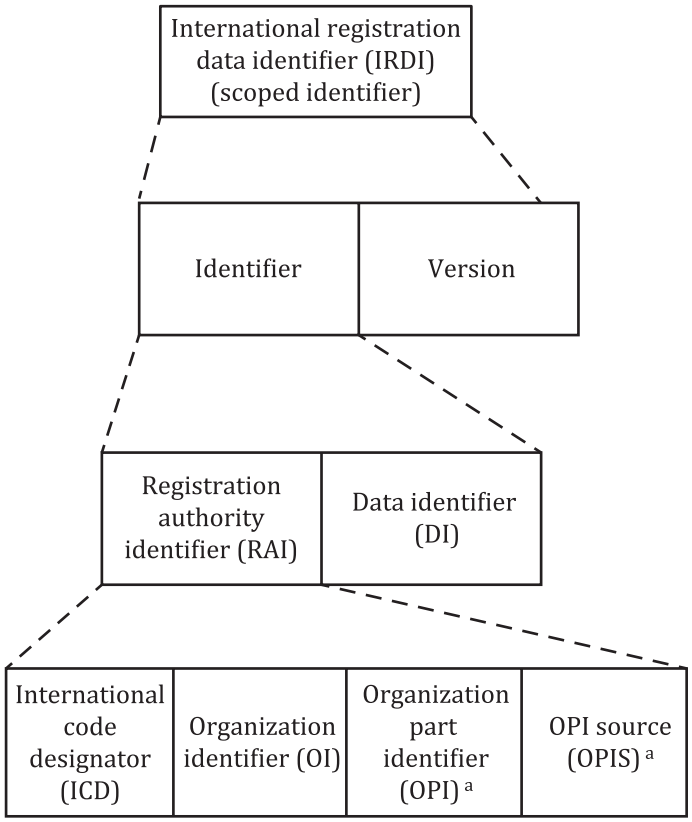
A.3 Assignment of values to international registration data identifier (IRDI) components

A.3.1 Overview

An international registration data identifier (IRDI) will be assigned to an item submitted for registration. The values of each component of the IRDI are assigned as follows.

A.3.2 Assignment of registration authority identifier (RAI)

Every registration authority wishing to use ISO/IEC 6523 to assign IRDIs, shall possess an internationally recognized organization code, assigned in accordance with the procedure prescribed in ISO/IEC 6523. The entire structure for identification of organizations, as described in ISO/IEC 6523-1:1998, Clause 4, shall be the internationally unique Registration Authority Identifier (RAI) for the purpose specified in this document.



[a] Optional. Ref: ISO/IEC 6523:1998.

Figure A.1 — Structure of International Registration Data Identifier (IRDI)

A.3.3 Assignment of data identifier (DI)

Each new submission accepted into the registry as an administered item shall be assigned a new Data Identifier (DI). A new data identifier shall also be assigned to an existing administered item when it is modified in such a way as to change its meaning or the representation form of its potential values. For example, changes to the mandatory attributes, definition and/or form of representation would require the assignment of a new data identifier. Editorial changes to the definition, however, would not cause generation of a new administered item, as long as the essential meaning expressed by the definition remains the same. For example, the value of the administrative attributes may change without causing generation of a new data identifier.

Based on the requirements of the subject matter included in its metadata register, each registration authority shall establish and publish as appropriate, specific guidelines for any additional conditions requiring assignment of a new data identifier (i.e. generation of a new administered item), due to changes in the values of mandatory attributes established for its metadata register.

Each registration authority shall establish and publish specific guidelines on the format, presentation, and generation of data identifiers that are used within the metadata register.

A.3.4 Assignment of version identifier (VI)

In general, a new version identifier (VI) may be generated when any attribute value (other than one requiring a new data identifier) changes. Each administered item, however, may require a different versioning treatment. For example, a change in permissible data element values for an employee name may not require a new version identifier, while a change of permissible values for an account type will

likely require a version identifier change. Each registration authority shall establish specific guidelines for the subject matters in which it specializes and for which it is responsible.

Each registration authority shall establish and publish specific guidelines on the format, presentation, and generation of version identifiers that are used within the metadata register.

A.4 Using ISO/IEC 6523 Organization codes as Registration Authority Identifier.

A.4.1 Organization Code Structure

The following excerpts from ISO/IEC 6523-1:1998 are included here for convenience, since this ready reference can facilitate the understanding of the code structure.

"The structure for the identification of organizations and organization parts consists of the following four components:

a) the International Code Designator (ICD);

b) the identification of an organization within an identification scheme: a data element containing an organization identifier;

c) the identification of an organization part: a data element containing an organization part identifier (OPI);

d) the OPI source indicator (OPIS): a data element containing a code value indicating the source of the OPI.

The third component, identification of an organization part, is optional. It is used when and only when one wants to designate a specific part within an organization.

The fourth component, the OPI source indicator (OPIS), shall not be used if the third component is not used; it is optional when the OPI is used.

The format of these data elements is the following:

— ICD: integer, variable length, up to 4 digits;

— Identification of an organization: variable length, up to 35 characters;

— OPI: variable length, up to 35 characters;

— OPIS: 1 character. "

NOTE No particular sequence of the four components is specified in either ISO/IEC 6523-1:1998 or in this document.

The structure is illustrated in Figure A.2.

ICD	Organization identifier	Organization part identifier	OPI Source
Variable length; Integer; Up to 4 digits.	Variable length; Up to 35 characters.	Variable length; Up to 35 characters; Optional.	1 character; Optional.

Source: ISO/IEC 6523-1:1998

NOTE The sequence of the four components is not specified in either ISO/IEC 6523-1:1998 or in this document.

Figure A.2 — Structure for the identification of organizations and organization parts

The ICD identifies an organization scheme and is assigned to an authority which maintains such a scheme. E.g. '1' = ISO, '60' = DUNS (Data Universal Numbering System) maintained by Dun & Bradstreet.

A.4.2 Registration authority for International Code Designators of ISO/IEC 6523 Registry

The name and contact information of the Registration Authority for ISO/IEC 6523 be found at https://www.iso.org/mara.

Obtaining an RAI without obtaining an ICD: The registration authority of ISO/IEC 6523 maintains only ICDs. An organization that wants to obtain an organization code does not necessarily have to obtain an ICD. It can contact an organization or trade association such as DUNS or SIRENE, which already have their ICDs, and request an organization code under their respective ICDs. The concatenation of ICD and Organization code assigned by the ICD owner will constitute the organization code of the requester.

Most organizations already have their international organization codes without realizing that fact. For example, most organizations have a DUNS code that can be concatenated with DUNS's ICD (0060) to form their own organization codes. The organization codes for subscribers of DUNS, under DUNS ICD will have the DUNS format and are assigned by Dun and Bradstreet. Table A.1 shows the detail of DUNS entry from the ISO/IEC 6523 registry.

