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Data Management and Interchange

WG 4

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC1.

ISO/IEC 13249 consists of the following parts, under the general title Information technology — Database languages — SQL Multimedia and Application Packages:

— *Part 1: Framework*

— *Part 2: Full-Text*

— *Part 3: Spatial*

— *Part 4: Multimedia and Application*

— *Part 5: Still Image*

— *Part 6: Data Mining*

— *Part 7: History*

— *Part 8: MDR*

Parts other than this part specify requirements, and all are dependent on various parts of ISO/IEC 9075 and also on this part of ISO/IEC 13249

Introduction

The purpose of this International Standard is to define multimedia and application specific types and their associated routines using the user-defined features in ISO/IEC 9075.

SQL/MM is structured as a multi-part standard. At present it consists of the following parts:

Part 1: Framework

Part 2: Full-Text

Part 3: Spatial

Part 5: Still Image

Part 6: Data Mining

Part 7: History

Part 8: MDR

The organization of this part of ISO/IEC 13249 is as follows:

1) Clause 1, "Scope", specifies the scope of this part of ISO/IEC 13249.

2) Clause 2, “Normative references", identifies additional standards that, through reference in this part of ISO/IEC 13249, constitute provisions of this part of ISO/IEC 13249.

3) Clause 3, "Terms, Notations, Conventions, and Definitions", defines terms, notations, conventions, and definitions used in this part of ISO/IEC 13249.

4) Clause 4, "Concepts", presents concepts used in the definition of this part of ISO/IEC 13249.

5) Clause 5, "Metadata Registry Types ", defines user-defined types for metamodel of metadata registry.

6) Clause 6, "Conformance", defines the criteria for conformance to this part of ISO/IEC 13249.

Information technology — Database languages — SQL Multimedia and Application Packages — Part 8: Metadata Registry (MDR)

1 Scope

This part of ISO/IEC 13249 covers an access method for consistent exchanging and sharing of metadata in various application fields, and includes the followings.

a) introduces the metadata registry for this part of ISO/IEC 13249,

b) gives the references necessary for this part of ISO/IEC 13249,

c) defines terms, notations, conventions, and definitions specific to this part of ISO/IEC 13249,

d) defines concepts specific to this part of ISO/IEC 13249,

e) defines metadata registry user-defined types and associated routines,

f) covers specifications for retrieval of metadata in a registry,

g) does not cover specifications to insert, delete, and modify metadata in a registry

— A metadata registry user-defined type is generic to metadata registry handling. It addresses the need to retrieve metadata based on metamodel of ISO/IEC 11179 such as data element, conceptual domain, value domain, data element concept, and so on.

— User-defined types reflect attributes of classes of metamodel of ISO/IEC 11179.

— A MDR user-defined type does not redefine the database language SQL directly.

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.

2.1 International standards

ISO/IEC 11179-1, Information technology — Metadata Registries (MDR) Part 1: Framework.

ISO/IEC 11179-2, Information technology — Metadata Registries (MDR) Part 2: Classification.

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

ISO/IEC 11179-4, Information technology — Metadata Registries (MDR) Part 4: Formulation of data definitions.

ISO/IEC 11179-5, Information technology — Metadata Registries (MDR) Part 5: Naming and identification principles.

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

ISO/IEC 13249-1, Information technology — Database languages — SQL Multimedia and Application Packages — Part 1: Framework.

ISO/IEC 9075-1, Information technology — Database languages — SQL — Part 1: Framework (SQL/Framework).

ISO/IEC 9075-2:2008, Information technology — Database languages — SQL — Part 2: Foundation (SQL/Foundation).

