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Information technology — Metadata registries (MDR) —

Part 5: Naming and identification principles

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

Partie 5: Principes de dénomination et d'identification

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Contents

Page

Foreword ... iv

1 Scope ... 1

2 Normative references ... 1

3 Terms and definitions ... 2

4 Data Identifiers within a registry ... 3

5 Identification ... 3

6 Names ... 4
6.1 Names in a registry ... 4
6.2 Naming conventions ... 4

7 Development of naming conventions ... 5
7.1 Introduction ... 5
7.2 Scope principle ... 5
7.3 Authority principle ... 5
7.4 Semantic principle ... 5
7.5 Syntactic principle ... 6
7.6 Lexical principle ... 6
7.7 Uniqueness principle ... 6

Annex A (informative) **Example naming conventions for names within an MDR registry** ... 7

Annex B (informative) **Example naming conventions for Asian languages** ... 16

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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.

ISO/IEC 11179-5 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

This second edition cancels and replaces the first edition (ISO/IEC 11179-5:1995), 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 and identification principles*

— *Part 6: Registration*

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Information technology — Metadata registries (MDR) —

Part 5:
Naming and identification principles

1 Scope

This part of ISO/IEC 11179 provides instruction for naming and identification of the following administered items: data element concept, conceptual domain, data element, and value domain. It describes the parts and structure of identification. Identification is narrowly defined to encompass only the means to establish unique identification of these administered items within a register. It describes naming in an MDR; includes principles and rules by which naming conventions can be developed; and describes example naming conventions. The naming principles and rules described herein apply primarily to names of data element concepts, conceptual domains, data elements, and value domains. When "administered item" is used in this part of ISO/IEC 11179, it is understood to refer specifically to these four items. This part of ISO/IEC 11179 should be used in conjunction with those that establish rules and procedures for attributing, classifying, defining, and registering administered items.

In Annex A, all of the examples are given with English terminologies. However, there is an intention that those rules be effective in other national 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 the naming among different languages. Naming must be supplemented by other methods such as ontologies or controlled vocabularies in establishing semantic equivalence.

2 Normative references

The following referenced documents are indispensable for the application 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 11179-1, *Information technology — Metadata registries (MDR) — Part 1: Framework*

ISO/IEC 11179-2, *Information technology — Metadata registries (MDR) — Part 2: Classification*[1)]

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

ISO/IEC 11179-6, *Information technology — Metadata registries (MDR) — Part 6: Registration*

1) To be published. Revision of ISO/IEC 11179-2:2000

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 11179-1, ISO/IEC 11179-2, ISO/IEC 11179-3, ISO/IEC 11179-6, and the following apply.

3.1
administered item
registry item for which administrative information is recorded in an Administration Record
[ISO/IEC 11179-3:2003]

3.2
context
universe of discourse in which a name or definition is used
[ISO/IEC 11179-3:2003]

3.3
lexical
pertaining to words or the vocabulary of a language as distinguished from its grammar and construction

3.4
name
designation of an object by a linguistic expression
[ISO/IEC 11179-3:2003]

3.5
name part
part of name
discrete term that is used as part of a name of an administered item

3.6
naming convention
set of rules for creating names and their associations

3.7
object class term
part of the name of an administered item which represents the object class to which it belongs, for those administered items containing object classes

3.8
principle
fundamental, primary assertion which constitutes a source of action determining particular objectives or results

NOTE A principle is usually supported through one or more rules.

3.9
property term
part of the name of an administered item that expresses a property of an object class, for those administered items containing property classes

3.10
qualifier term
word or words that differentiate a concept

3.11
representation term
designation of an instance of a representation class

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3.12
rule
statement governing conduct, procedure, conditions and/or relations

3.13
semantics
branch of linguistic science that deals with the meanings of words

3.14
separator
symbol or space enclosing or separating a part within a name; a delimiter

3.15
structure set
concepts in an area of discourse, with their relationships to other concepts; examples include data models, taxonomies, and ontologies

3.16
syntax
relationships among characters or groups of characters, independent of their meanings or the manner of their interpretation and use; the structure of expressions in a language, and the rules governing the structure of a language

4 Data Identifiers within a registry

Each administered item shall have a unique data identifier within the register of a Registration Authority.