Table A.1 — DUNS entry from the ISO/IEC 6523 registry

ICD	**0060**
Name of coding system	Data Universal Numbering System (D-U-N-S Number)
Name and address of issuing organisation	Dun and Bradstreet Ltd Holmers Farm Way High Wycombe Bucks HP12 4UL United Kingdom
Structure of code	1) Eight identification digits and a check digit. A two-digit prefix will be added in the future but it will not be used to calculate the check digit. 2) The Organization name is not part of the D-U-N-S number.
Display Requirements	IIIIIIIIC where all characters are the digits 0 to 9, I = an identification digit and C = the check digit. When the prefix (P) is added the display requirement will be eleven digits, PPIIIIIIIIC.
Description of organizations covered by the coding system	It is the objective of Dun and Bradstreet to allocate a D-U-N-S number to all businesses and institutions engaged in a specific business activity.
Notes on use of the code	The D-U-N-S Number originated to facilitate the compilation of financial status reports on those involved in business transactions but it is now widely used for other purposes also. The number has world wide recognition as a means of identifying businesses and institutions.
Sponsoring authority	BSI/DISC
Date of issue of ICD	JUNE 1993
Additional comments	A full specification of scheme has been deposited with the registration authority.

Annex B
(informative)

Suggested functional operating procedures — Roles and responsibilities

B.1 General

The ISO/IEC 11179 Metadata registry series of standards and technical reports provides the specifications for establishing systems that support the dissemination and harmonization of administered items (e.g. data elements, data element concepts, value domains) from different stakeholder groups. Most often a stakeholder community is large and diverse. The definition of key data elements and data element concepts as well as other administered items will arise from numerous sources. Moreover, different groups will have an interest in the definition of the same administered item, which could lead to the prospect of duplicate or similar definitions being developed.

This annex identifies suggested roles and responsibilities and provides suggested functional operating procedures for the use of the metadata registry by role. These procedures support documentation, standardization, and harmonization processes that facilitate different working groups sharing administered items. Annex C details suggested procedures for organizational roles and responsibilities (and their relationships), and suggested procedures for registration status levels.

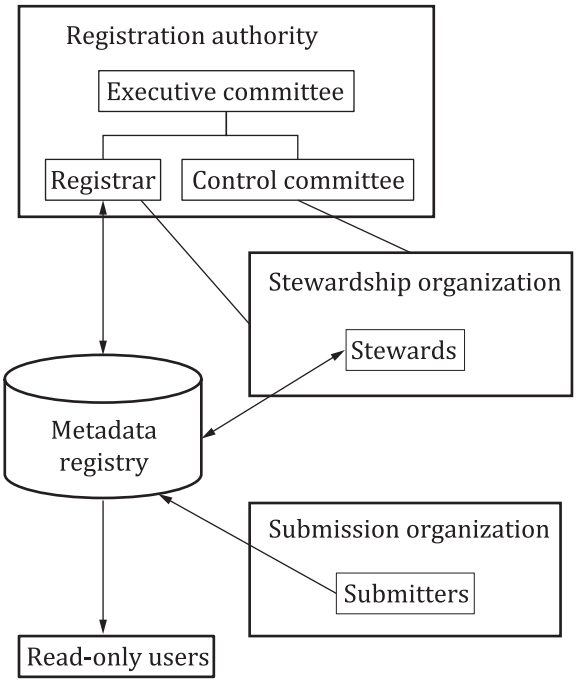
Organizational roles associated with the administered item registration process should be established. The organizational roles should include the registration authority, registrar, stewards, submitters, and read-only users. A summary of each role is provided in this annex. Annex C provides a description of the purpose, specific responsibilities, and membership or selection criteria for each role.

B.2 Roles associated with the metadata registry

B.2.1 General

There are three types of registration acting bodies (RAB) in the framework of this document: registration authorities, submitting organizations, and stewardship organizations. Each type of registration acting body should meet the criteria, fulfil the roles, and assume the responsibilities prescribed in the following clauses of this document.

Figure B.1 provides a high-level view of how these organizational roles are related within the context of a metadata registry.



Key

——— reporting structure

——→ data access (read, write or both)

Figure B.1 — Organizational roles to the metadata registry and their relationships

B.2.2 Role of registration authorities (RA)

B.2.2.1 Overall registration authority

The metadata registry registration authority should be an organizational unit that desires to operate and manage a metadata registry based upon the ISO/IEC 11179 series of standards. It is envisioned that any organization wishing to become a registration authority and establish a metadata registry for the purpose of registering administered items may do so.

A registration authority should establish and publish procedures for the operation of its metadata registry. A registration authority should receive and process proposals from submitting organizations for registration of administered items falling within its registration domain. A registration authority is responsible for maintaining the metadata register of administered items and issuing of international registration data identifiers (IRDIs).

B.2.2.2 Registrar

The registrar should be an organizational unit within the registration authority, expert in registration processes, responsible for facilitating the registration of administered items and making those administered items widely accessible and available to the community. The registrar may be viewed as the contact for the registration authority. The registration authority should appoint the registrar.

B.2.2.3 Executive committee

The executive committee should be an organizational unit established by the registration authority. It should be responsible for administering responsibilities and authority delegated by the registration authority. Responsibilities of the executive committee should include overall metadata registration policies and business direction of the metadata registry.

B.2.2.4 Control committee

The control committee should be the organizational unit of the registration authority that is constituted to provide technical direction and harmonization of administered items for the metadata register. The structure, staffing, procedures, and membership of the control committee are determined by the registration authority. The membership of the control committee may include registrars and stewards.

B.2.3 Role of stewardship organizations (StO)

B.2.3.1 Overall stewardship organization

Stewardship organizations are usually designated by an organizational unit to ensure consistency of related administered items managed by its submitting organizations. In the absence of a designated stewardship organization, a submitting organization should act as a stewardship organization.

A stewardship organization is the organization, or part thereof, that is responsible for the integrity and accuracy of the attribute values of the administered item; e.g. the semantics of administered items maintained and controlled by a registration authority. The stewardship organization is the subject matter expert for the administered item.

The stewardship organization, at the registration authority's request, should review proposals from submitting organizations on relevant attributes, e.g. name, definition, and permissible values for the administered item's attributes. The stewardship organization should inform the registration authority of any essential modifications in the specification of the assigned administered items.

B.2.3.2 Steward

A steward shall be an organizational unit of the metadata registry community. Stewards should be responsible for the accuracy, reliability, and currency of descriptive metadata for administered items at a registration status level of "Qualified" or above within an assigned area. A process defined by the registration authority approves stewards. Stewards should be responsible for metadata within specific areas and may have responsibilities that cut across multiple areas (e.g. value domains such as date, time, location, codes for the countries of the world). The steward can be viewed as a contact for the stewardship organization.

B.2.4 Role of submitting organizations (SuO)

B.2.4.1 Overall submitting organization

A submitting organization is any organization that submits items to a registration authority for entry into its metadata registry.

A submitting organization wishing to submit an item for registration shall follow the procedures and requirements prescribed in this document and in and the procedures established by the registration authority for its metadata registry. Each registration authority may establish its own criteria for registration eligibility.

B.2.4.2 Submitter

A submitter should be an organizational unit approved by a process defined by the registration authority. A submitter is authorized to identify and report administered items suitable for registration. The submitter can be viewed as a contact for the submitting organization.

