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AMENDMENT 1  
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**Information technology — Metadata  
registries (MDR) —**

**Part 3:  
Registry metamodel and basic  
attributes**

**AMENDMENT 1**

*Technologies de l'information — Registres de métadonnées (RM) —  
Partie 3: Métamodèle de registre et attributs de base  
AMENDEMENT 1*



Reference number  
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# Information technology — Metadata registries (MDR) —

## Part 3: Registry metamodel and basic attributes

### AMENDMENT 1

#### 3.1, 3.2

Change all references to "*datatype* (3.1.8)" to "*datatype* (3.1.9)".

#### 3.1.13

Change the reference in the source from "7.3.37" to "7.3.38".

#### 3.2.9

Replace the definition with:

*attribute* (3.1.4) of a *metadata item* (3.2.75) commonly needed in its specification

#### 3.2.50

Replace the definition with:

*metadata item* (3.2.75) which can have *designations* (3.2.51) and/or *definitions* (3.2.40)

#### 3.2.75

In NOTE 1, replace 'Clauses 5 through 11' with 'Clauses 9 through 11'.

#### 3.2.76

In the NOTE, replace 'Clauses 5 through 11' with 'Clauses 9 through 11'.

#### 3.2.96

Replace the existing NOTE by the following:

Note 1 to entry: Permissible values may be specified either as part of a *value domain* (3.2.140), or only associated with a *value meaning* (3.2.141).

Note 2 to entry: Within a value domain, permissible values may either be enumerated or described.

Note 3 to entry: Explicit mapping of a single permissible value to a single value meaning is possible only when both the value meaning and permissible value are enumerated, e.g. for code sets. For described permissible values, the described meaning might be associated with a range of values, e.g. weight in kilograms.

### 3.2.105

Replace the definition with the following:

*identified\_item* (3.2.64) that is recorded and managed in a *metadata registry* (3.2.78)

### 3.2.138

In NOTE 2, replace 'must' with 'shall'.

## 3.2

Add the following new terms and definitions:

### 3.2.143

#### **conceptual domain definition**

formal definition of a *defined conceptual domain* (3.2.144)

Note 1 to entry: The definition may reference externally enumerated value meanings.

### 3.2.144

#### **defined conceptual domain**

conceptual domain (3.2.21) that is specified by a formal definition

Note 1 to entry: The definition may reference externally enumerated value meanings.

### 3.2.145

#### **defined value domain**

value domain (3.2.140) that is specified by reference to an external specification

Note 1 to entry: The external specification should enumerate the permissible values.

### 3.3.24

Replace 'XTML' with 'XTM'.

### *Clauses 4 through 12*

Replace all occurrences of 'must' in normative text with 'shall', except for:

- 7.3.2.7.2.4 where 'must' should simply be deleted;
- 9.1.2.5.3.1 where 'must' is correct;
- 11.1.1 replace 'must' with 'should';
- 11.4.2.3.2 where 'must' is correct;
- Annexes C, D and F, which are informative.

4.2.2

Replace the whole subclause with the following:

A strictly conforming implementation:

- a) shall support all mandatory, optional and conditional classes, attributes and associations;
- b) shall not use, test, access, or probe for any extension features nor extensions to classes, attributes and/or associations;
- c) shall not recognize, nor act on, nor allow the production of classes, attributes and/or associations that are dependent on any unspecified, undefined, or implementation-defined behaviour.

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

4.3

Rename 4.3 to 'Conformance by feature'.

Append:

", or to specific features within these clauses"

at the end of the first sentence of 4.3.

4.4.2

Add the following NOTE at the end of 4.4.2:

NOTE The additional provisions specified in the above profiles apply only to these profiles, and not to conformance by feature in 4.3.

5.4

Replace the sentence:

"Clauses 6 through 11 of this part of ISO/IEC 11179 specify the types of *metadata objects* that form the structure of a *metadata registry*."

With:

"Clauses 6 through 8 of this part of ISO/IEC 11179 specify common facilities that form the core of a *metadata registry* and which apply to potentially any type of registry content. Clauses 9 through 11 of this part of ISO/IEC 11179 specify the types of *metadata objects* that form the potential content of a *metadata registry*."

5.5.1, list item 2, NOTE

Replace the reference to ISO/IEC 19763-2 with ISO/IEC 19763-10.

Clause 6 (except 6.3.3.1 and 6.3.5.1, see below), and 7.3.2.1:

Change all references to "*datatype* (3.1.8)" to "*datatype* (3.1.9)".

6.3.3.1 and 6.3.5.1

Change all references to "composite *datatype* (3.1.8)" to "*composite datatype* (3.1.7)".