The combination of registration authority identifier, data identifier, and version identifier shall constitute a unique identification of an administered item. See ISO/IEC 11179-6 for detailed information.

A data identifier is assigned for any administered item that is registered. Concurrently, or thereafter, the administered item may be

— classified according to ISO/IEC 11179-2,

— specified according to ISO/IEC 11179-3:2003,

— defined according to ISO/IEC 11179-4,

— named according to ISO/IEC 11179-5, and

— registered according to ISO/IEC 11179-6.

5 Identification

The registration authority identifier (RAI), data identifier (DI), and version identifier (VI) constitute the international registration data identifier (IRDI). An IRDI is required for an administered item. Data identifiers are assigned by a Registration Authority; data identifiers shall be unique within the domain of a Registration Authority. Requirements for a Registration Authority, and a discussion of the IRDI, appear in ISO/IEC 11179-6.

As each Registration Authority may determine its own DI assignment scheme, there is no guarantee that the DI by itself will uniquely identify an administered item. For example, if two RAs both use sequential 6-digit numbers, there may be two administered items with the same DI's; however, the administered items will almost certainly not be the same. Both the DI and the RAI are necessary for identification of an administered item.

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If particular attributes of an administered item change, then a new version of the administered item shall be created and registered. The registrar shall determine these attributes. In such a case, a VI is required to complete the unique identification of an administered item. For further guidance, see ISO/IEC 11179-6.

An IRDI can serve as a key when exchanging data among information systems, organizations, or other parties who wish to share a specific administered item, but might not utilize the same names or contexts.

ISO/IEC 11179 does not specify the format or content of a unique DI.

6 Names

6.1 Names in a registry

An administered item shall have at least one name within a registry of a Registration Authority. If there are other names by which the administered item is known, preferred names may be identified. Any administered item in the Registry can be subject to naming conventions. The annexes show examples of naming conventions applied to several administered items. Others can be developed by extension of the Principles.

An administered item shall have at least one name within a context. See ISO/IEC 11179-3 for detailed information.

6.2 Naming conventions

Each name for an administered item is specified within a context. A naming convention describes what is known about how names are formulated. A naming convention may be simply descriptive; e.g., where the Registration Authority has no control over the formulation of names for a specific context and merely registers names that already exist. Alternatively, a naming convention may be prescriptive, specifying how names shall be formulated, with the Registration Authority (or an equivalent authority) expected to enforce compliance with the naming convention. The objectives of a prescriptive naming convention may include name consistency, name appearance, and name semantics. An effective naming convention can also enforce the exclusion of irrelevant facts about the administered item from the name, such as the input source of a data element or its field position in a file.

A naming convention may be specified in a reference document. A naming convention shall cover all relevant documentation aspects. This includes, as applicable,

— the scope of the naming convention, e.g. established industry name;

— the authority that establishes names;

— semantic rules governing the source and content of the terms used in a name, e.g. terms derived from data models, terms commonly used in the discipline, etc.;

— syntactic rules covering required term order;

— lexical rules covering controlled term lists, name length, character set, language;

— a rule establishing whether or not names must be unique.

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7 Development of naming conventions

7.1 Introduction

This clause lists principles used to develop a naming convention. Rules are derived from the principles; these rules form a naming convention. Syntactic, semantic and lexical rules vary by organizations such as corporations or standards-setting bodies for business sectors; each can establish rules for name formation within its context(s). Annexes A and B contain examples of rules for naming conventions that are consistent with the principles presented in this clause.

Descriptive naming conventions may be applied to administered items which are not under the control of the Registration Authority for the registry, or other authority previous to entry in the registry. At a minimum, the rules for scope and authority should be documented. As appropriate, the semantic, syntactic, lexical, and uniqueness rules may be recorded.

In addition to the scope and authority rules needed to document descriptive naming conventions, prescriptive conventions should be documented by semantic, syntactic, lexical, and uniqueness rules.

— Semantic rules enable meaning to be conveyed.

— Syntactic rules relate items in a consistent, specified order.

— Lexical (word form and vocabulary) rules reduce redundancy and increase precision.

— A uniqueness rule documents how to prevent homonyms occurring within the scope of the naming convention.