3 Terms, Notations, Conventions, and Definitions

3.1 Terms

3.1.1 Terms defined in ISO/IEC 9075 Part 1

For the purposes of this document, the following terms defined in ISO/IEC 9075 Part 1 apply.

a) data type

b) identifier

c) identify

d) instance (of a value)

e) object (as in 'x object')

f) property (of an object)

g) row

h) sequence

i) SQL-statement

j) table

3.1.2 Terms defined in ISO/IEC 11179 Part 1

a) attribute

b) class

c) relationship

d) basic attribute

e) characteristic

f) concept

g) concept system

h) conceptual data model

i) data

j) data model

k) definition

l) designation

m) entity

n) essential characteristic

o) extension

p) general concept

q) individual concept

r) intension

s) metadata

t) metadata item

u) metadata object

v) metadata registry

w) metamodel

x) name

y) registry item

z) registry metamodel

aa) terminological system

ab) administered item

ac) administration record

ad) administrative status

ae) classification scheme

af) classification scheme item

ag) conceptual domain

ah) context

ai) data element

aj) data element concept

ak) data identifier

al) dimensionality

am) enumerated conceptual domain

an) enumerated value domain

ao) international code designator

ap) item identifier

aq) item registration authority identifier

ar) non-enumerated conceptual domain

as) non-enumerated conceptual domain description

at) non-enumerated value domain

au) non-enumerated value domain description

av) object class

aw) organization

ax) organization identifier

ay) organization part

az) organization part identifier

ba) organization part identifier source

bb) permissible value

bc) registrar

bd) registration

be) registration authority

bf) registration authority identifier

bg) registration status

bh) representation class

bi) unit of measure

bj) value

bk) value domain

bl) value meaning

bm) value meaning description

bn) version

bo) data construct

bp) quantity

3.1.3 Terms defined in ISO/IEC 13249 Part 1

This part of ISO/IEC 13249 makes use of all terms defined in Part 1 of ISO/IEC 13249.

3.2 Notations

3.2.1 Notations provided in Part 1

The notations used in this part of ISO/IEC 13249 are defined in part 1 of ISO/IEC 13249.

3.2.2 Notation provided in Part 8

This part of ISO/IEC 13249 uses the prefix 'MDR_' for user-defined type name.

3.3 Conventions

The convention is used in this part of ISO/IEC 13249 are defined in part 1 of ISO/IEC 13249.

3.4 Definitions

3.4.1 Definitions provided in ISO/IEC 9075 Part 1

This part of ISO/IEC 13249 makes use of all terms defined in Part 1 of ISO/IEC 9075.

3.4.2 Definitions provided in ISO/IEC 11179 Part 1

This part of ISO/IEC 13249 makes use of all terms defined in Part 1 of ISO/IEC 11179.

3.4.3 Definitions provided in Part 8

This part of ISO/IEC 13249 defines the following definitions apply.

3.4.3.1 metadata

Data that defines and describes other **data** or processes

[ISO/IEC 11179-1:2003, 3.2.14]

3.4.3.2 metadata registry
MDR

An information system for registering **metadata**

[ISO/IEC 11179-1:2003, 3.2.17]

3.4.3.3 user-defined type

[ISO/IEC 9075-2:2008]

3.4.3.4 method

[Adapted from ISO/IEC 9075-2:2003]

3.4.3.8 class name

A name for representing user-defined type corresponding to classes consisting of metamodel of ISO/IEC 11179

4 Concepts

4.1 Overview

A metadata registry (MDR) has been used for systematic management of metadata describing data. A variety of registry frameworks have been developed for applications fields, and many registries have been built for management of metadata. Even though MDR provides advantage for data management, there still remain several problems. For facilitating usability of MDR, the following problems should be resolved for facilitating its usability:

- Inconsistent access method
- Invalid registries
- Difficulty of registry management system development

This part therefore aims to provide a consistent access method for retrieving metadata. This part will facilitate usage of the standard.

This part includes the specifications for management of metadata registries, and the specifications are defined in the same way as SQL packages such as SQL/MM Spatial, SQL/MM Mining, SQL/MM Still Image, and so on. This part covers the definition of operational architectures and processes for the consistent access that should support transparency regardless of registries with different database structures.

This part specifies user-defined types for the ISO/IEC 11179 standard. In this part, a user can create user-defined types which are based on MDR schema. We can guarantee the valid access method to retrieve metadata because the user-defined types reflect all information of the ISO/IEC 11179 standard.

4.2 MDR_<ClassName> type

4.2.1 Attributes of the MDR_<ClassName> type

The MDR_<ClassName> type is an abstraction for attributes of metamodel of ISO/IEC 11179, using the following attributes:

- Each class has some attributes to represent its property

- Attributes correspond to columns of a table;

For example, the user-defined type for the class ‘Data Element’ in the ISO/IEC 11179 metamodel is defined as follows:

- MDR_Data_Element

4.3 Example Application

In order to help understanding of this part of ISO/IEC 13249, hereafter is an example application.