8.1.1, paragraph 1

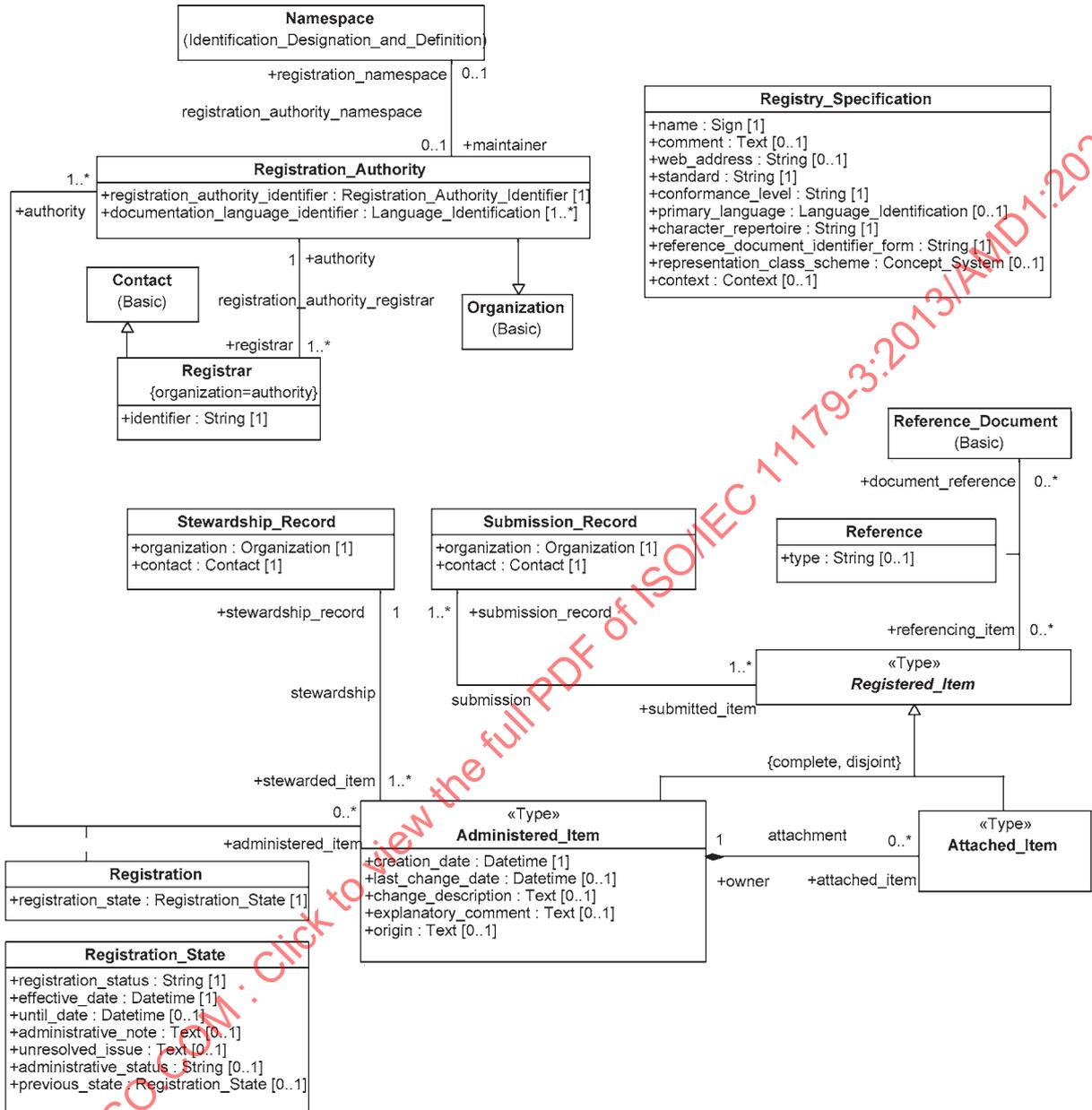
Replace the second sentence with the following:

ISO/IEC 11179-6 further describes the registration of *Registered\_Items* (8.1.2.1), *Administered\_Items* (8.1.2.2) and *Attached\_Items* (8.1.2.3).

8.1.1, Figure 7

Replace Figure 7 with the following:

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8.1.2.9.1, list item 1, and Annex A, name (attribute of Registry\_Specification)

Replace the reference to 8.1.2.9.2.1.1 with 8.1.2.9.2.1.

8.1.2.9.2

Change the subclause number of 8.1.2.9.2.1.1 to 8.1.2.9.2.1.

8.1.5.1.1, paragraph 1

Insert the following after the first sentence:

The association has two roles:

- authority (verb form: has\_authority) which references a *Registration\_Authority* class;
- administered\_item (verb form: for\_administered\_item) which references an *Administered\_Item* class.

An authority may have zero or more administered\_items. An administered\_item shall have one or more authorities.

