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Geografisk information – Samordning av begrepp från olika tillämpningsområden (ISO 19146:2018)

Geographic information – Cross-domain vocabularies (ISO 19146:2018)

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Denna standard ersätter SS-EN ISO 19146:2010, utgåva 1

The European Standard EN ISO 19146:2018 has the status of a Swedish Standard. This document contains the official version of EN ISO 19146:2018.

This standard supersedes the SS-EN ISO 19146:2010, edition 1

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EUROPEAN STANDARD

EN ISO 19146

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Supersedes EN ISO 19146:2010

English Version

Geographic information - Cross-domain vocabularies (ISO 19146:2018)

Information géographique - Vocabulaires
interdomaines (ISO 19146:2018)

Geoinformation - Themenübergreifendes
Vokabular (ISO 19146:2018)

This European Standard was approved by CEN on 12 June 2018.

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European foreword

This document (EN ISO 19146:2018) has been prepared by Technical Committee ISO/TC 211 "Geographic information/Geomatics" in collaboration with Technical Committee CEN/TC 287 "Geographic Information" the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

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Endorsement notice

The text of ISO 19146:2018 has been approved by CEN as EN ISO 19146:2018 without any modification.

Introduction

The development of information products frequently requires the acquisition and combination of multiple datasets from different data suppliers. The manner in which the data is combined depends on the nature of the business need under consideration and may vary from the simple assembly of thematic representations through to sophisticated integration, analysis and rendering. In every case, the data suppliers and processors need to share a common understanding of the data's characteristics to ensure their appropriate interpretation and use. The more complex or automated the processing becomes, the more necessary it is for this understanding to be unambiguous.

A challenge that arises when combining disparate datasets stems from differing terminology conventions adopted by the contributing suppliers. Frequently, a dataset will originate from a community of professionals that provide support to a particular industry (for example, road transport). The terminology used to describe the content, relationships and behaviour of the data reflects the industry's alignment of concepts with its specialist culture, conventions and practices. A particular concept, therefore, may be identified by different terms depending on the industry context in which it is used.

The capacity to combine data that have been sourced from different professional communities is dependent upon a common comprehension of the terms and concepts used to describe the business meaning of the data. The availability of cross-mapping that reconciles the semantic differences between the communities' vocabularies is therefore required.

This document establishes a methodology for cross-mapping between vocabularies. It is principally intended for use by geospatial communities but may have wider application.

It is not the objective of this document to define an ontology or taxonomy; its purpose is to provide rules for ensuring consistency when implementing cross-mapping processes. The rules, however, have been developed with regard to taxonomic and ontological concepts and with a view to enabling semantic interoperability. Their application to vocabulary cross-mapping, therefore, can be expected to provide input to any future ontology or taxonomy initiatives.

This document applies the provisions of ISO 19135-1:2015 to the registration of geospatial concepts. It also adopts terms and concepts that are taken from UML and terminology theory and practice.

Geographic information — Cross-domain vocabularies

1 Scope

This document establishes a methodology for cross-mapping vocabularies. It also specifies an implementation of ISO 19135-1:2015 for the purpose of registering cross-mapped vocabulary entries.

Methodologies for the development of ontologies and taxonomies that relate to geographic information and geomatics are not within the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 19103:2015, *Geographic information — Conceptual schema language*

ISO 19104:2016, *Geographic information — Terminology*

ISO 19115-1:2014, *Geographic information — Metadata — Part 1: Fundamentals*

ISO 19135-1:2015, *Geographic information — Procedures for item registration — Part 1: Fundamentals*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at <http://www.electropedia.org/>

— ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1.1

associative concept system

concept system (3.1.5) based on *associative relations* (3.1.2)

3.1.2

associative relation

pragmatic relation

relation between two *concepts* (3.1.4) having a non-hierarchical thematic connection by virtue of experience

Note 1 to entry: An associative relation exists between the concepts 'education' and 'teaching', 'baking' and 'oven'.

[SOURCE: ISO 1087-1:2000, 3.2.23]

3.1.3

characteristic

abstraction of a property of an object or of a set of objects

Note 1 to entry: Characteristics are used for describing *concepts* (3.1.4).