The examples in Annex A show how the names of each of the administered items can be formed from a set of items selected from sets of available terms for the naming convention. (The names of other administered items may be formed by rules based on those described in this part of ISO/IEC 11179.) The names of these items can be developed from the names of the administered items from which they are composed, each assigned meaning (semantics) and relative or absolute position (syntax) within a name. They may, but need not, be delimited by a separator symbol. The names may be subject to lexical rules. An authority, e.g., a data manager within a corporation or an approving committee for an international business sector naming standard, should control the set or range of values of each item.

7.2 Scope principle

The scope of a naming convention specifies the range within which it is in effect. In terms of the MDR, the scope of a naming convention may be as broad or narrow as the Registration Authority, or other authority, determines is appropriate. The scope should document whether the naming convention is descriptive or prescriptive.

The scope of each naming convention represented in the MDR shall be documented.

7.3 Authority principle

Identification of the authority that assigns names or enforces the naming convention is necessary for full documentation of the naming convention.

The Authority of each naming convention represented in the MDR shall be documented.

7.4 Semantic principle

Semantics concerns the meanings of name parts and possibly separators that delimit them. The set of semantic rules documents whether or not names convey meaning, and if so, how.

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Name parts may be derived from structure sets that identify relationships among (classify) members. See Annex A for examples of semantic rule sets.

The semantic rules of each naming convention represented in the MDR should be documented.

7.5 Syntactic principle

Syntax specifies the arrangement of parts within a name. The arrangement may be specified as relative or absolute, or some combination of the two.

Relative arrangement specifies parts in terms of other parts, e.g., a rule within a convention might require that a qualifier term must always appear before the part being qualified appears.

Absolute arrangement specifies a fixed occurrence of the part, e.g., a rule might require that the property term is always the last part of a name.

The syntactic rules of each naming convention represented in the MDR should be documented.

See Annex A for examples of syntactic rule sets.

7.6 Lexical principle

Lexical issues concern the appearance of names: preferred and non-preferred terms, synonyms, abbreviations, part length, spelling, permissible character set, case sensitivity, etc. The result of applying lexical rules should be that all names governed by a specific naming convention have a consistent appearance.

The lexical rules of each naming convention represented in the MDR should be documented.

See Annex A for examples of lexical rule sets.

7.7 Uniqueness principle

There may or may not be requirements for names to be unique within their scope. The uniqueness rules for names represented in the MDR should be documented.

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Annex A
(informative)

Example naming conventions for names within an MDR registry

A.1 General

The rules are derived from the principles described in clause 7. Examples are included. They show the formation of names within registries, and may be applied to the development of names within contexts at the discretion of the subject area authority. The complete process produces a data element name; other administered item names are developed during the process.

These examples are written as American English. Users of other languages may specify different or additional semantic, syntactic and lexical rules as needed to customize naming conventions to their languages. For example, a rule citing an authority for spelling words within terms might be added to the lexical rules. Annex B shows examples in Asian languages.

A.2 Semantics of name parts

Name parts consist of discrete terms. The terms in this annex are derived from administered items in the MDR metamodel described in ISO/IEC 11179-3. These are: object class terms, property terms, representation terms, and qualifier terms. As these terms are optional in the MDR metamodel, they are presented as examples of the application of semantic principles to name formation.

Object class term

In the MDR metamodel, an object class is a set of ideas, abstractions or things in the real world that are identified with explicit boundaries and meaning, and whose properties and behaviour follow the same rules. Each object class has a name. The registration of object classes in a registry is optional, but if used, the set of actual and potential object class names provides a taxonomy of object class terms.

An object class term may be a part of the name of the administered items conceptual domain, data element concept and data element, and represents an activity or object in a context. Use of a modelling methodology, as for instance an Entity Relationship Diagram (ERD) or object model, is a way to locate and discretely place administered items in relation to their higher-level model entities. The attributes of entity-relationship model entities equate to administered items that are related to each other through further application of the methodology. In an object model, data elements are expressed as object attributes.

Models provide one kind of classification scheme for administered items. Administered items which contain object classes may be identified with their related modelling entities by mapping the object class term to the model entity name. In ISO/IEC 11179-1:1999, Annex A provides examples of the mapping between object class terms and ERD and object model entities.