8.1.5.2.1, paragraph 1

Insert the following after the first sentence:

The association has two roles:

- document\_reference (verb form: has\_document\_reference) which references a *Reference\_Document* class;
- referencing\_item (verb form: is\_referencing\_item) which references a *Registered\_Item* class.

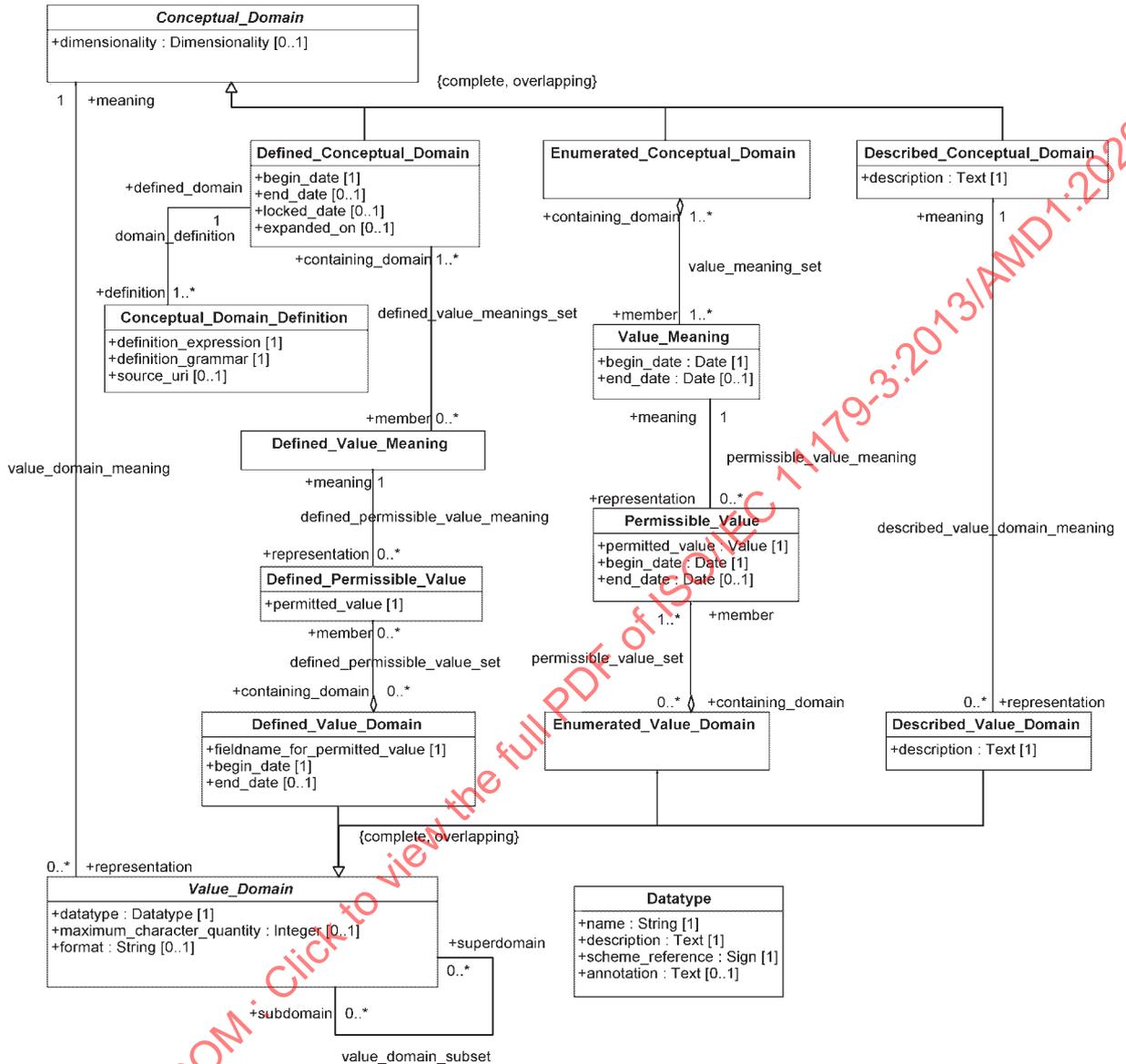
A document\_reference may have zero or more referencing\_items. A referencing\_item may have zero or more document\_references.

11.2.2.3.2, paragraph 1

In the last sentence, replace "in the form of" with "by".

11.3.1, Figure 13

Replace Figure 13 with the following:



11.3.2.5.2.3

Designate the existing NOTE as NOTE 1, and add the following NOTE:

NOTE 2 *maximum\_character\_quantity* is intended to be specified primarily for described value domains. If specified for enumerated\_value\_domains, care should be taken to ensure the specified value is consistent with the enumerated permissible values.