4.3.1 Create statement for MDR_Data_Element

This clause shows how to make the user-defined type for MDR_Data_Element. The user-defined type MDR_Data_Element has a set of static methods and methods to retrieve information of metamodel which is defined in ISO/IEC 11179.

```
CREATE TYPE MDR_Data_Element

AS(<ALLColumns>)

STATIC METHOD MDR_administered_item_administration_record()
```

RETURNS TABLE(<ALLColumns>),

STATIC METHOD MDR_data_element()

RETURNS TABLE(<ALLColumns>)

METHOD MDR_data_element_name()

RETURNS <data_element_name>

4.3.2 Definition of the Static Method MDR_data_element()

MDR_data_element(), which is a static method of the user-defined type MDR_DATA_ELEMENT, is to obtain all metadata of data element.

4.3.2.1 Create statement for MDR_data_element()

CREATE STATIC METHOD MDR_data_element()

RETURNS TABLE(<AllColumns>)

FOR MDR_data_element

BEGIN

RETURN TABLE(

SELECT <Columns>

FROM user_de_table);

END

BEGIN-END clause which can return columns of the table ‘user_de_table’ should be implemented by a registry manager or administrator.

Note: <AllColumns> : Comma-separated column names. This definition is derived from 13249-7: History.

4.3.2.2 Output Parameters of the Static Method MDR_data_element()

The static method MDR_data_element() has the following output parameters. The return type of all static methods in this part is defined according to the metamodel specification in ISO/IEC 11179.

data_element_administration_record MDR_Administration_Record,

representation_class_qualifier CHARACTER VARYING(30),

data_element_precision Integer

The attribute data_element_administration_record is a structured type of MDR_Administration_Record which is also a kind of metamodel defined ISO/IEC 11179.

4.3.3 Select Statement

SELECT

DE.data_element_name, DE.status

FROM

```
        TABLE(MDR_Data_Element::MDR_data_element()) AS DE
WHERE
    DE.data_element_administration_record.administrative_status() = 'Recorded';
```

In this SELECT Statement, all columns are derived from FROM clause.

5 MDR types

5.1 MDR_Administered_Item type

Purpose

Provide the definition of a structured type for the class Administered Item in ISO/IEC 11179.

Definition

```
CREATE TYPE MDR_Administered_Item AS
(
 administered_item_administration_record    MDR_Administration_Record
)
```

5.2 MDR_Administration_Record type

Purpose

Provide the definition of a structured type for the class Administered Record.

Definition

```
CREATE TYPE MDR_Administration_Record AS
(
 administered_item_identifier   MDR_Item_Identifier,
 administrative_note   CHARACTER VARYING(30),
 administrative_status      CHARACTER VARYING(30),
 change_description   CHARACTER VARYING(30),
 creation_date    Date,
 effective_date    Date,
 explanatory_comment      CHARACTER VARYING(30),
 last_change Date,
 origin   CHARACTER VARYING(30),
 registration_status    CHARACTER VARYING(30),
 unresolved_issue      CHARACTER VARYING(30),
 until_date    Date
)
```

5.3 MDR_Contact type

Purpose

Provide the definition of a structured type for the class Contact.

Definition

```
CREATE TYPE MDR_Contact AS
(
 contact_name    CHARACTER VARYING(30),
 contact_title    CHARACTER VARYING(30),
 contact_information    CHARACTER VARYING(30),
)
```

5.4 MDR_Item_Identifier type

Purpose

Provide the definition of a structured type for the class Item Identifier.

Definition

```
CREATE TYPE MDR_Item_identifier AS
(
 item_registration_authority_identifier    Registration_Authority_Identifier,
 data_identifier    CHARACTER VARYING(30),
 version    CHARACTER VARYING(30)
)
```

5.5 MDR_Language_Identification type

Purpose

Provide the definition of a structured type for the class Language Identification.

Definition

```
CREATE TYPE MDR_Language_Identification AS
(
 language_identifier    CHARACTER VARYING(30),
 country_identifier    CHARACTER VARYING(30)
```

)

5.6 MDR_Organization type

Purpose

Provide the definition of a structured type for the class Organization.