In the data element names

Employee Last Name

Cost Budget Period Total Amount

Tree Height Measure

Member Last Name

the terms Employee, Cost, Tree, and Member are object class terms.

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Object class terms may be used by themselves as conceptual domain names.

Property term

In the MDR metamodel, a Property is a characteristic common to all members of an object class. Each property has a name. The registration of properties in a registry is optional, but if used, the set of actual and potential property names provides a taxonomy of property terms.

A set of property terms may be composed from a set of name parts in a property taxonomy. This set should consist of terms that are discrete (the definition of each does not overlap the definition of any other), and complete (taken together, the set represents all information concepts required for the specification of administered items which use properties, such as data elements, data element concepts and value domains).

In the data element names

Employee Last Name

Cost Budget Period Total Amount

Member Last Name

Tree Height Measure

the terms Last Name, Total Amount, and Height are properties.

Using terms from two structure sets provides a complementary way of categorization. Both object class and property terms of data element concepts and data elements are utilized to form a name that contains vital information about these administered items, and also excludes extraneous or irrational elements that may be introduced when no conventions are employed. Data element concept names may be composed by combining object class terms and property terms.

Representation term

A representation term may be a part of an administered item name that describes the form of representation of an administered item that includes representation: data elements and value domains. Each term may be developed from a controlled word list or taxonomy. In the MDR metamodel, a Representation Class is the classification of types of representation. Each representation class has a name. The registration of representation classes in a registry is optional, but if used, the set of actual and potential representation class names provides a taxonomy of representation class terms.

Representation terms categorize forms of representation such as

- Name - Amount
- Measure - Number …
- Quantity - Text

This term describes the form of the set of valid values of an administered item which includes representation. Often, the representation term may be redundant with part of the property term. When this occurs, one term or part of one term may be eliminated in a structured name. This can be established as a rule in a naming convention.

Using the above rules, a data element describing a measurement of the height of a tree would have the data element name Tree Height Measure. The word Measure is the data element's representation term. However, a data element that describes the last name of a person would have the data element name of Person Last Name Name. The second word Name is the data element's representation term. However, to promote clarity, one occurrence of the redundant word is removed.

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Qualifier term

Qualifier terms may be attached to object class terms, property terms, and representation terms if necessary to distinguish one data element concept, conceptual domain, data element, or data value domain from another. These qualifier terms may be derived from structure sets specific to a context. In the rules for a naming convention, a restriction in the number of qualifier terms is recommended.

For example, in the data element name

Cost Budget Period Total Amount

the term Budget Period is a qualifier term.

NOTE Limitations in the form of permitted terms of qualifiers help reduce redundancy and increase incidence of data reuse by eliminating synonyms. This applies also to object class terms, property terms, and representation terms. A mechanism such as a thesaurus of terms facilitates this effort.

Semantics of separators

Various kinds of punctuation connect name parts, including separators such as spaces and hyphens, and grouping symbols such as parentheses. These may have:

a) No semantic meaning. A naming rule may state that separators will consist of one blank space or exactly one special character (for example a hyphen or underscore) regardless of semantic relationships of parts. Such a rule simplifies name formation.

b) Semantic meaning. Separators can convey semantic meaning by, for example, assigning a different separator between words in the qualifier term from the separator that separates words in the other part terms. In this way, the separator identifies the qualifier term clearly as different from the rest of the name.

   For example, in the data element name

   Cost_Budget-Period_Total_Amount

   the separator between words in the qualifier term is a hyphen; other name parts are separated by underscores.

Some languages, such as German and Dutch, commonly join grammatical constructs together in a single word (resulting in one word which in English or French might be a phrase consisting of nouns and adjectives). These languages could use a separator that is not a break between words, such as a hyphen, space or underscore, but instead capitalize the first letter of each name part within a single word (sometimes called CamelCase). This naming convention is also commonly used in programming languages such as C++ and Java.

Asian languages often form words using two characters which, separately, have different meanings, but when joined together have a third meaning unrelated to its parts. This may pose a problem in the interpretation of a name because ambiguity may be created by the juxtaposition of characters. A possible solution is to use one separator to distinguish when two characters form a single word, and another when they are individual words.

