INTERNATIONAL STANDARD

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Information technology — Metadata registries (MDR) —

Part 5: Naming principles

Technologies de l'information — Registres de métadonnées (RM) — Partie 5: Principes de dénomination

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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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).

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, SC 32, *Data Management and Interchange*.

This third edition cancels and replaces the second edition (ISO/IEC 11179-5:2005), which has been technically revised.

ISO/IEC 11179 consists of the following parts, under the general title *Information Technology — Metadata registries (MDR)*:

— *Part 1: Framework*

— *Part 2: Classification*

— *Part 3: Registry metamodel and basic attributes*

— *Part 4: Formulation of data definitions*

— *Part 5: Naming principles*

— *Part 6: Registration*

Introduction

This part of ISO/IEC 11179 contains both principles and rules. Principles establish the premises on which the rules are based. Registry users may enforce rules as an application of this part of ISO/IEC 11179.

A naming convention is a convention (a set of rules) about names. Many naming conventions have much in common, whether it is defining a method of specifying names for common usage across application systems, or developing an organization's internal policy on the choice of XML tags for data interchange. A naming convention may be based on principles. In addition, it may contain formal and informal inputs, such as guidelines, recommendations, company policies, programming conventions, specifications, procedures, and so on. The purpose of this part of ISO/IEC 11179 is to describe and specify these common features of naming conventions. This part of ISO/IEC 11179 is intended to have broad applicability, including areas *outside* of Metadata Registries.

The goal of any naming convention is to allow development of names for items that have maximum clarity and transparency of meaning, combined with concision, demanding minimal effort of interpretation by the end user, subject to the constraints of the system under which the items are processed. A naming convention can be used to form names by which information about the data is expressed, in a simplified but still understandable grammar compared to natural language rules. Ideally, the names resemble summaries of the formal definition of the information being named.

In a metadata registry, one name may be designated as the "registry name," derived by describing the content of a metadata item in a structured way, using a set of rules, i.e. by application of a formalized naming convention. Other names for the same metadata entity may occur in any context. For example, these may be

— software system names,

— programming language names,

— report header names,

— data interchange (e.g. XML) names, and

— names in other natural languages.

Names may have varying levels of rigor applied to their formation and usage. The collection and display of all names used by any single metadata item can be a major benefit of a metadata registry. The process of deriving names from concept systems and arranging semantic components with a naming convention forms a set of consistent, meaningful registry names. Names from other contexts, which may or may not have been formed with naming conventions, and therefore may have little or no semantic content, are collected and related to the registry name, thus, contributing in a valuable way to enterprise data management.

Edition 3 of ISO/IEC 11179-3 uses the term *designation* in reference to most metamodel items except for the classes *Namespace* and *Naming Convention*. The designations for these classes were adopted in deference to commonly accepted usage. This part of ISO/IEC 11179 will continue to use the term *name* for constructs that, for purposes of this part of ISO/IEC 11179, are interchangeable with *designation*.

NOTE Items from the metamodel described in Edition 3 of ISO/IEC 11179-3 are italicized in this part of ISO/IEC 11179. Most multi-word designations also contain underscores between words in ISO/IEC 11179-3; the underscores have been omitted in this part of ISO/IEC 11179 for readability.

The naming principles and rules described in this part of ISO/IEC 11179 apply primarily to names of concepts, data element concepts, conceptual domains, data elements, and value domains, but can be extended to any registry content. Differing naming conventions may be applied to different sets of designatable items. This part of ISO/IEC 11179 should be used in conjunction with those which establish rules and procedures for attributing, classifying, defining, and registering items[1)].

1) Refer to 11179-6 Ed. 3 for a discussion of identification.

This part of ISO/IEC 11179 may be used for applications that are unrelated to ISO/IEC 11179-3, i.e. this part of ISO/IEC 11179 has broad applicability for use in describing naming conventions for almost any need or purpose. The same principles apply.