B.2.5 Role of others

B.2.5.1 All others

A registration authority may establish guidelines on the use of their metadata registry by other users. The general goal should be to provide an open area that anyone may use to obtain and explore the metadata that is managed within the metadata registry.

B.2.5.2 Read-only user

A "read-only" user should be an organizational unit or individual that is approved to review the contents of the metadata register. A "read-only" user has access to the contents in the metadata register, but is not permitted to submit, alter or delete contents.

B.3 Responsibilities of registration acting bodies (RAB)

B.3.1 Responsibilities of Registration Authorities (RA)

In order to establish itself as a registration authority, an organization should complete the following.

— Secure a Registration Authority Identifier (RAI) in accordance with A.3.2.

— Prescribe, amend, and interpret the procedures to be followed for the registration of administered items in accordance with this document.

— Determine any additional conditions specifically required by its domain of registration within its metadata registry.

— Specify the format for each attribute specified in ISO/IEC 11179-3 and other applicable parts, and for any additional attributes that the registration authority may deem necessary, and specify the media by which an item for administration should be submitted for registration. The registration form and accompanying procedure shall be made available to requesting submitting organizations.

— Establish and publish the rules by which its metadata registry should be made available. The registration authority shall specify the allowable users, the accessible contents, the frequency of availability, and the language(s), media, and format in which the information is provided for the metadata registry.

Regarding applications for registering items for administration, a registration authority should fulfil the following responsibilities.

— Receive and process applications for the registration of items for administration from its submitting organizations.

— Assign international registration data identifier values, and maintain a metadata register in accordance with its procedures.

— Consult the appropriate stewardship organizations when requests affect the mandatory attributes of the administered items being registered.

— Handle all aspects of the registration process in accordance with good business practice and, in particular, take all reasonable precautions to safeguard the metadata register.

— Review and facilitate the progression of the applications through the registration cycle.

— Assign an appropriate registration status.

— Notify submitting organizations of its decisions according to the procedure specified in it rules.

B.3.2 Responsibilities of stewardship organizations (StO)

A stewardship organization should:

— at the registration authority's request, advise on the semantics, name, and permissible values for the administered item's attribute values submitted for registration;

— notify the registration authority of any amendments to the administered items assigned to the stewardship organization;

— decide, in case of confusion and/or conflict, on the attribute values of the assigned Administered Items.

B.3.3 Responsibilities of submitting organizations (SuO)

A submitting organization is responsible to:

— provide the information specified as required by the registration authority;

— provide any additional information relevant to the item submitted for registration;

— ensure that when an Administered Item has been registered, specification of the attribute values of the administered item is not changed without first advising the registration authority.

B.4 Responsibilities of organizations within Registration Acting Bodies (RAB)

B.4.1 Registrar

The registrar provides a single point-of-contact responsible for managing and maintaining information about data in the metadata register, under the authority of the registration authority. The registrar should be responsible for:

a) monitoring and managing the metadata registry contents;

b) enforcing policies, procedures, and formats for populating and using the metadata registry;

c) proposing procedures and standard formats for the metadata registry to the control committee for consideration;

d) recording current registration status for administered items in the metadata register;

e) ensuring access for authorized users to contents in the metadata registry;

f) assisting in the progression of administered items through the registration status levels;

g) assisting in the identification and resolution of duplicate or overlapping semantics of administered items in the metadata register;

h) acting on direction from the registration authority;

i) effecting registration of administered items in external metadata registers or dictionaries;

j) enforcing data registration procedures for submitting administered items to the metadata registry, e.g.:

   — how to prepare, submit, and process submissions of administered items;

   — how the metadata registry is used to avoid duplicate administered items submissions to the metadata register;

   — how the metadata registry is used to effect harmonization of data across metadata registers of participating organizations;

— how external metadata registers are used as a source of administered items for reuse in the metadata register;

k) maintaining a separate document recording the appropriate contact information for all members of the control committee and the executive committee;

l) adding new users or organizational entities that may become authorized to access the metadata register;

m) maintaining other controlled word lists of the metadata registry.

B.4.2 Stewards

Stewards provide specific expert points of contact responsible for coordinating the identification, organization, and establishment of registered data for use throughout the enterprise within an assigned functional area.

Stewards should be responsible for:

a) coordinating the identification and documentation of administered items within their assigned functional area;

b) ensuring that appropriate administered items in their assigned functional area are properly registered;

c) coordinating with other stewards to attempt to prevent or resolve duplicated efforts in defining administered items;

d) reviewing all administered items once they are in the “Recorded” status to identify and attempt to resolve conflicts among administered items with other stewards’ assigned functional areas;

e) ensuring the quality of metadata attribute values for administered items they propose for the “Qualified” registration status level, reusing standardized data from external metadata registers where applicable;

f) proposing “Standard” registration status level administered items in their assigned functional area;

g) Proposing “Preferred Standard” registration status level administered items in their assigned functional area;

h) ensuring that data registration procedures and formats are followed within their assigned functional area;

i) recommending submitters to the registration authority.

B.4.3 Submitters

Submitters are organization elements that are familiar with or engaged in development and operational environments. Submitters maintain current administered items and are engaged to describe and submit new administered items following the registration requirements.

A submitter should be responsible for:

a) identifying himself to the registrar;

b) identifying and documenting administered items appropriate for registration in the metadata register;

c) submitting administered items to the metadata register;

d) ensuring the completeness of mandatory metadata attributes for administered items proposed for the "Recorded" registration status level.

B.4.4 Read-only users

A "read-only" user is an organizational unit approved by the registrar to review the contents of the metadata register. Read-only users may not add to, delete from, or otherwise modify the contents of the metadata register.

B.4.5 Control committee

The control committee provides overall technical direction of, and resolution of technical issues associated with, the metadata registry, its contents and its technical operations.

The control committee should be responsible for:

a) overall conduct of registration operations;

b) promoting the reuse and sharing of data in the metadata register within and across functional-areas, and among external interested parties to the enterprise;

c) progressing administered items through "Qualified", "Standard", and "Preferred Standard" registration status levels;

d) resolving semantical issues associated with registered administered items, e.g. overlap, duplication, etc;

e) approving updates to Administered Items previously placed in the metadata register with the "Qualified", "Standard", or "Preferred Standard" registration status levels;

f) proposing metadata registry policies to the executive committee for approval;

g) approving authorized submitters, read-only users, and types of users, of the metadata registry;

h) approving metadata registry content, procedures, and formats;

i) submitting management-related recommendations and issues to the Executive Committee;

j) acting on directions from the executive committee;

k) meeting periodically in face-to-face meetings, with additional meetings and teleconferences held as needed.

The control committee will normally fulfil its responsibilities via consensus building in accordance with an established procedure. Intractable issues may be resolved by an established procedure.

B.4.6 Executive committee

The executive committee should be responsible for overall policy and business direction for the metadata registry, to include:

a) establishing overall metadata registry policies;

b) resolution of all business management issues pertaining to the metadata registry, e.g. copyrights, stewardship, executive committee membership, etc;

c) ensuring the long-term success and performance of the metadata registry;

d) establishing and updating the metadata registry charter and strategic plans;

e) meeting periodically in face-to-face meetings, with additional meetings and/or teleconferences held as needed.