Definition

```
CREATE TYPE MDR_Organization AS
(
 organization_name    CHARACTER VARYING(30),
 organization_mail_address    CHARACTER VARYING(30)
)
```

5.7 MDR_Reference_Document type

Purpose

Provide the definition of a structured type for the class Reference Document.

Definition

```
CREATE TYPE MDR_Reference_Document AS
(
 reference_document_identifier    CHARACTER VARYING(30),
 reference_document_language_identifier    MDR_Language_Identification,
 reference_document_title    CHARACTER VARYING(30),
 reference_document_type_description    CHARACTER VARYING(30)
)
```

5.8 MDR_Registrar type

Purpose

Provide the definition of a structured type for the class Registrar.

Definition

```
CREATE TYPE MDR_Registrar AS
```

(

registrar_identifier CHARACTER VARYING(30),

registrar_contact MDR_Contact

)

5.9 MDR_Registration_Authority type

Purpose

Provide the definition of a structured type for the class Registration Authority.

Definition

CREATE TYPE MDR_Registration_Authority AS

(

registration_authority_identifier MDR_Registration_Authority_Identifier,

documentation_language_identifier MDR_Language_Identification

)

5.10 MDR_Registration_Authority_Identifier type

Purpose

Provide the definition of a structured type for the class Registration Authority Identifier.

Definition

CREATE TYPE MDR_Registration_Authority_Identifier AS

(

international_code_designator CHARACTER VARYING(30),

organization_identifier CHARACTER VARYING(30),

organization_part_identifier CHARACTER VARYING(30),

OPI_source CHARACTER VARYING(30)

)

5.11 MDR_Stewardship type

Purpose

Provide the definition of a structured type for the class Stewardship.

Definition

```
CREATE TYPE MDR_Stewardship AS
(
 stewardship_contact    Contact
)
```

5.12 MDR_Submission type

Purpose

Provide the definition of a structured type for the class Submission.

Definition

```
CREATE TYPE MDR_Submission AS
(
 submission_contact    Contact
)
```

5.13 MDR_Context type

Purpose

Provide the definition of a structured type for the class Context.

Definition

```
CREATE TYPE MDR_Context AS
(
 context_administration_record    MDR_Administration_Record,
 context_description    CHARACTER VARYING(30),
 context_description_language_identifier MDR_Language_Identification
)
```

5.14 MDR_Terminological_Entry type

Purpose

Provide the definition of a structured type for the class Terminological Entry.

Definition

```
CREATE TYPE MDR_Terminological_Entry AS
(
)
```

5.15 MDR_Language_Section type

Purpose

Provide the definition of a structured type for the class Language Section.

Definition

```
CREATE TYPE MDR_Language_Section AS
(
  language_section_language_identifier MDR_Language_Identification
)
```

5.16 MDR_Definition (of Administered Item) type

Purpose

Provide the definition of a structured type for the class Difinition.

Definition

```
CREATE TYPE MDR_Definition AS
(
  definition_text    CHARACTER VARYING(30),
  definition_source_reference MDR_Reference_Document,
  preferred_definition    BOOLEAN
)
```

5.17 MDR_Designation (of Administered Item) type

Purpose

Provide the definition of a structured type for the class Designation.

Definition

```
CREATE TYPE MDR_Designation AS
(
  name    CHARACTER VARYING(30),
```

```
  preferred_designation    BOOLEAN
)
```

5.18 MDR_Classification_Scheme type

Purpose

Provide the definition of a structured type for the class Classification Scheme.

Definition

```
CREATE TYPE MDR_Classification_Scheme AS
(
  classification_scheme_administration_record    MDR_Administration_Record,
  classification_scheme_type_name    CHARACTER VARYING(30)
)
```

5.19 MDR_Classification_Scheme_Item type

Purpose

Provide the definition of a structured type for the class Classification Scheme Item.

Definition

```
CREATE TYPE MDR_Classification_Scheme_Item AS
(
  classification_scheme_item_type_name    CHARACTER VARYING(30),
  classification_scheme_item_value    CHARACTER VARYING(30)
)
```

5.20 MDR_Classification_Scheme_Item_Relationship type

Purpose

Provide the definition of a structured type for the class Classification Scheme Item Relationship.