The following table indicates which name parts are combined to form administrative item names. See A.4 for examples of administered items with related names.

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Table A.1 — Relationship of name parts to administered item names

	Conceptual Domains	Data Element Concepts	Data Elements	Value Domains
Object Class Terms		×	x	
Property Terms		×	×	
Representation Terms			×	×
Qualifier Terms	×	×	×	×

A.3 Example of complete rule sets for naming conventions

These rules implement the semantics described above and combine them with other rules based on principles from clause 7.

Example rule sets for registry names

Name: MDR Registry Name

Context: Registry preferred name

Scope: MDR Example Registry

Authority: ISO/IEC SC 32/WG 2

Semantic rules:

a) Object classes represent things of interest in a universe of discourse that may, for instance, be found in a model of that universe.

EXAMPLE Cost

b) One and only one object class term shall be present.

c) Property terms shall be derived from the property system structure set and represent a characteristic of the object class.

EXAMPLE Total Amount

d) One and only one property term shall be present.

NOTE The combination of object class term and property term forms the names for data element concepts.

e) Qualifiers may be derived as determined by the subject area authority and will be added as needed to make the name unique within a specified context. The order of the qualifier terms is not significant. Qualifier terms are optional.

EXAMPLE Budget Period

f) The representation of the valid value set of a data element or value domain is described by the representation term.

g) One and only one representation term shall be present.

EXAMPLE Amount

NOTE Representation terms, usually with added qualifiers, form value domain names.

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Syntactic rules:

a) The object class term shall occupy the first (leftmost) position in the name.

b) Qualifier terms shall preceed the part qualified. The order of qualifiers shall not be used to differentiate names.

c) The property term shall occupy the next position.

d) The representation term shall occupy the last position. If any word in the representation term is redundant with any word in the property term, one occurrence will be deleted.

EXAMPLE Cost Budget Period Total Amount

Lexical rules:

a) Nouns are used in singular form only. Verbs (if any) are in the present tense.

b) Name parts and words in multi-word terms are separated by spaces. No special characters are allowed.

c) All words in the name are in mixed case. The rules of “mixed case” are defined by the RA. These rules may by different for different parts of the administered item name (object class, property, representation class).

d) Abbreviations, acronyms, and initialisms are allowed.

EXAMPLE Cost Budget Period Total Amount

Uniqueness rule:

All names in each language shall be unique within this context.

A.4 Example rule sets for data element names within XML tags

"XML namespaces provide a simple method for qualifying element and attribute names used in Extensible Markup Language documents by associating them with namespaces identified by IRI references."[2)] This is done by assigning a prefix to the element and attribute names. The following example shows how this rule may be applied within a naming convention.

These rules are derived from the principles described in Clause 7. The first example differs from the rules described above only in the application of XML-specific lexical restrictions.

Name: XML tag name

Context: XML schema for reports

Scope: All element and attribute names in XML DTD's

Authority: XML data administrator

2) *Namespaces in XML 1.1*, W3C Proposed Recommendation 05, November 2003: http://www.w3.org/TR/2003/PR-xml-names11-20031105/

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Semantic rules:

a) Object classes represent things of interest in a universe of discourse that may, for instance, be found in a model of that universe.

EXAMPLE Cost

b) One and only one object class term shall be present.

c) Property terms shall be derived from the property system structure set and represent a characteristic of the object class.

EXAMPLE Total Amount

d) One and only one property term shall be present.

e) Qualifiers may be derived as determined by the subject area authority and will be added as needed to make the name unique within a specified context. The order of the qualifier terms is not significant. Qualifier terms are optional.

EXAMPLE Budget Period

f) The representation of the valid value set of the data element is described by the representation term.

g) One and only one representation term shall be present.

EXAMPLE Amount

Syntactic rules:

a) The object class term shall occupy the first (leftmost) position in the name.

b) Qualifier terms shall precede the part qualified. The order of qualifiers shall not be used to differentiate data element names.

c) The property term shall occupy the next position.

d) The representation term shall occupy the last position. If any word in the representation term is redundant with any word in the property term, one occurrence will be deleted.