11.3.2.9

At the end of 11.3.2.9, insert subclauses 11.3.2.10 through 11.3.2.14:

**11.3.2.10 Conceptual\_Domain\_Definition class**

**11.3.2.10.1 Description of Conceptual\_Domain\_Definition**

*Conceptual\_Domain\_Definition* is a class, each instance of which models a *conceptual domain definition* (3.2.144), a formal definition of a *defined conceptual domain* (3.2.145).

*Conceptual\_Domain\_Definition* shall participate in a *domain\_definition* association (11.3.37) with exactly one *Defined\_Conceptual\_Domain* (11.3.2.11).

**11.3.2.10.2 Attributes of Conceptual\_Domain\_Definition**

**11.3.2.10.2.1 definition\_expression**

Attribute name: *definition\_expression*

Definition: formal definition of the conceptual\_domain expressed in some formal grammar

Obligation: Mandatory

Multiplicity: 1

Datatype: *Text* (6.2.12)

**11.3.2.10.2.2 definition\_grammar**

Attribute name: *definition\_grammar*

Definition: name of the grammar used in *definition\_expression*

Obligation: Mandatory

Multiplicity: 1

Datatype: *String* (6.2.11)

**11.3.2.10.2.3 source\_uri**

Attribute name: *source\_uri*

Definition: Uri for the source of the *Conceptual\_Domain\_Definition*

Obligation: Optional

Multiplicity: 0..1

Datatype: *String* (6.2.11)

— End of attributes of *Conceptual\_Domain\_Definition* —

**11.3.2.11 Defined\_Conceptual\_Domain class**

**11.3.2.11.1 Direct superclass**

*Conceptual\_Domain* (11.3.2.1).

### 11.3.2.11.2 Description of Defined\_Conceptual\_Domain

*Defined\_Conceptual\_Domain* is a class, each instance of which models a *defined conceptual domain* (3.2.145).

As a subclass of *Conceptual\_Domain*, *Defined\_Conceptual\_Domain* inherits the associations of the former.

In addition, *Defined\_Conceptual\_Domain* shall participate in a *domain\_definition* association with one or more *Conceptual\_Domain\_Definitions*.

Where multiple *Conceptual\_Domain\_Definitions* are specified, the *definition\_expression* (11.3.2.10.2.1) of each shall be equivalent, each specified using a different *definition\_grammar* (11.3.2.10.2.2).

### 11.3.2.11.3 Attributes of Defined\_Conceptual\_Domain

#### 11.3.2.11.3.1 begin\_date

Attribute name: *begin\_date*

Definition: date on which this *Defined\_Conceptual\_Domain* became, or will become, a valid *Defined\_Conceptual\_Domain*

Obligation: Mandatory

Multiplicity: 1

Datatype: *Date* (6.2.3)

NOTE *A registration authority can determine whether this date is the date the defined conceptual domain becomes valid in a registry, or the date the defined conceptual domain becomes part of the source domain, or some other date.*

#### 11.3.2.11.3.2 end\_date

Attribute name: *end\_date*

Definition: date on which the *Defined\_Conceptual\_Domain* ceased, or will cease, to be valid.

Obligation: Optional

Multiplicity: 0..1

Datatype: *Date* (6.2.3)

NOTE 1 The absence of the *end\_date* indicates that the *Defined\_Conceptual\_Domain* is still valid.

NOTE 2 *A registration authority can determine whether this date is the date the defined conceptual domain becomes no longer valid in a registry, or the date the defined conceptual domain becomes no longer part of the source domain, or some other date.*

#### 11.3.2.11.3.3 locked\_date

Attribute name: *locked\_date*

Definition: date on which the set of *Defined\_Value\_Meanings* associated with the *Defined\_Conceptual\_Domain* was, or will be, locked.

Obligation: Optional

Multiplicity: 0..1

Datatype: *Date* (6.2.3)

#### 11.3.2.11.3.4 expanded\_on

Attribute name: expanded\_on

Definition: datetime at which the set of *Defined\_Value\_Meanings* associated with the *Defined\_Conceptual\_Domain* was expanded and imported into the registry.

Obligation: Optional

Multiplicity: 0..1

Datatype: *Datetime* (6.2.4)

— End of attributes of *Defined\_Conceptual\_Domain* —

#### 11.3.2.12 Defined\_Value\_Meaning class

##### 11.3.2.12.1 Direct superclass

*Defined\_Value\_Meaning* is a subclass of *Concept* (6.4.2.2, 9.1.2.1).

##### 11.3.2.12.2 Description of Defined\_Value\_Meaning

*Defined\_Value\_Meaning* is a class, each instance of which models a **value meaning** (3.2.142), which provides semantic content of a possible value.