The executive committee will normally fulfil its responsibilities via consensus building. Intractable issues may be resolved by an established procedure.

Annex C
(informative)

Suggested functional operating procedures — Concept of operations

C.1 Registration concept of operations

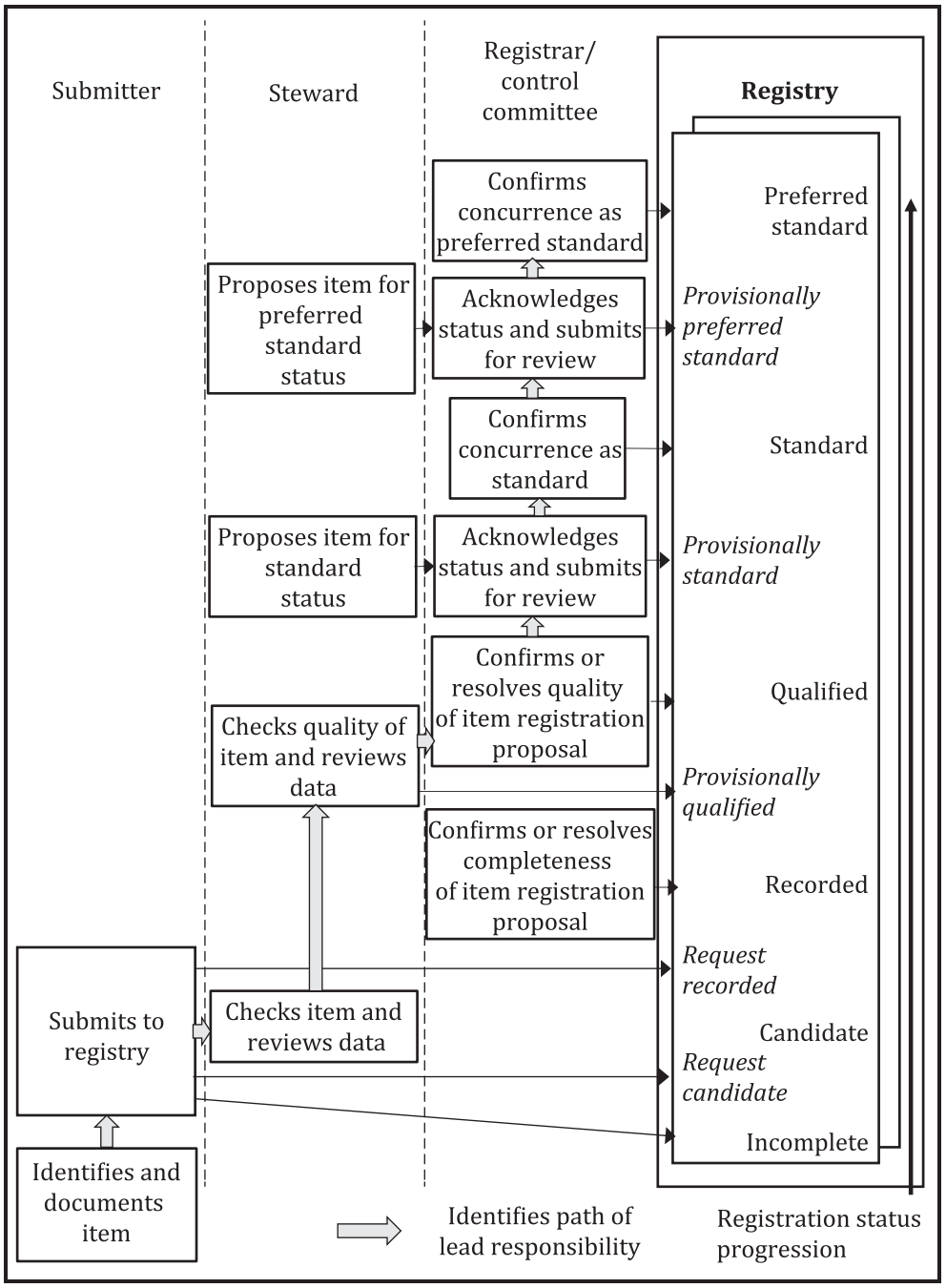
This annex defines the suggested overall concept of operations for the metadata registry. It shows suggested roles and responsibilities and shows suggested functional operating procedures for the use of the metadata registry. The suggested operational procedures for the metadata registry are summarized in this annex. These procedures describe registration and harmonization practices for the metadata registry. See Annex B for organizational roles and responsibilities (and their relationships) and 4.3.2 for registration status level definitions. This annex describes the registration activities associated with submitters, stewards, and the registrar and roles of the control committee. Figure C.1 summarizes these functional activities.

C.2 Registration initiation

All submitters accomplish the submitter registration activities in the same way in accordance with these functional operation procedures so that administered items are consistently and accurately registered. The responsibility of the submitter is to propose and document administered items for registration with the registration status of “Incomplete”; and, if desired, propose administered items for the registration status of “Candidate” then “Recorded”. A submitter acquires an understanding of administered items, their context and sources, and their significance in the course of accomplishing normal operational, design, development, or management activities.

C.3 Quality review

The responsibility of the steward, for administered items in an assigned functional area, is to ensure that quality registration candidates are passed to the registrar for presentation to the control committee. Presented candidates are evaluated to see if they meet the criteria for “Qualified” registration status. Stewards also may recommend administered items for “Standard” and “Preferred Standard” registration status.



NOTE Timing of registration status progression is entirely dependent upon the submitter/steward/registrar.

Figure C.1 — Registration functional activities

C.4 Metadata Registry administration

The responsibility of the registrar is to coordinate the metadata registry environment and manage the metadata registry, making its contents as widely accessible as feasible. Administrative levels may be established to track the progression of an administered item in the transition from one administrative status level to the next. Some potential examples are:

a) Provisionally Qualified - An administered item with the “Provisionally Qualified” administrative status means that a steward has confirmed that the mandatory metadata attributes are complete

and conform to applicable metadata attribute quality requirements. The steward is authorized to promote administered items at the "Recorded" registration status to the administrative status of "Provisionally Qualified" at such time as the steward believes that all quality requirements have been achieved.

b) Provisionally Standard - An administered item with the "Provisionally Standard" administrative status means that a steward proposes the administered item as "Standard" for general use in the registry community; however, certification of "Standard" registration status of the administered item by the Control Committee is not yet complete. The steward is authorized to promote administered items at the "Qualified" registration status to the "Provisionally Standard" administrative status at such time as the steward believes the administered item should be a "Standard" administered item.

c) Provisionally Preferred - An administered item with the "Provisionally Preferred" administrative status means that a steward proposes the administered item as "Preferred Standard" for preferred use in the registry community; however, certification of "Preferred Standard" registration status of the administered item by the Control Committee is not yet complete. The steward is authorized to promote administered items at the "Standard" registration status to the "Provisionally Preferred" administrative status at such time as the steward believes the administered item should be a "Preferred Standard" administered item.

