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Geographic information — Cross-domain vocabularies

Information géographique — Vocabulaires interdomaines

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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.

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

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member 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 shall not be held responsible for identifying any or all such patent rights.

ISO 19146 was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*.

Introduction

A common language is an essential prerequisite to effective communication. However, a simple knowledge of a language's vocabulary is insufficient to ensure communication integrity. A word can have several meanings depending on the context in which it is used. Similarly, a concept can be referenced by several words, each communicating a different connotation or level of emphasis.

The issues associated with the correct use of language extend far beyond day-to-day communication. Every field of endeavour, from engineering to cookery, has its own technical language and vocabulary. In order to participate in discussions on a subject, it is necessary to understand both the subject's terminology and the context in which it is to be used. The imprecise use of technical or professional language (for example, by using two terms interchangeably when, in fact, they have distinctly different connotations) gives rise to the same traps and dangers associated with the inappropriate use of a spoken language.

This International Standard establishes a methodology for cross-mapping technical vocabularies that have been adopted by industry-focussed geospatial communities (for example, geospatial communities supporting the transport or utilities industries). The processes relate to the unique identification of concepts and ensuring the existence of monosemic relations between concepts and designations. The methodology aims to ensure the consistent use of cross-mapping processes when associating disparate geospatial vocabularies and identifying synonyms.

It is not the objective of this International Standard to define an ontology or taxonomy for geographic information and geomatics. 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/taxonomy initiatives.

This International Standard applies the provisions of ISO 19135 to the registration of geospatial concepts. An online register of cross-mapped terminology entries, conforming to the requirements of ISO 19135, is associated with this International Standard. Administrative arrangements for the population and maintenance of the online register are beyond the scope of this International Standard. However, the provisions of ISO 19135 relating to the maintenance of registers apply.

This International Standard adopts terms and concepts that are taken from UML and terminology theory and practice. A cross-mapping between the two terminologies can be found in ISO/TR 24156:2008.

Geographic information — Cross-domain vocabularies

1 Scope

This International Standard defines a methodology for cross-mapping technical vocabularies that have been adopted by industry-specific geospatial communities. It also specifies an implementation of ISO 19135 for the registration of geographic information concepts for the purpose of integrating multiple domain-based vocabularies.

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

2 Conformance

Any vocabulary cross-mapping that claims conformance to this International Standard shall satisfy all of the conditions specified in the following abstract test suites:

a) Annex A of this International Standard, and

b) ISO 19135:2005, A.1 and A.2 for conformance to ISO 19135.

A vocabulary cross-mapping register 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 as specified in ISO 19135:2005, A.3.

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/TS 19104:2008, *Geographic information — Terminology*

ISO 19115:2003, *Geographic information — Metadata*

ISO 19135:2005, *Geographic information — Procedures for item registration*