NOTE *Defined\_Value\_Meaning* is like *Value\_Meaning* (11.3.2.8), except importing the value meanings for a *Defined\_Conceptual\_Domain* is optional, and if done will be done as a set, so the *begin\_date* and *end\_date* attributes reside on the domain instead of the individual values.

*Defined\_Value\_Meaning* shall participate in a *defined\_value\_meaning\_set* association (11.3.3.8) with one or more *Defined\_Conceptual\_Domains* (11.3.2.11).

*Defined\_Value\_Meaning* may participate in a *defined\_permmissible\_value\_meaning* (11.3.3.9) association with zero or more *Defined\_Permissible\_Values* (11.3.2.14).

##### 11.3.2.12.3 Attributes of Defined\_Value\_Meaning

None.

#### 11.3.2.13 Defined\_Value\_Domain class

##### 11.3.2.13.1 Direct superclass

*Value\_Domain* (11.3.2.8).

##### 11.3.2.13.2 Description of Defined\_Value\_Domain

*Defined\_Value\_Domain* is a class each instance of which models a *defined value domain* (3.2.145), a *value domain* (3.2.140) that is specified by a reference to an external source of all its *permissible values* (3.2.96). The external source is specified by the associated the *Defined\_Conceptual\_Domain* (11.3.2.11), in conjunction with the *fieldname\_for\_permitted\_value* attribute.

NOTE A *Defined\_Value\_Domain* is like an *Enumerated\_Value\_Domain* (11.3.2.6), except the enumerated values are referenced from the external source that specifies the *Defined\_Conceptual\_Domain* (11.3.2.11), and the permissible values could or could not be imported into the registry. If the permissible values are imported, then they are imported as a set, so the *begin\_date* and *end\_date* attributes are specified on the *Defined\_Value\_Domain* instead of on the individual *Permissible\_Values* (11.3.2.7).

Each *Defined\_Value\_Domain* class may participate in the association:

— *defined\_permmissible\_value\_set* (11.3.3.10) with zero or more *Defined\_Permissible\_Values* (11.3.2.14) which specify the values within the domain.

**11.3.2.13.3 Attributes of Defined\_Value\_Domain****11.3.2.13.3.1 fieldname\_for\_permitted\_value**Attribute name: *fieldname\_for\_permitted\_value*

Definition: the name of the field at the external source where the permitted values may be accessed

Obligation: Mandatory

Multiplicity: 1

Datatype: *String* (6.2.11)**11.3.2.13.3.2 begin\_date**Attribute name: *begin\_date*Definition: date at which the *Defined\_Value\_Domain* became valid

Obligation: Mandatory

Multiplicity: 1

Datatype: *Date* (6.2.3)

NOTE By imputation, this is also considered to be date at which the associated *Defined\_Permissible\_Values* were bound to the associated *Defined\_Value\_Meanings*, since the *defined\_permmissible\_value\_meaning* association mandates that there must be exactly one meaning (*Value\_Meaning*) for each representation (*Permissible\_Value*).

**11.3.2.13.3.3 end\_date**Attribute name: *end\_date*Definition: date at which the *Defined\_Value\_Domain* ceased to be valid

Obligation: Optional

Multiplicity: 0..1

Datatype: *Date* (6.2.3)

NOTE 1 By imputation, this is also considered to be date at which the associated *Defined\_Permissible\_Values* ceased to be bound to their associated meanings (*Defined\_Value\_Meaning*) via the *defined\_permmissible\_value\_meaning* association.

NOTE 2 The absence of the *permissible\_value\_end\_date* attribute indicates that the *Permissible\_Value* is still valid and (by imputation) still bound to its *Value\_Meaning* via the *value\_meaning* association.

— End of attributes of *Defined\_Value\_Domain* —

**11.3.2.14 Defined\_Permissible\_Value class****11.3.2.14.1 Description of Defined\_Permissible\_Value**

*Defined\_Permissible\_Value* is a class each instance of which models a *permissible value* (3.2.97), the *designation* (3.2.52) of a *value meaning* (3.2.142). A *Defined\_Permissible\_Value* is an expression of a *Defined\_Value\_Meaning* (11.3.2.12) within zero or more *Defined\_Value\_Domains* (11.3.2.13).

Each *Defined\_Permissible\_Value* shall participate in the following association:

- *defined\_permmissible\_value\_meaning* (11.3.3.9) with exactly one *Defined\_Value\_Meaning* (11.3.2.12).

Each *Permissible\_Value* may participate in the following association:

- *defined\_permmissible\_value\_set* (11.3.3.10) with zero or more *Defined\_Value\_Domains* (11.3.2.13). It is one of a set of such values that comprises an *Enumerated\_Value\_Domain* (11.3.2.6).

### 11.3.2.14.2 Attributes of *Defined\_Permissible\_Value*

#### 11.3.2.14.2.1 *permitted\_value*

Attribute name: *permitted\_value*

Definition: the actual value of the *Permissible\_Value*

Obligation: Mandatory

Multiplicity: 1

Datatype: *Value* (6.2.13)

— End of attributes of *Defined\_Permissible\_Value* —

#### 11.3.3.6

At the end of 11.3.3.6, insert subclauses 11.3.3.7 through 11.3.3.10:

#### 11.3.3.7 *domain\_definition*

The association *domain\_definition* binds a set of *Conceptual\_Domain\_Definitions* (11.3.2.10) to a *Defined\_Conceptual\_Domain* (11.3.2.11). The association has two roles:

- *defined\_domain* (verb form: defines) which references a *Defined\_Conceptual\_Domain*;
- *definition* (verb form: defined by) which references a *Conceptual\_Domain\_Definition*.

#### 11.3.3.8 *defined\_value\_meaning\_set*

The association *defined\_value\_meaning\_set* binds a set of *Defined\_Value\_Meanings* (11.3.2.12) to a *Defined\_Conceptual\_Domain* (11.3.2.11). The association has two roles:

- *containing\_domain* (verb form: contained\_in) which references a *Defined\_Conceptual\_Domain*;
- *member* (verb form: has\_member) which references a *Defined\_Value\_Meaning*.

Each *member* (*Defined\_Value\_Meaning*) shall have one or more *containing\_domains* (*Defined\_Conceptual\_Domain*). Each *containing\_domain* (*Defined\_Conceptual\_Domain*) may have one or more *members* (*Defined\_Value\_Meanings*). The *defined\_value\_meaning\_set* association is a weak containment association, which means that deletion of the containing *Enumerated\_Conceptual\_Domain* does not imply a cascading delete of the contained *Defined\_Value\_Meanings*, provided the *Defined\_Value\_Meaning* is shared with another *Defined\_Conceptual\_Domain*.

#### 11.3.3.9 *defined\_permmissible\_value\_meaning*

The association *defined\_permmissible\_value\_meaning* binds one or more *Defined\_Permissible\_Values* (11.3.2.14) with a *Defined\_Value\_Meaning* (11.3.2.12). The association has two roles:

- *meaning* (verb form: has meaning) which references a *Defined\_Value\_Meaning*;
- *representation* (verb form: has representation) which references a *Defined\_Permissible\_Value*.

Each *representation* (*Defined\_Permissible\_Value*) shall have exactly one *meaning* (*Defined\_Value\_Meaning*). However, each *meaning* (*Defined\_Value\_Meaning*) may have zero or more *representations* (*Defined\_Permissible\_Values*).

### 11.3.3.10 defined\_permmissible\_value\_set

The association *defined\_permmissible\_value\_set* binds a set of *Defined\_Permissible\_Values* (11.3.2.14) to a *Defined\_Value\_Domain* (11.3.2.13). The association has two roles:

- *member* (verb form: has member) which references a *Defined\_Permissible\_Value*;
- *containing\_domain* (verb form: contains\_domain) which references a *Defined\_Value\_Domain*.

Each *member* (*Defined\_Permissible\_Value*) may have zero or more *containing\_domains* (*Defined\_Value\_Domains*). Each *containing\_domain* (*Defined\_Value\_Domain*) may have one or more *members* (*Defined\_Permissible\_Values*). The *permissible\_value\_set* association is a weak containment relation, i.e., deletion of the containing domain does not cause a cascading delete of the members (*Defined\_Permissible\_Values*). Thus it is possible to associate *defined permissible values* with *defined value meanings* without defining a complete *defined value domain*.