EXAMPLE Cost Budget Period Total Amount

Lexical rules:

a) Nouns are used in singular form only, unless the concept itself is plural. Verbs (if any) are in the present tense.

b) Name parts are separated by capitalizing the first character of the second thru *n*th word.

c) All words in the name are in mixed case.

d) Abbreviations, acronyms, and initialisms are allowed only when used normally within business terms.

e) Words contain letters and numbers only.

EXAMPLE CostBudgetPeriodTotalAmount

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Uniqueness rule:

All names shall be unique within a DTD.

Usage Examples

In this example, a data element name is used in an XML element tag

< !ELEMENT CostBudgetPeriodTotalAmount (#PCDATA) >

An additional example can be developed to show the use of prefixes to identify the namespace to which an XML schema element or attribute is assigned. An additional semantic rule is defined:

h) Not more than one namespace indicator shall be present.

An additional syntactic rule is defined:

e) If a namespace indicator is used, it shall precede all other terms.

And an additional lexical rule is defined:

f) A namespace indicator is in lowercase and is separated from the other terms by a colon.

Example of an XML name using a namespace indicator:

< !ELEMENT acct:CostBudgetPeriodTotalAmount >

A.5 Attributed example of a data element

The table below presents an attributed example of a data element with all administered item derivations named. Specifically, this data element is derived from:

data element concept: Country Identifier

composed of occurrences of the

conceptual domain: Country

and its

value domain: ISO English-Language Country Short Name.

Three names are provided for this data element example: the registry name: Country Mailing Address Name; a name which appears in an application system, the convention for which requires separators with semantic meaning: Country.Mailing_Address.Name; and an XML Schema name, which employs a prefix identifying the namespace in which the name is included: addr:CountryMailingAddressName.

Semantic, syntactic and lexical rules are assumed to be documented elsewhere.

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Metadata Attribute Name		Application System
1	**Data Element Definition**	
	Data Element (DE) Definition Context	Registry
	DE Definition	The name of the country where a mail piece is delivered.
	DE Definition Context	Facility Data System
	DE Definition	The name of a country where the addressee is located.
	DE Definition Context	XML Address Schema
	DE Definition	The name of the country in an address.
2	**Permissible Values and Value Domain**	
	Permissible Values (each PV)	All English-language short country names from ISO 3166, matched with value meanings. (recorded as: Afghanistan, Albania,....., Zimbabwe)
	PV Begin Date (each PV)	19970110
	PV End Date (each PV)	(Not applicable)
	Value Domain (VD) Context	Registry
	VD Entry Name	ISO English-Language Country Short Name
	VD Definition	All short, ISO-recognized English-language names of all countries.
	VD Description	(Not applicable)
	VD Entry Identifier	{RAI} 5678:1
	Datatype	CHARACTER VARYING
	Datatype Schema/Source	ANSI ISO SQL
	Maximum Characters	44
	Format	(Not applicable)
	Unit of Measure	(Not applicable)
	Precision	(Not applicable)
	VD Origin	ISO 3166-1:1997
	VD Explanatory Comment	The value domain includes only the subset of names that designate countries; it does not include names of territories.
3	**Representation Class Attributes**	
	Representation Class	Name
	Representation Class Qualifier	Short
4	**Data Element Name and Identifier**	
	DE Name	Country Mailing Address Name
	DE Name Context	Registry
	NC Name	Registry Preferred Naming Convention
	DE Name	Country.Mailing_Address.Name
	DE Name Context	Facility Data System
	NC Name	Facility Data System Naming Convention
	DE Name	addr:CountryAddressMailingName
	DE Name Context	XML Address Schema
	NC Name	XML Schema Naming Convention
	DE Entry Identifier	{RAI} 5394:1