In Annex A, all of the examples are given with English terminologies. However, there is an intention that those rules be effective in other natural languages, even in those languages that use ideographs such as Japanese, Chinese, or Korean, when the terminologies used in the name are controlled properly. Annex B contains a version of the rules for Asian languages.

It is out of scope of the naming rules to establish semantic equivalence of names among different languages. Naming must be supplemented by other methods such as ontologies or controlled vocabularies in establishing semantic equivalence.

This part of ISO/IEC 11179 may be applied to ISO/IEC 11179-3, i.e. describing naming conventions associated with designations of designatable items and other features of the metamodel. The following are examples of designations in the metamodel: the designation of a data element (class name: Designation; attribute: sign); the designation of classification scheme name; etc. Annex C contains a Concordance Table relating items in this part of ISO/IEC 11179 to items in ISO/IEC 11179-3.

This part of ISO/IEC 11179 does not make requirements on any specific set of conventions, e.g. specific semantic, syntactic, or lexical requirements for names.

Information technology — Metadata registries (MDR) —

Part 5: Naming principles

1 Scope

This part of ISO/IEC 11179 provides instruction for naming of the following items, as defined in ISO/IEC 11179-3: concept, data element concept, conceptual domain, data element, and value domain. This part of ISO/IEC 11179 describes naming in a metadata registries (MDR); includes principles and rules by which naming conventions can be developed; and provides examples of naming conventions.

2 Conformance

2.1 Conformity for registries

2.1.1 Rules for a conforming registry

A registry containing a namespace associated with a set of designatable items which conform to naming conventions so that:

— each item shall be named in accordance with a naming convention,

— each naming convention shall have its scope documented,

— each naming convention shall have its authority documented,

— each naming convention should have its semantic rules documented,

— each naming convention should have its syntactic rules documented,

— each naming convention should have its lexical rules documented, and

— each naming convention should have its uniqueness rules documented,

then that namespace is in conformance with this part of 11179.

A registry in which every namespace conforms to this part of 11179 is a conforming registry.

2.1.2 Rules for a strictly conforming registry

A registry containing a namespace associated with a set of designatable items which conform to naming conventions so that:

— each item shall be named in accordance with a naming convention,

— each naming convention shall have its scope documented,

— each naming convention shall have its authority documented,

— each naming convention shall have its semantic rules documented,

— each naming convention shall have its syntactic rules documented,

— each naming convention shall have its lexical rules documented, and

— each naming convention shall have its uniqueness rules documented,

then that namespace is in strict conformance with this part of 11179.

A registry in which every namespace strictly conforms to this part of 11179 is a strictly conforming registry.

2.2 Conformity for systems

2.2.1 Rules for a conforming system

A system containing a namespace associated with a set of objects which conform to naming conventions so that:

— each item shall be named in accordance with a naming convention,

— each naming convention shall have its scope documented,

— each naming convention shall have its authority documented,

— each naming convention should have its semantic rules documented,

— each naming convention should have its syntactic rules documented,

— each naming convention should have its lexical rules documented, and

— each naming convention should have its uniqueness rules documented,

then that namespace is in conformance with this part of 11179.

A system in which every namespace conforms to this part of 11179 shall be a conforming system.

2.2.2 Rules for a strictly conforming system

A system containing a namespace associated with a set of objects which conform to naming conventions so that:

— each item shall be named in accordance with a naming convention,

— each naming convention shall have its scope documented,

— each naming convention shall have its authority documented,

— each naming convention shall have its semantic rules documented,

— each naming convention shall have its syntactic rules documented,

— each naming convention shall have its lexical rules documented, and

— each naming convention shall have its uniqueness rules documented,

then that namespace is in strict conformance with this part of 11179.

A system in which every namespace strictly conforms to this part of 11179 shall be a strictly conforming system.

3 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 11179-3, *Information technology — Metadata registries (MDR) — Part 3: Registry metamodel and basic attributes*