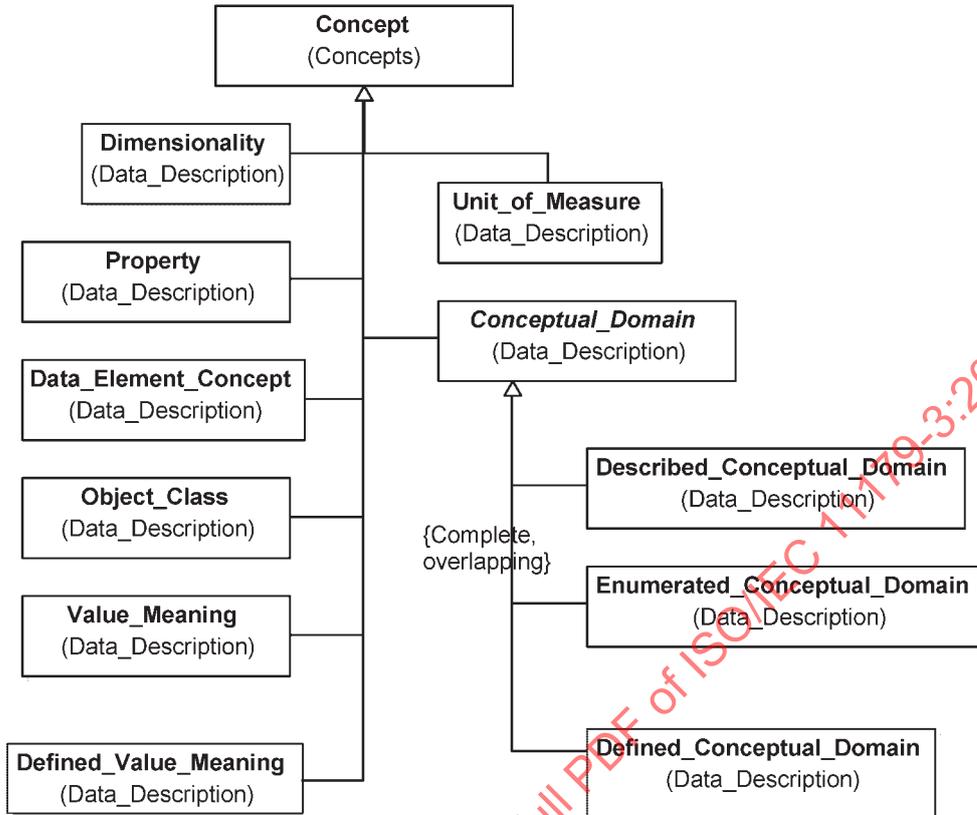
#### 11.5.1

Insert the following NOTE after Figure 15.

NOTE ISO/IEC 11179-3:2003 included an explicit depiction of *Representation\_Class* in the *Data\_Element* metamodel region. In ISO/IEC 11179-3:2013, this explicit representation has been dropped in favour of treating *Representation\_Class* as a type of *Classification\_Scheme*, which in turn is now considered a type of *Concept\_System*. The *Classification* metamodel region is described in 9.2. Annex F describes modelling *Representation\_Class* as a *Concept\_System*.

#### 11.7, Figure 17

Replace Figure 17 with the following:



11.7

At the end of 11.7, insert 11.8:

**11.8 Value\_Domain\_Subset metamodel region**

**11.8.1 Overview**

This metamodel region (Figure 18) shows how subsets of a *Value\_Domain* may be used for *Data\_Elements* where some of the values in the full *Value\_Domain* are not applicable.