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Metadata Attribute Name		Application System
5	**Other Data Element Attributes**	
	DE Example	Denmark
	DE Origin	Application system
	DE Comment	This data element is required for delivery of mail outside the country of origin.
	Submitting organization	Office of Enforcement and Compliance Assurance
	Stewardship Contact	Facility Data Systems Administrator
6	**Data Element Concept and Conceptual Domain**	
	Data Element Concept (DEC) Context	Registry
	DEC Name	Country Identifier
	DEC Definition	An identifier for a primary geopolitical entity of the world.
	Object Class	Country
	Object Class Qualifier	Mailing Address
	Property	Identifier
	Property Qualifier	(None)
	DEC Entry Identifier	{RAI}12468:1
	Conceptual Domain (CD) Context	Registry
	CD Name	Country
	CD Definition	The primary geopolitical entities of the world.
	CD Entry Identifier	{RAI} 2468:1
	CD Origin	ISO 3166:1
	Value Meaning (for each VM)	The primary geopolitical entity known as <China>
	VM Begin Date (for each VM)	19970110
	VM End Date (for each VM)	(Not applicable)
	VM Identifier (for each VM)	<Assigned by system as 1001…1230: one to each VM>
7	**Classification Type Examples**	**Classification Values for Classification Type**
	Keyword	Country, Address, Mailing
	Group	Mailing Address
	Object	Address, Country
	Layer of Abstraction Type	Specialization
8	**Registration and Administrative Status**	
	DE Registration Status	Recorded
	DE Administrative Status	In Quality Review
	VD Registration Status	Standard
	VD Administrative Status	Final
	DEC Registration Status	Recorded
	DEC Administrative Status	In Quality Review
	CD Registration Status	Standard
	CD Administrative Status	Final

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Annex B
(informative)

Example naming conventions for Asian languages

These rules are derived from the principles in Clause 7. Examples described here are the same as in Annex A.

Asian language often form words using two characters which, separately, have different meanings, but when joined together have a third meaning unrelated to its parts. This may pose a problem in the interpretation of a name because ambiguity may be created by the juxtaposition of characters.

These examples are written as American English, Japanese, Korean and Chinese.

NOTE In order to read Asia text of the examples, readers must have Asian character sets installed.

Semantic rules:

a) Object classes represent things of interest in a universe of discourse that may, for instance, be found in a model of that universe.

EXAMPLE

— English: Cost
— Japanese: 経費
— Korean: 비용
— Chinese: 成本

b) One and only one object class term shall be present.

c) Property terms shall be derived from the property system structure set and represent the category of the data.

EXAMPLE

— English: Total Amount
— Japanese: 総計
— Korean: 총합계
— Chinese:总金额

d) One and only one property term shall be present.

NOTE The combination of object class term and property term forms the names for data element concepts.

e) Qualifiers may be derived as determined by the subject area authority and will be added as needed to make the name unique within a specified context. The order of the qualifier terms is not significant. Qualifier terms are optional.

EXAMPLE

— English: Budget Period
— Japanese: 予算期間
— Korean: 예산기간
— Chinese: 预算期间

f) The representation of the valid value set of a data element or value domain is described by the representation term.

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g) One and only one representation term shall be present.

EXAMPLE

— English: Amount

— Japanese: 計

— Korean: 합계

— Chinese:金额

NOTE Representation terms, usually with added qualifiers, form value domain names.

Syntactic rules:

a) The object class term shall occupy the first (leftmost) position in the name.

b) Qualifier terms shall precede the part qualified. The order of qualifiers shall not be used to differentiate name.

c) The property term shall occupy the next position.

d) The representation term shall occupy the last position. If any word in the representation term is redundant with any word in the property term, one occurrence will be deleted.

EXAMPLE

— English: Cost Budget Period Total Amount

— Japanese: 経費予算期間総計 or 経費・予算期間・総計

— Korean: 예산기간비용합계

— Chinese:成本预算期间总金额

Lexical rules:

a) Nouns are used in singular form only. Verbs (if any) are in the present tense.

NOTE In Japanese, this rule shall not be applied because of no plural form of nouns and no distinction of verb tense.

b) Name items and words in multi-word terms are separated by spaces. No special characters are allowed.

NOTE In Japanese, as multi-word terms are naturally expressed without spaces, any characters shall not be allowed or a dot character may be used for separating those terms.

c) All words in the name are in mixed case.

NOTE In Japanese, all words in the name are in mixed case of Zen-kaku and Han-kaku.

d) Abbreviations, acronyms, and initialisms are allowed.

EXAMPLE

— English: Cost Budget Period Total Amount

— Japanese: 経費予算期間総計 or 経費・予算期間・総計

— Korean: 예산기간비용합계

— Chinese: 成本预算期间总金额

Uniqueness rule:

All names in each language shall be unique within this context.

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