Definition

```
CREATE TYPE MDR_Classification_Scheme_Item_Relationship AS
(
```

classification_scheme_item_relationship_type_description CHARACTER VARYING(30)

)

5.21 MDR_Object_Class type

Purpose

Provide the definition of a structured type for the class Object Class.

Definition

CREATE TYPE MDR_Object_Class AS

(

object_class_administration_record MDR_Administration_Record,

concept_relationship_type_description CHARACTER VARYING(30)

)

5.22 MDR_Property type

Purpose

Provide the definition of a structured type for the class Property.

Definition

CREATE TYPE MDR_Property AS

(

property_administraion_record MDR_Administration_Record

)

5.23 MDR_Data_Element_Concept type

Purpose

Provide the definition of a structured type for the class Data Element Concept.

Definition

CREATE TYPE MDR_Data_Element_Concept AS

(

data_element_concept_administration_record MDR_Administration_Record,

data_element_concept_object_class MDR_Object_Class,

data_element_concept_property MDR_Property,

```
 object_class_qualifier    CHARACTER VARYING(30),
 property_qualifier    CHARACTER VARYING(30)
)
```

5.24 MDR_Conceptual_Domain type

Purpose

Provide the definition of a structured type for the class Conceptual Domain.

Definition

```
CREATE TYPE MDR_Conceptual_Domain AS
(
 conceptual_domain_administration_record    MDR_Administration_Record,
 dimensionality    CHARACTER VARYING(30)
)
```

5.25 MDR_Enumerated_Conceptual_Domain type

Purpose

Provide the definition of a structured type for the class Enumerated Conceptual Domain.

Definition

```
CREATE TYPE MDR_Enumerated_Conceptual_Domain AS
(
 conceptual_domain_administration_record    MDR_Administration_Record,
 common_attributes    MDR_Common_Attributes,
 dimensionality    CHARACTER VARYING(30)
)
```

5.26 MDR_Value_Meanings type

Purpose

Provide the definition of a structured type for the class Value Meanings.

Definition

```
CREATE TYPE MDR_Value_Meanings AS
(
 value_meaning_identifier    CHARACTER VARYING(30),,
 value_meaning_begin_date    Date,
 value_meaning_description    CHARACTER VARYING(30),
 value_meaning_end_date    Date
)
```

5.27 MDR_Non_enumerated_Conceptual_Domain type

Purpose

Provide the definition of a structured type for the class Non enumerated Conceptual Domain.

Definition

```
CREATE TYPE MDR_Non_enumerated_Conceptual_Domain AS
(
 non_enumerated_conceptual_domain_description    CHARACTER VARYING(30)
)
```

5.28 MDR_Value_Domain type

Purpose

Provide the definition of a structured type for the class Value Domain.

Definition

```
CREATE TYPE MDR_Value_Domain AS
(
 value_domain_administration_record    MDR_Administration_Record,
 value_domain_datatype MDR_Datatype,
 value_domain_format    CHARACTER VARYING(30),
 value_domain_maximum_character_quantity    Integer,
 value_domain_unit_of_measure MDR_Unit_of_Measure
)
```

5.29 MDR_Enumerated_Value_Domain type

Purpose

Provide the definition of a structured type for the class Enumerated Value Domain.

Definition

```
CREATE TYPE MDR_Enumerated_Value_Domain AS
(
  value_domain_administration_record  MDR_Administration_Record,
  common_attributes  MDR_Common_Attributes,
  value_domain_datatype  MDR_Datatype,
  value_domain_format  CHARACTER VARYING(30),
  value_domain_maximum_character_quantity  Integer,
  value_domain_unit_of_measure  MDR_Unit_of_Measure
)
```

5.30 MDR_Permissible_Value type

Purpose

Provide the definition of a structured type for the class Permissible Value.

Definition

```
CREATE TYPE MDR_Permissible_Value AS
(
 permissible_value_begin_date  Date,
 permissible_value_end_date  Date
)
```

5.31 MDR_Value type

Purpose

Provide the definition of a structured type for the class Value.