Annex D
(informative)

Suggested functional operating procedures — Procedures

D.1 General procedures

D.1.1 Review and response

Submissions shall be reviewed according to the following steps:

Step 1. Preliminary review to verify completeness of the submission;

Step 2. Applicant's review to authenticate the applicant's identity and supporting organizational and contact information;

Step 3. Technical review of the submission, if any;

Step 4. Processing the submission in the registry (e.g. making the additions, changes, deletions);

Step 5. Responding to the applicant in writing and/or E-mail;

Step 6. Publishing updates, if applicable.

D.1.2 Rejection criteria

The submission may be rejected for any of the following reasons:

— if the submission does not provide the required (mandatory) information;

— if the submission provides false or misleading information;

— if the applicant does not respond to questions about clarifications or ambiguities within the submission;

— if the submission is inconsistent with the requirements of the registration;

— if the registration requires a technical review and the submission fails the technical review.

In all cases, the applicant has a metadata registry specific period of time to respond and remedy the issue before the submission is formally rejected.

D.1.3 Revision and review procedures

Once registered, an administered item may be revised, reviewed or in special cases possibly withdrawn.

D.1.4 Revision procedures

D.1.4.1 General

Unless specified otherwise, the following revision procedures apply to all administered items.

D.1.4.2 Changing registrant contact information

Submitters and stewards may update their contact information. Updating only contacting information (1) shall not require a technical review, and (2) is not considered a revision or review for the purposes of the systematic review cycle.

D.1.4.3 Update procedures

Submitters and stewards may update information about their administered items, as permitted by the metadata registry procedures.

Using the current procedures, if an initially an administered item would require a technical review, then a technical review shall be performed on an updated registration.

NOTE In other words, the requirement for technical reviews is the same for initial registrations as it is for updated registrations.

D.1.4.4 Registrant transfer procedures

A submitter may reassign a registered item to another submitter.

A steward may reassign a registered item to another steward.

Using the current procedures, if an initially registered item would require a technical review, then a technical review shall be performed on transferred registration.

NOTE In other words, the requirement for technical reviews is the same for initial registrations as it is for transferred registrations.

D.1.5 Review procedures

D.1.5.1 General

Unless specified otherwise, the following review procedures apply to all administered items.

NOTE One purpose for reviewing Administered Items is to update any information associated with the Administered Item; another purpose is to confirm that the existing registered information is still current and valid.

D.1.5.2 Registrant-initiated review procedures

A registrant may have its administered item reviewed.

D.1.5.3 Period of validity

The registration authority should establish and publish a period of validity for items that are to be maintained within the metadata register.

D.1.5.4 Systematic review procedures

All administered items should be reviewed on a regular basis. After the initial registration or the last registration update, administered items shall be reviewed within the period of validity.

The registration authority should establish and publish the procedures for systematic review. These procedures should include:

— the elapsed time before which a notification of an anticipated registration review shall be sent to the steward prior to the review date;

— the elapsed time before which a reminder notice shall be sent again prior to the review date;

— the means by which reviews are conducted and recorded by the stewards;

— the process for handling items that were to be reviewed but were not reviewed.

NOTE Changing contact information is not considered a registration update.

D.1.6 Dispute resolution

The registration authority should establish and publish procedures for dispute resolution.

If there is a dispute between an applicant, submitter and/or steward, and the registration authority, the registration authority should make reasonable efforts to resolve the dispute.

The applicant should (1) identify the problem in writing, (2) identify potential solutions for a favourable outcome, (3) provide additional contact information (e.g. mobile phone), as necessary, and (4) communicate the dispute to the registration authority.

Upon receipt of the dispute, the registration authority should contact the applicant within a time frame specified in the metadata registry procedures with a potential resolution or a proposed timeline for resolution.

If the applicant and the registration authority are unable to resolve the dispute, the applicant may appeal according to the established procedures for dispute resolution.

D.2 Progression through registration status categories

D.2.1 General

Administered items shall have a registration status. For each registration status, the steps for progression are:

D.2.2 "Incomplete" status administered items

Step 1. The submitter identifies administered items appropriate for this status level in the course of normal activities. Submitter prepares a registration proposal documenting as many metadata attributes as possible described in the standard. Submitter validates the definitions. Submitter initiates this status for administered items they submit to the metadata register.

Step 2. The submitter reviews administered items to determine whether the administered item should be progressed from an "Incomplete" registration status. If the administered item is not to be progressed, it is held in the metadata register in its current status level.

Step 3. The steward also reviews administered items to determine, in co-ordination with an appropriate submitter whether an administered item should be progressed from an "Incomplete" registration status. If the administered item is not to be progressed, it is held in the metadata register in its current status level.

Step 4. The registrar also reviews administered items to determine, in co-ordination with the appropriate submitter and steward whether an administered item should be progressed from an "Incomplete" registration status. An administered item may be progressed into the "lifecycle" registration status categories towards standardization. The administered item may be placed in a "documentation" registration status category of "Application" or "Historical". The registrar, submitter, and steward may determine that the item is not appropriate for the metadata register and have it removed from the metadata register. If the administered item is not to be progressed or removed, it is held in the metadata register in its current status level.

Possible progression from "Incomplete" status.

The administered item may be left in the current status or progressed to one the following registration statuses.

— Candidate;

— Historical;

— Application.

D.2.3 "Candidate" status administered items

Step 1. The submitter determines that an administered item should be progressed from "Candidate" registration status. The submitter confirms that mandatory metadata attributes are complete, updating the metadata attributes as necessary. The submitter then requests "Recorded" or another status for the administered item.

Step 2. The steward with the submitter reviews administered items to determine whether the administered item has all the required and desirable metadata attributes and therefore should be progressed from a "Candidate" registration status.

Step 3. The steward determines that an administered item should be progressed to "Recorded" registration status. For such administered items, the steward confirms that mandatory metadata attributes are complete, updating the metadata attributes as necessary. The steward then requests "Recorded" or another status for the administered item. If the administered item is not to be progressed, it is held in the metadata register in its current status level.

Step 3. Upon request for "Recorded" registration status from the submitter and steward, the metadata registry system checks that the mandatory metadata attributes of the administered item are present and requests a change of the registration status to "Recorded" for administered items with entries containing all mandatory metadata attributes. If any mandatory metadata attribute is missing an entry, the metadata registry notifies the requester of the missing metadata attribute(s).

Step 4. The registrar also reviews administered items to determine, in co-ordination with the appropriate submitter and steward whether an administered item should be progressed from a "Candidate" registration status. The registrar, submitter, and steward may determine that the item is not appropriate for the metadata register and have it removed from the metadata register. If the administered item is not to be progressed, it is held in the metadata register in its current status level.

Possible progression from "Candidate" status.

The administered item may be left in the current status or progressed to one the following registration statuses.

— Recorded;

— Historical;

— Application.