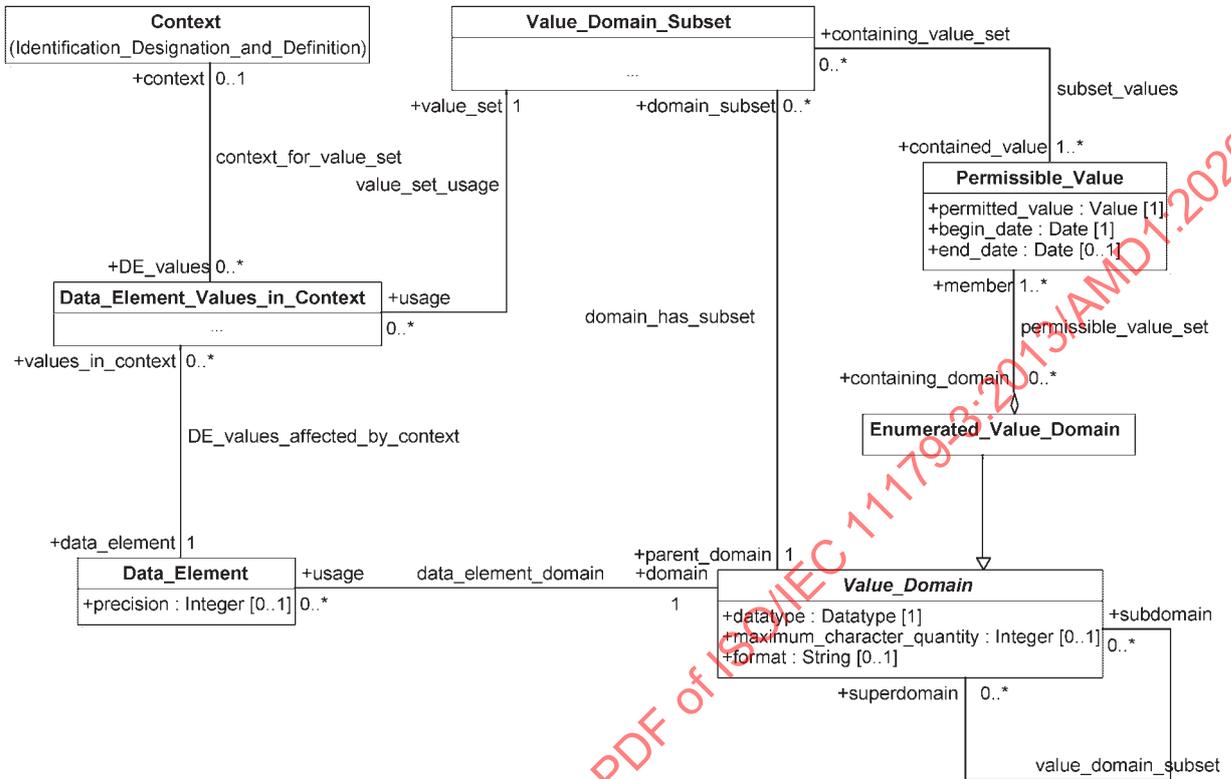


Figure 18 — Value\_Domain\_Subset metamodel region

## 11.8.2 Classes in the Value\_Domain\_Subset region

### 11.8.2.1 Context class

*Context* is described in 6.4.2.3 and 7.3.2.5. This region specifies an additional association.

*Context* may participate in the *context\_for\_value\_set* association (11.8.3.1) with zero or more *Data\_Element\_Values\_in\_Context* (11.8.2.3).

### 11.8.2.2 Data\_Element class

*Data\_Element* is described in 11.5.2.1. This region specifies an additional association.

*Data\_Element* may participate in a *DE\_values\_affected\_by\_context* association (11.8.3.2) with zero or more *Data\_Element\_Values\_in\_Contexts* (11.8.2.3).

### 11.8.2.3 Data\_Element\_Values\_in\_Context class

#### 11.8.2.3.1 Description of Data\_Element\_Values\_in\_Context

*Data\_Element\_Values\_in\_Context* is a class each instance of which models the use of a *Value\_Domain\_Subset* (11.8.2.5) to represent the *Permissible\_Values* (11.8.2.7) for a *Data\_Element* (11.8.2.2) in zero or one *Contexts* (11.8.2.1).

### 11.8.2.4 Value\_Domain class

*Value\_Domain* is described in 11.3.2.5.

## 11.8.2.5 Value\_Domain\_Subset class

### 11.8.2.5.1 Description of Value\_Domain\_Subset

*Value\_Domain\_Subset* is a class each instance of which models a subset of the *Permissible\_Values* (11.8.2.7) in a *Value\_Domain* (11.8.2.4).

### 11.8.2.6 Enumerated\_Value\_Domain class

*Enumerated\_Value\_Domain* is described in 11.3.2.6.

### 11.8.2.7 Permissible\_Value class

*Permissible\_Value* is described in 11.3.2.7. This region specifies an additional association.

*Permissible\_Value* may participate in a *subset\_values* association (11.8.3.6) with zero or more *Value\_Domain\_Subsets* (11.8.2.5).

## 11.8.3 Associations in the Value\_Domain\_Subset region

### 11.8.3.1 context\_for\_value\_set

The association *context\_for\_value\_set* records the use of a *Context* (11.8.2.1) by zero or more *Data\_Element\_Values\_in\_Context* (11.8.2.3). The association has two roles:

- *context* (verb form: in context) which references the *Context*;
- *DE\_values* (verb form: constrains DE values) which references the *Data\_Element\_Values\_in\_Context* that associates the applicable *Value\_Domain\_Subset* (11.8.2.5) and *Data\_Element* (11.8.2.2).

### 11.8.3.2 DE\_values\_affected\_by\_context

The association *DE\_values\_affected\_by\_context* records the use of zero or more *Data\_Element\_Values\_in\_Context* (11.8.2.3) by a *Data\_Element* (11.8.2.2). The association has two roles:

- *data\_element* (verb form: is data element) which references the *Data\_Element*;
- *values\_in\_context* (verb form: has values) which references the *Data\_Element\_Values\_in\_Context* that associates the applicable *Value\_Domain\_Subset* (11.8.2.5) and *Context* (11.8.2.1).

### 11.8.3.3 data\_element\_domain

*data\_element\_domain* is described in 11.1.3.2.

### 11.8.3.4 domain\_has\_subset

The association *domain\_has\_subset* records a superset-subset relationship between a *Value\_Domain* (11.8.2.4) and a *Value\_Domain\_Subset* (11.8.2.5). The association has two roles:

- *parent\_domain* (verb form: is parent domain) which references the *Value\_Domain*;
- *domain\_subset* (verb form: is domain subset) which references the *Value\_Domain\_Subset*.

### 11.8.3.5 permissible\_value\_set

*permissible\_value\_set* is described in 11.3.3.5.

### 11.8.3.6 subset\_values

The association *subset\_values* binds a *Value\_Domain\_Subset* (11.8.2.5) with a set *Permissible\_Values* (11.8.2.7). The association has two roles:

- *containing\_value\_set* (verb form: is containing value set) which references the *Value\_Domain\_Subset*;
- *contained\_value* (verb form: contains value) which references the *Permissible\_Value*.