Definition

```
CREATE TYPE MDR_Value AS
```

(

value_item CHARACTER VARYING(30)

)

5.32 MDR_Non_enumerated_Value_Domain type

Purpose

Provide the definition of a structured type for the class Non enumerated Value Domain.

Definition

CREATE TYPE MDR_Non_enumerated_Value_Domain AS

(

non_enumerated_value_domain_description CHARACTER VARYING(30)

)

5.33 MDR_Datatype type

Purpose

Provide the definition of a structured type for the class Datatype.

Definition

CREATE TYPE MDR_Datatype AS

(

datatype_name CHARACTER VARYING(30),

datatype_description CHARACTER VARYING(30),

datatype_schema_reference CHARACTER VARYING(30),

datatype_annotation CHARACTER VARYING(30)

)

5.34 MDR_Unit_of_Measure type

Purpose

Provide the definition of a structured type for the class Unit of Measure.

Definition

CREATE TYPE MDR_Uni_of_Measure AS

(

unit_of_measure_name CHARACTER VARYING(30),

unit_of_measure_precision Integer

)

5.35 MDR_Data_Element type

Purpose

Provide the definition of a structured type for the class Data Element.

Definition

CREATE TYPE MDR_Data_Element AS

(

data_element_administration_record MDR_Administration_Record,

representation_class_qualifier CHARACTER VARYING(30),

data_element_precision Integer

)

5.36 MDR_Representation_Class type

Purpose

Provide the definition of a structured type for the class Representation Class.

Definition

CREATE TYPE MDR_Representation_Class AS

(

representation_class_administration_record MDR_Administration_Record

)

5.37 MDR_Data_Element_Example type

Purpose

Provide the definition of a structured type for the class Data Element Example.

Definition

CREATE TYPE MDR_Data_Element_Example AS

(

data_element_example_item CHARACTER VARYING(30)

)

5.38 MDR_Derivation_Rule type

Purpose

Provide the definition of a structured type for the class Derivation Rule.

Definition

CREATE TYPE MDR_Derivation_Rule AS

(

derivation_rule_administration_record MDR_Administration_Record,

derivation_rule_specification CHARACTER VARYING(30)

)

5.39 MDR_Data_Element_Derivation type

Purpose

Provide the definition of a structured type for the class Data Element Derivation.

Definition

CREATE TYPE MDR_Data_Element_Derivation AS

(

)

5.40 MDR_Concept type

Purpose

Provide the definition of a structured type for the class Concept.

Definition

CREATE TYPE MDR_Concept AS

(

object_class_administration_record MDR_Administration_Record,

common_attributes MDR_Common_Attributes

)

5.41 MDR_Data_Element_Concept_Relationship type

Purpose

Provide the definition of a structured type for the class Data Element Concept Relationship.

Definition

```
CREATE TYPE MDR_Data_Element_Concept_Relationship AS
(
 data_element_concept_relationship_type_description    CHARACTER VARYING(30)
)
```

5.42 MDR_Concept_Relationship type

Purpose

Provide the definition of a structured type for the class Concept Relationship.

Definition

```
CREATE TYPE MDR_Concept_Relationship AS
(
 concept_relationship_type_description    CHARACTER VARYING(30)
)
```

5.43 MDR_Value_Domain_Relationship type

Purpose

Provide the definition of a structured type for the class Value Domain Relationship.

Definition

```
CREATE TYPE MDR_Value_Domain_Relationship AS
(
 value_domain_relationship_type_description    CHARACTER VARYING(30)
)
```

5.44 MDR_Conceptual_Domain_Relationship type

Purpose

Provide the definition of a structured type for the class Conceptual Domain Relationship.

Definition

```
CREATE TYPE MDR_Conceptual_Domain_Relationship AS
(
  conceptual_domain_relationship_type_description    CHARACTER VARYING(30)
)
```

6 Conformance

6.1 Requirements for conformance

A conforming implementation supports a user-defined type by:

1) providing a user-defined type with the name as specified by this part of ISO/IEC 13249,

2) A conforming implementation does not need to support any of the attributes of user-defined types.

6.2 Claims of conformance

Claims of conformance to this part of ISO/IEC 13249 shall state:

1) The definitions for all elements that this part of ISO/IEC 13249 specifies as implementation-defined.