D.2.4 "Recorded" status administered items

Step 1. Stewards will review "Recorded" registration status level administered items periodically with the view of possibly progressing an administered item to the registration status level of "Qualified". The steward reviews the metadata attributes for conformance to quality requirements of this document and any other requirements as may be agreed to by the control committee as published as a registry management policy. If the metadata attributes do not meet these quality requirements, the steward assists the submitter in achieving the quality requirements by referring the submitter to appropriate policies, procedures, and guidelines.

Step 2. The steward checks pertinent external registries or other external data dictionaries to determine if an administered item has already identified in another domain, outside of this community,

that fulfils the needs of the community and is satisfactory to the original submitter. The extent of this check of external sources of administered items depends upon the steward's knowledge of potential appropriate external sources. The steward may consult with the registrar, who could maintain and publish lists of external registries that have been found useful to the community.

NOTE When administered items from foreign registers are reused in the metadata register, they can go in as "Candidate" and be progressed in their native form (provided minimum metadata attributes for external administered items are completed). Alternatively, they can be progressed to "Recorded" registration status with local changes (provided minimum metadata attributes for external administered items are completed).

If such an external administered item is identified, then that external administered item may be put forward and reused in lieu of the specific administered item proposed by the submitter.

Step 3. The registrar reviews all "Provisionally Qualified" status administered items periodically to re-verify completeness of mandatory metadata attributes and to confirm quality requirements of the metadata attributes for the administered item(s), including uniqueness of its identifier, quality of its definition(s).

If quality requirements are met, the registrar shall progress the administered item to the "Qualified" status.

If quality requirements are not met, the registrar supports the steward and the submitter in taking any actions necessary to bring the metadata attributes of the administered item to quality standards, if possible. If not, the administered item is retained on hold at the "Recorded" registration status level. Once such quality standards are achieved for appropriate metadata attributes, the registrar submits a listing of such administered items proposed for "Qualified" registration status, together with all supporting metadata attributes, to the control committee periodically for the control committee for approval as "Qualified" administered items. If administered items are not approved by the control committee to the "Qualified" registration status level, they retain the "Recorded" registration status.

Final resolution as to "Qualified" registration status level may result in confirmation of the item as a new "Qualified" administered item, a new version of a previously "Qualified" administered item, or recognition of the item as already established in the "Qualified" status. In this case, or if the registered administered item has been previously established as a "Qualified" administered item in the metadata register, the steward and submitter, as well as associated systems developers, will reuse such administered items in their application development efforts. This resolution may also re-assign responsibility for the registered administered item to another steward.

Possible progression from Recorded status.

The administered item may be left in the current status or progressed to one the following registration statuses.

— Qualified;

— Retired;

— Superseded.

D.2.5 "Qualified" status administered items

Step 1. Stewards and registrar will review "Qualified" registration status level administered items periodically with the view of possibly progressing an administered item to the registration status level of "Standard". For any administered items so identified, the registrar updates the administrative status level to "Provisionally Standard" and the steward provides the registrar with a short statement as to why such administered items should be progressed to the "Standard" registration status level.

Step 2. The registrar reviews all administered items in the "Provisionally Standard" administrative status periodically to confirm it as a viable "Standard" administered item. The registrar submits a listing of all administered items proposed for the "Standard" registration status, together with their metadata attributes and the steward's statement, periodically to the control committee for approval as

"Standard" data. A key focus of review by the registrar and the control committee is the identification and resolution of overlapping or redundant administered items among the stewards. The registrar then changes the registration status level of approved administered items to "Standard". If administered items are not approved by the control committee to the "Standard" registration status level, they retain the "Qualified" registration status. If quality requirements are met, the registrar shall progress the administered item to the "Standard" status

Step 3. Stewards and the registrar will review "Qualified" registration status level administered items periodically with the view of possibly progressing an administered item to the registration status level of "Retired". For any administered items so identified, the registrar updates the administrative status level to "Provisionally Retired" and the steward provides the registrar with a short statement as to why such administered items should be progressed to the "Retired" registration status level. If "Provisionally Retired" administered items are not approved by the control committee to the "Retired" registration status level, they retain the "Qualified" registration status.

Possible progression from "Qualified" status.

The administered item may be left in the current status or progressed to one the following registration statuses.

— Standard;

— Retired;

— Superseded.

D.2.6 "Standard" status administered items

Step 1. Stewards will review "Standard" registration status level administered items periodically with the view of possibly progressing an administered item to the registration status level of "Preferred Standard". For any administered items so identified, the steward may update the administrative status level to "Provisionally Preferred" and the steward provides the registrar with a short statement as to why such administered items should be progressed to the "Preferred Standard" registration status level.

Step 2. The registrar reviews all administered items in the "Provisionally Preferred" registration status periodically to confirm it as a viable "Preferred Standard" administered item. The registrar submits a listing of all administered items proposed for the "Preferred Standard" registration status, together with their metadata attributes and the steward's statement, to the control committee periodically at the control committee for approval as "Preferred Standard" administered item. A key focus of review by the registrar and the control committee is the identification and resolution of whether an administered item is to be preferred for use within this metadata registry community. The registrar then changes the registration status level of approved administered items to "Preferred Standard". If administered items are not approved by the control committee to the "Preferred Standard" registration status level, they retain the "Standard" registration status. If quality requirements are met, the registrar shall progress the administered item to the "Preferred Standard" status

Possible progression from "Standard" status.

The administered item may be left in the current status or progressed to one the following registration statuses.

— Preferred Standard;

— Retired;

— Superseded.

D.2.7 "Preferred Standard" status administered items

Step 1. Stewards will review "Preferred Standard" registration status level administered items periodically with the view of insuring that an administered item is still to remain at the registration status level of "Preferred Standard".

Step 2. The registrar submits a listing of all administered items proposed for downgrading to the "Standard" registration status, together with their metadata attributes and the steward's statement, to the control committee meetings for approval as "Standard" data. A key focus of review by the registrar and the control committee is the change in the metadata registry community's preference for the administered item.

Possible progression from "Preferred Standard" status.

The administered item may be left in the current status or progressed to one the following registration statuses.

— Standard;

— Retired;

— Superseded.

D.2.8 "Retired" status administered items

Possible progression from "Retired" status.

Administered items in this registration status should not change status.

There is no progression for this registration status.

D.2.9 "Superseded" status administered items

Step 1. Registrars and stewards will review "Superseded" registration status level administered items periodically with the view of possibly progressing an administered item to the registration status level of "Retired". For any administered items so identified, the registrar may update the administrative status level to "Provisionally Retired" and the steward provides the registrar with a short statement as to why such administered items should be progressed to the "Retired" registration status level. If "Provisionally Retired" administered items are not approved by the control committee to the "Retired" registration status level, they retain the "Superseded" registration status.

Possible progression from "Superseded" status.

The administered item may be left in the current status or progressed to the following registration status.

— Retired.

D.2.10 "Historical" status administered items

Possible progression from "Historical" status.

Administered items in this registration status should not change status.

There is no progression for this registration status.

D.2.11 "Application" status administered items

Possible progression from "Application" status.

Administered items in this registration status will probably not change status. However, there may be circumstances where this may be progressed to the “Candidate” status.

— Candidate.