[SOURCE: ISO 1087-1:2000, 3.2.4]

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3.1.4

concept

unit of knowledge created by a unique combination of *characteristics* ([3.1.3](#))

Note 1 to entry: Concepts are not necessarily bound to particular languages. They are, however, influenced by the social or cultural background which often leads to different categorizations.

[SOURCE: ISO 1087-1:2000, 3.2.1]

3.1.5

concept system

system of concepts

set of *concepts* ([3.1.4](#)) structured according to the relations among them

[SOURCE: ISO 1087-1:2000, 3.2.11]

3.1.6

cross-map entry

part of a *cross-mapping* ([3.1.8](#)) data collection which documents the cross-mapped relationships between two *concepts* ([3.1.4](#))

3.1.7

cross-map register

register of cross-map entries ([3.1.6](#))

Note 1 to entry: A cross-map register may be realized as a subregister in a hierarchical register. In such cases, the *term* ([3.1.28](#)) "cross-map subregister" may be used.

3.1.8

cross-mapping

comparison of *terminological entries* ([3.1.31](#)) from different *domains* ([3.1.12](#)) to determine their semantic relationship

3.1.9

definition

representation of a *concept* ([3.1.4](#)) by a descriptive statement which serves to differentiate it from related concepts

[SOURCE: ISO 1087-1:2000, 3.3.1]

3.1.10

delimiting characteristic

essential characteristic ([3.1.14](#)) used for distinguishing a *concept* ([3.1.4](#)) from related concepts

Note 1 to entry: The delimiting characteristic *support for the back* may be used for distinguishing the concepts 'stool' and 'chair'.

[SOURCE: ISO 1087-1:2000, 3.2.7]

3.1.11

designation

designator

representation of a *concept* ([3.1.4](#)) by a sign which denotes it

Note 1 to entry: In terminology work three types of designations are distinguished: symbols, appellations and *terms* ([3.1.28](#)).

[SOURCE: ISO 1087-1:2000, 3.4.1]

3.1.12

domain

<general vocabulary> distinct area of human knowledge to which a terminological entry ([3.1.31](#)) is assigned

Note 1 to entry: Within a database or other terminology collection, a set of domains will generally be defined. More than one domain can be associated with a given *concept* ([3.1.4](#)).

[SOURCE: ISO 19104:2016, 4.11]

3.1.13

domain concept

concept ([3.1.4](#)) that is associated with a specific *domain* ([3.1.12](#))

Note 1 to entry: A concept may be associated with several domains and separately identified as a domain concept in relation to each.

3.1.14

essential characteristic

characteristic ([3.1.3](#)) which is indispensable to understanding a *concept* ([3.1.4](#))

[SOURCE: ISO 1087-1:2000, 3.2.6]

3.1.15

general concept

concept ([3.1.4](#)) which corresponds to two or more objects which form a group by reason of common properties

Note 1 to entry: Examples of general concepts are 'planet', 'tower'.

[SOURCE: ISO 1087-1:2000, 3.2.3]

3.1.16

generic concept

concept ([3.1.4](#)) in a *generic relation* ([3.1.18](#)) having the narrower *intension* ([3.1.20](#))

Note 1 to entry: In this context, a narrower intension means fewer *characteristics* ([3.1.3](#)), resulting in a *concept definition* ([3.1.9](#)) with a broader scope.

[SOURCE: ISO 1087-1:2000, 3.2.15, modified — Note 1 to entry has been added.]

3.1.17

generic concept system

concept system ([3.1.5](#)) in which *concepts* ([3.1.4](#)) that belong to the category of the *subordinate concept* ([3.1.25](#)) are part of the extension of the *superordinate concept* ([3.1.26](#))

3.1.18

generic relation

genus-species relation

relation between two *concepts* ([3.1.4](#)) where the *intension* ([3.1.20](#)) of one of the concepts includes that of the other concept and at least one additional *delimiting characteristic* ([3.1.10](#))

Note 1 to entry: A generic relation exists between the concepts 'word' and 'pronoun', 'vehicle' and 'car', 'person' and 'child'.

[SOURCE: ISO 1087-1:2000, 3.2.21]

3.1.19

homonymy

relation between *designations* ([3.1.11](#)) and *concepts* ([3.1.4](#)) in a given language in which one designation represents two or more unrelated concepts

Note 1 to entry: An example of homonymy is: