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Geografske informacije - Slovarji in registri konceptov o pojavih

Geographic information - Feature concept dictionaries and registers

Information géographique - Dictionnaires de concepts de caractéristiques et registres

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Geographic information — Feature concept dictionaries and registers

Information géographique — Dictionnaires de concepts de caractéristiques et registres

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ISO/DIS 19126**Foreword**

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Introduction

This International Standard specifies a schema for geographic feature concept dictionaries managed as registers. As described in ISO 19101, geographic features are abstractions of real world phenomena associated with a location relative to the surface of the earth, about which data are collected, maintained, and disseminated.

A feature concept dictionary provides basic definitions and related information about a set of concepts that may be used to describe geographic features and shared across multiple application areas. Elements from a feature concept dictionary may be re-used in one or more feature catalogues. A feature catalogue is often associated with a particular application schema, product specification, and data set. It provides a complete textual specification of a set of feature types and their properties and relationships. See Annex A for further discussion of the relationships between feature concept dictionaries, feature catalogues, application schemas, and product specifications.

ISO 19135 specifies procedures for the registration of items of geographic information. Items of geographic information that may be registered are members of object classes specified in technical standards such as those developed by ISO/TC 211. This International Standard defines object classes and specifies rules used to establish and maintain feature concept dictionaries as ISO 19135 conformant register schemas.

ISO 19135 specifies the structure of a hierarchical register in which the principal register holds a set of items that describe the subregisters. This International Standard specifies a schema for a hierarchical register where the subregisters are feature concept dictionaries and/or feature catalogues. This International Standard specifies an accompanying schema. The resulting hierarchical register may be used as a basis for harmonization and the establishment of interoperability between different geographic information communities.

Feature concept dictionaries and feature catalogues maintained as registers may serve as sources of reference for similar registers established by other geographic information communities as part of a system of cross-referencing. Cross-referencing between respective items in registers of items of geographic information may be difficult in cases where the structure of registers differs between information communities. This International Standard may serve as a guide for different information communities to develop compatible registers that can support a system of geographic information cross-referencing.

The Digital Geographic Information Working Group (DGIWG) community feature concept dictionary and register is described as an example implementation of this International Standard.

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Geographic information — Feature concept dictionaries and registers

1 Scope

This International Standard specifies a schema for feature concept dictionaries to be established and managed as registers. This International Standard does not specify schemas for feature catalogues or for the management of feature catalogues as registers. However, because feature catalogue are often derived from feature concept dictionaries, this International Standard does specify a schema for a hierarchical register of feature concept dictionaries and feature catalogues. These registers are in accordance with ISO 19135.

2 Conformance

2.1 Introduction

To conform to this International Standard, all of the conditions specified for at least one of the two conformance classes described below shall be satisfied.

2.2 Conformance for a feature concept dictionary

Any feature concept dictionary that claims conformance to this International Standard shall satisfy all of the conditions specified in the following Abstract Test Suites:

- a) ISO 19135, Annex A.1, for general conformance to ISO 19135, and
- b) Annex B.2 of this International Standard.

A feature concept dictionary register established by ISO/TC211 shall in addition satisfy all of the conditions specified in the ISO 19135 Abstract Test Suite for registers established by ISO/TC 211 [ISO 19135, Annex A.3].

2.3 Conformance for a register of feature concept dictionaries and/or feature catalogues

Any register of feature concept dictionaries and/or feature catalogues that claims conformance to this International Standard shall satisfy all of the conditions specified in the following Abstract Test Suites:

- a) ISO 19135, Annex A.1, for general conformance to ISO 19135,
- b) ISO 19135 Annex A.2 for conformance to ISO 19135 as a hierarchical register. and
- c) Annex B.3 of this International Standard.

A register of feature concept dictionaries and/or feature catalogues established by ISO/TC 211 shall in addition satisfy all of the conditions specified in the ISO 19135 Abstract Test Suite for registers established by ISO/TC 211 [ISO 19135, Annex A.3].

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3 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/TS 19103:2005, *Geographic information — Conceptual schema language*

ISO 19110:2005, *Geographic information — Methodology for feature cataloguing*

ISO 19115:2003, *Geographic information — Metadata*

ISO 19135:2005, *Geographic information — Procedures for registration of items of geographic information*

4 Terms, definitions, and abbreviations

4.1 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

4.1.1

compound registry

registry containing multiple **registers** that share the same **item classes** and coordinated management of a common characteristic

NOTE The common characteristic may be a shared namespace for the assignment of names and/or codes.

4.1.2

data product

dataset or dataset series that conforms to a **data product specification**

[ISO 19131]

4.1.3

data product specification

detailed description of a dataset or dataset series together with additional information that will enable it to be created, supplied to and used by another party

[ISO 19131]

4.1.4

data type

specification of a **value domain** with operations allowed on values in this domain

[ISO/TS 19103]

4.1.5

feature

abstraction of real world phenomena

[ISO 19101]

EXAMPLE The phenomenon named 'Eiffel Tower' may be classified with other similar phenomena into a feature type named 'tower'.

NOTE 1 A feature may occur as a type or an instance. In this International Standard, feature type is meant unless otherwise specified.

NOTE 2 This International Standard does not address real world phenomena directly; it addresses only their abstractions (feature concepts and feature types) and feature instances (data collected to represent a feature in conformance with a specified feature type).

4.1.6

feature association

relationship that links instances of one **feature type** with instances of the same or a different **feature type**

[ISO 19110]

NOTE A feature association may occur as a type or an instance. In this International Standard, feature association type is meant unless otherwise specified.

4.1.7

feature association concept

concept that may be specified in detail as one or more feature association types

EXAMPLE A 'supports' feature association concept describes a relationship between real world phenomena such as "highways" and "bridges" where the role of one feature is that it is *supported-by* the other feature (whose role is *supporter-of*).

4.1.8

feature attribute

characteristic of a **feature**

[ISO 19101]

EXAMPLE 1 A feature attribute named 'colour' may have an attribute value 'green' which belongs to the **data type** 'text'.

EXAMPLE 2 A feature attribute named 'length' may have an attribute value '82,4' which belongs to the **data type** 'real'.

NOTE 1 A feature attribute may occur as a type or an instance. In this International Standard, feature attribute type is meant unless otherwise specified.

NOTE 2 A feature attribute has a name, a data type, and a **value domain** associated to it. A feature attribute for a feature instance also has an attribute value taken from the **value domain**.

4.1.9

feature attribute concept

concept that may be specified in detail as one or more feature attribute types

EXAMPLE A 'height' feature attribute concept describes length in the vertical direction as a characteristic that may be shared by real world phenomena such as "human", "tree" and "building."

4.1.10

feature catalogue

catalogue containing definitions and descriptions of the **feature** types, **feature attributes**, and **feature associations** occurring in one or more sets of geographic data, together with any **feature operations** that may be applied

[ISO 19110]

4.1.11

feature concept

concept that may be specified in detail as one or more feature types

EXAMPLE The feature concept 'road' may be used to specify several different feature types, each with a different set of properties appropriate for a particular application. For a travel planning application, it might have a limited set of attributes such as name, route number, location and number of lanes, while for a maintenance application it might have an extensive setoff attributes detailing the structure and composition of each of the layers of material fo which it is composed.

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4.1.12

feature concept dictionary

dictionary that contains definitions of and related descriptive information about concepts that may be specified in detail in a feature catalogue

4.1.13

feature operation

operation that every instance of a **feature type** may perform

[ISO 19110]

EXAMPLE A feature operation upon a 'dam' is to raise the dam. The results of this operation are to raise the height of the 'dam' and the level of water in a 'reservoir'.

NOTE The values of **feature attributes** of feature instances are affected by feature operations.

4.1.14

feature operation concept

concept that may be specified in detail as one or more feature operation types

EXAMPLE A 'traffic flow' operation might return the number of persons or vehicles expected to move on or through some kind of transportation feature during a period of time specified as input to the operation.

4.1.15

hierarchical register

structured set of **registers** for a domain of register items, in which a single top-level register assigns a partition of the domain to each **subregister**

[ISO 19135]

EXAMPLE ISO 6523 *Data interchange – Structures for the identification of organizations*, is associated with a hierarchical register. The top level register contains organization identifier schemes and each subregister contains a set of organization identifiers that comply with a single organization identifier scheme.

4.1.16

identifier

linguistically independent sequence of characters capable of uniquely and permanently identifying that with which it is associated

[ISO 19135]

4.1.17

item class

set of items with common properties

[ISO 19135]

NOTE 1 Class is used in this context to refer to a set of instances, not the concept abstracted from that set of instances.

NOTE 2 To avoid potential ambiguity in this International Standard, the expression "register item class" is used.

4.1.18

nominal value

name of an object, type, or category

NOTE Many feature attributes take nominal rather than numerical values. The value domain of such an attribute is usually specified as an enumeration or a code list.

EXAMPLE 'Deciduous needle leaf' is a nominal value that identifies a vegetation type.

4.1.19**register**

set of files containing **identifiers** assigned to items with descriptions of the associated items

[ISO 19135]

4.1.20**registry**

information system on which a **register** is maintained

[ISO 19135]

4.1.21**subregister**

register that is described as a register item in another **register**

[ISO 19135]

4.1.22**value domain**

set of accepted values

[ISO/TS 19103]

4.2 Abbreviations

DGIWG	Digital Geospatial Information Working Group
DFDD	DGIWG Feature Data Dictionary
DIGEST	Digital Geographic Information Exchange Standard
IEC	International Electrotechnical Commission
IHO	International Hydrographic Organization
TC	Technical Committee
UML	Unified Modeling Language

5 Concepts**5.1 Introduction**

A feature concept dictionary describes concepts that may be used to characterize real world phenomena. Feature types and feature property types may then be specified using these concepts and documented in a feature catalogue. This International Standard specifies a feature concept dictionary schema (5.2 and 6).

ISO 19135 specifies procedures to be followed in preparing and maintaining registers of items of geographic information. Such registers may be used to support discovery of, access to, and use of the contents of feature concept dictionaries and feature catalogues. This International Standard specifies a schema for feature concept dictionaries as registers and information to be included in item registration proposals (Annex B).

A single authority may need to establish a suite of coordinated feature concept dictionary registers and feature catalogue registers that share a common structure, coding scheme, and/or community of interest. This International Standard specifies a compound registry mechanism to support such requirements (5.3.3).

Feature concept dictionaries and feature catalogues maintained as registers may serve as sources of reference for similar registers established by other geographic information communities as part of a system of cross-referencing. Feature concept dictionary registers and feature catalogue registers from different communities may be organized as partitions of a hierarchical register. Based on ISO 19135 this International