D.3 Example use of Administrative Status

Each registration authority shall specify whether and how the administrative status should be used.

Table D.1 shows one possible use of administrative status to show the progression of an administered item from the time it enters a particular registration status.

Table D.1 — Example administrative status values

Administered item registration status category	Example administrative status values		
Incomplete	Initial	Provisionally Candidate	Approved as Candidate
Candidate	Approved as Candidate	Provisionally Recorded	Approved as Recorded
Recorded	Approved as Recorded	Provisionally Qualified	Approved as Qualified
Qualified	Approved as Qualified	Provisionally Standard	Approved as Standard
Standard	Approved as Standard	Provisionally Preferred Standard	Approved as Preferred Standard
		Provisionally Superseded	Approved as Superseded
Preferred Standard	Approved as Preferred Standard	Provisionally Superseded	Approved as Superseded
		Provisionally Retired	Approved as Retired
Superseded	Approved as Superseded	Provisionally Retired	Approved as Retired
Retired	Withdrawn		

The actual status values should reflect stages in the internal approval process of the registration authority.

D.4 Change management procedures

D.4.1 Change procedures for administered items in the metadata register

Procedures for proposing changes to an administered item in the metadata register are the same as for new proposals, except that the steward should involve the original submitter of the administered item in the event a submitter other than the original submitter is proposing changes.

The metadata registry should automatically notify the associated steward of any changes to an administered item with a registration status of “Recorded”.

For administered items at registration status of “Qualified” or higher, only the original submitter of an administered item or responsible steward should edit the administered item. Changes to administered items in a registration status of “Qualified” or higher should not be made without control committee approval.

The steward mediates any conflicts between submitters associated with a proposed change. Similarly, when the proposal is forwarded to the registrar, other relevant stewards should be involved in review of the proposal and the registrar will mediate any conflicts between the stewards.

The registrar reports administered item change proposals for administered items at "Qualified" and above to the control committee with appropriate change of version or a new administered item due to substantive change in semantics or representational form of the administered item. Mere refinement of semantics change to administrative metadata attributes, or change of registration status do not result in version changes. Stewards should determine whether or not the semantics of an administered item have changed significantly enough to warrant a version change. Stewards also have to determine whether changes warrant a new ID, not just a new version. It is possible for additions to codeset values to result or not result in version changes, as specified in the metadata registry procedures.

Formal change management of administered items is accomplished only for managing changes to administered items at the "Recorded", "Qualified", "Standard", or "Preferred Standard" registration status categories. Changes to administered items in the registration status levels of the "Retired", "Superseded", "Historical" status should not be permitted. Administered items at the "Incomplete" and "Candidate" registration categories are not normally change managed in terms of control committee involvement or approval actions.

D.4.2 Retirement procedures for administered items in the metadata register

In the event an administered item in the metadata register is proposed for retirement, generally the same procedures are followed as for administered item registration change proposals. "Retired" administered items are not to be used, as compared to "Superseded" administered items which may be used.

An administered item in the metadata register can be proposed for retirement for a number of reasons. For example, it can be replaced by an entirely new administered item in the metadata register or it can possibly have been inappropriately placed in the metadata register. "Retired" administered items should be linked to the superseding administered item, if any, by the submitter or steward in such a way that the effective date of superseding data is recorded (with "last change date") and a mapping of the old and new administered items in the metadata register is preserved.

The status of an administered item proposed for retirement is changed to "Retired" by the registrar for administered items in the "Qualified" registration status or higher after presentation to the control committee. The submitter may change the registration status of administered items at the "Recorded" levels to "Retired" at any time, without review by the control committee.

D.4.3 Superseding procedures for administered items in the metadata register

In the event an administered item in the metadata register is proposed to be superseded, generally the same procedures are followed as for administered item registration change proposals. "Superseded" administered items may be used as compared to "Retired" administered items which should not be used.

An administered item in the metadata register can be proposed to be superseded for a number of reasons. For example, it can be superseded by a new administered Item, it can be replaced by an entirely new administered item in the metadata register, or it can possibly have been inappropriately placed in the metadata register. "Superseded" administered items should be linked to the superseding administered item, if any, by the submitter or steward in such a way that the effective date of superseding data is recorded (with "last change date") and a mapping of the old and new administered items in the metadata register is preserved.

The status of an administered item proposed for to be superseded is changed to "Superseded" by the registrar for administered items in the "Qualified" registration status or higher after presentation to the Control Committee. The submitter may change the registration status of administered items at the Recorded levels to "Superseded" at any time, without review by the control committee.

Annex E
(informative)

Suggested functional operating procedures — Harmonization and reuse

E.1 General

These procedures detail how the Control Committee and the stewards may execute their responsibilities as identified in C.2 regarding identification, reconciliation, and documentation of administered item overlaps and duplications across stewards' cognizant areas (and reuse of administered items among stewards' cognizant areas).

The stewards and the registrar shall bring to the attention of the registration authority instances where it appears that duplications of administered items have been proposed.

E.2 Identification and Resolution of Metadata Harmonization Issues

As the metadata register is populated with administered items, harmonization of these administered items can be addressed.

Identification of potential administered item issues may be accomplished by stewards, the registrar, or as specifically focused by control committee directives, as follows:

Step 0: The control committee may further direct the registrar to focus analysis efforts within particular domain areas (e.g. location reference or incident management) or administered item (e.g. value domains).

Step 1: Stewards may review the metadata register contents for potential administered item issues.

Step 2: Stewards should report any potential administered item issues to the registrar, specifying the identifiers of the administered items of concern.

Step 3: The registrar should use the capabilities of the metadata registry to identify potential overlapping or redundant semantics of administered items. Identification of potential administered item issues will result from analysis by the registrar of names, definitions, and common metadata specifications.

Step 4: The registrar should prepare a summary listing of potential administered item issues together with all documenting metadata attributes for each administered item on the summary listing. The listing should contain any new potential administered item issues identified since the last check pointed version as well as any open issues from past months–including the latest harmonization status for previously identified issues. The listing should identify the lead steward that is expected to lead the resolution efforts as well as any steward(s) associated with the potential issue. Note that there can be occasions wherein there is no "lead steward" identified, if it proves useful to have a third party take the lead on the issue. Note, also, that the lead steward may be changed with the consent of all other stewards involved in the data issue at hand by notification to the registrar of the agreed upon new lead steward.

Step 5: The registrar should post the listing.

Step 6: The registrar should announce availability of the issues listing to the stewards and other control committee members.

Step 7: Upon receipt of this periodic listing, each lead steward should analyse the potential administered item issues in their listing, consulting with any other steward(s) associated with the issue (as appropriate), and determine an appropriate resolution of the issue. The first step in this process is for each of the stewards is to understand the semantics of the administered items at issue. If the semantics are not equivalent then the administered items should remain separate. If they are equivalent or significantly equivalent, then the stewards may agree to use one of them, modify one of them for joint use, or mutually agree to a new administered item to supersede those administered items at issue. The intent of this examination is to agree on a mutual solution to these dimensions of the administered items at issue.

It is possible for the resolution to be that one administered item is selected and other administered items reference the selected administered item as superseding, the administered items at issue are merged into a new administered item and the other administered items at issue reference the new administered item as superseding, or the administered items at issue are kept separate and independent.

Each lead steward may report to the registrar the status of administered item resolutions as soon as that resolution is determined, including any interim resolution status (such as how the resolution will be determined or inability to achieve resolution). This report should be accomplished by electronically returning only the entries that have been changed in the summary listing to the registrar with a resolution status note inserted in the Remarks column for each administered item. The resolution status note should refer to the administered item identifier of each administered item at issue and state the harmonization status associated with that administered item. It should also state the effective date of the harmonization status. These notes should be placed in the beginning of the remarks section of the listing for each administered item at issue. Each lead steward should make such a report to the registrar incrementally as issues are resolved.

Step 8: Before any control committee meeting, the registrar should distribute a summary listing of all administered items at potential issue together with the current resolution status for each administered item and a complete statement of all metadata attributes for each administered item at issue. This listing should be distributed to all stewards.

Step 9: Stewards may report any issues they have with this listing to the registrar before the control committee meeting in order that a complete packet can be prepared for the control committee meeting reflecting the most current status of harmonization issues. The registrar should forward the master listing and any remarks received from the stewards to the control committee secretary before the control committee meeting

Step 10: The control committee secretary should distribute the harmonization listing to the control committee members.

Step 11: The control committee should review the harmonization results and issue directions to the registrar. For those administered items at issue for which harmonization has been achieved between the relevant stewards, the control committee should review and approve the stewards' harmonization status, or require such additional harmonization actions as may be appropriate. The control committee should review those administered items at issue that the relevant stewards have not been able to resolve and propose resolutions, if possible. The registrar should retain each administered item at issue, together with its current harmonization status, on the harmonization listing until such time as final resolution is accomplished, appropriate standards committees have approved of the resolution, and the control committee has approved the final harmonization status. These administered items will be included in the next listing of harmonization issued at Step 4.

Annex F
(informative)

Frequently asked questions

F.1 Why not have a single international registration authority for all administered items?

It would be conceptually more attractive to have a single registration authority for all administered items. Redundancy would be minimized, and data sharing would be easier thanks to a single point of reference. Although these approaches may be suitable for the registration of a limited number of objects, e.g. registration of graphical items (see ISO/IEC 9973), they are, however, neither viable nor practical for the registration of administered items. There will be a very large number of administered items to be registered, and no single organization will have resources and expertise to review and register administered items of varied subject matters.

F.2 Is ISO/IEC 6523 a viable vehicle for assigning identifiers to be used as Registration Authority Identifiers (RAI)?

Several options have been contemplated:

— no required Registration Authority Identifier in the case of a single global registration authority;

— use a randomly generated number as Registration Authority Identifier, e.g. Object ID (OID) in Information Resource Dictionary System (IRDS) models;

— use ISO/IEC 6523 registration authority as a vehicle for distributing organization codes that will be used as Registration Authority Identifiers.

ISO/IEC 6523 registration authority has been able to attract organizations like EAN, Dun & Bradstreet, SWIFT, which have hundreds of thousands of registered members. Also, ISO/IEC 6523 has been adopted by EDIRA (registration authority for EDI) as a framework for assigning organization codes for EDI purposes.

ISO/IEC 6523 currently is a viable vehicle for Registration Authority Identifier assignment in the framework of this document.

Identifiers for Organizations for Telecommunications Addressing (IOTA) has ICD “0124”. It is using the ICD system format defined in ISO/IEC 8348. Any organization requiring an identifier for use in constructing telecommunications addresses, e.g. ATM addresses, in accordance with the ISO 6523 ICD Format as specified in ISO/IEC 8348 may register with IOTA. IOTA identifiers may also be used for other purposes including the creation of object identifier component values using the identified-organization as specified in ISO/IEC 8824-1.

F.3 How can a registration authority obtain a Registration Authority Identifier?

In general, virtually every organization has already been assigned an organization code that is internationally unique; therefore, by default, they already have a Registration Authority Identifier. Per ISO/IEC 6523, and as illustrated in Figure A.1, the following scenarios will happen:

— Institutions like Dun & Bradstreet or SWIFT have been assigned International Code Designators (ICD) through the maintenance agency of ISO/IEC 6523.

Subsequently, the above institutions assign Organization Identifiers (RE: Identification of Organization) to their subscribing members

— Their members, subsequently, may assign Organization Part Identifiers (RE: Identification of Organization Part) to their internal organizational units if this is allowed for that particular ICD.

The concatenation of International Code Designator, Organization Identifier, and Organization Part Identifier thus creates an internationally unique Registration Authority Identifier.

F.4 Perhaps an automated maintenance system could be used so organizations, particularly those that participate in EDI, could register on line and obtain verification in a few minutes of the registration acceptance.

The scope of this document is to set the framework by which organizations may establish registration authorities dealing with administered items in their domains of interest. Registries set up by those registration authorities may use, in fact are encouraged to take advantage of, the available electronic means available to them.

F.5 There is some concern with making Registration Status and Administrative Status two separate pieces of information. "What will happen when a user relies upon an administered item because it is marked 'Standard' in the Registration Status, but the user does not notice that it is marked only 'draft' in the Administrative Status?

The recommended approach is to use the administrative status to reflect progression of the item to the next registration status, so the current registration status can always be relied upon. See C.4, D.2 and D.3 for example administrative statuses that can avoid such problems.

Registration status is reserved for use as a state and quality indicator for the metadata of an administered item being maintained in a metadata register. The public users at large, should be able to depend on the registration status to automatically take actions related to certain administered items. Administered items under review, unfortunately, possibly contain erroneous information and, thus, are possibly not dependable. The real issue here is whether those administered items that have not passed the administrative and technical reviews should be allowed in the "official" registry at all.

Let's assume that there is only one metadata register, and that the administrative status attribute will be subsumed by the registration status attribute as suggested above. Under this scenario, the attributes of all administered items applying for registration will be stored in the metadata register and granted a registration status, even before the review is complete. Let's further assume that a specific administered item is currently registered as "Qualified," and there is a new application, with updated information, to upgrade the same administered item to "Standard". Should the registrar then override the "Qualified" administered item with the updated information and change the Registration Status to "Standard"? The answer, should be negative. Data that have not passed the appropriate reviews should not be allowed to corrupt the "good" data. In other words, any administered items that do not meet the criteria for being granted one of the registration statuses, as specified in 4.3.2, should be logically (e.g. through views) or physically (e.g. in separate databases) separated from those that do. The registrars have to resolve this implementation issue based upon their available resources and technical approaches.

Under the scenario of two (logical or physical) metadata registers, one as an "official" metadata register and one as a work-in-process metadata register, there should not be any conflict between the registration status and the administrative status. If an administered item is still under review, it should be under a "work-in-process" metadata register and cannot have any registration status. Conversely, an administered item that is already assigned a registration status shall not have any administrative status, since all the administrative steps should have been completed. In real life, information professionals solve similar problems with a good configuration plan, staging the systems from a "development" environment to a "production" environment.

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