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Geographic information — Terminology

National foreword

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 211, *Geographic information/Geomatics*.

This first edition of ISO 19104 cancels and replaces ISO/TS 19104:2008, which has been technically revised.

Introduction

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

The issues associated with language extend far beyond day-to-day communication. Every field of endeavour, from engineering to cookery, has its own vocabulary. To participate in discussions on a subject, it is necessary to understand both the terms and the context in which they are used. Imprecise usage (for example, by using two terms interchangeably when, in fact, they have distinctly different connotations) may have unfortunate consequences.

The risks compound considerably when translating terminology from one language (for example, English) to another (for example, Mandarin Chinese). The different cultures, language structures and character sets can present difficulties in ensuring that terminological entries in both languages have precisely the same meaning.

This document specifies requirements for the development of terminological entries in the field of geographic information. Its scope includes the development of concepts, the content and drafting of terminological entries, and the presentation of terminological records. It also includes guidelines for the cultural and linguistic adaptation of terminological entries based on the provisions of ISO 10241-2.

This document applies the provisions of ISO 19135-1 to the registration of geospatial concepts. A schema for the establishment of multi-lingual terminology registers is provided. The provisions of ISO 19135-1 regarding the management and maintenance of registers are also applied.

Geographic information — Terminology

1 Scope

This document specifies requirements for the collection, management and publication of terminology in the field of geographic information.

The scope of this document includes

— selection of concepts, harmonization of concepts and development of concept systems,

— structure and content of terminological entries,

— term selection,

— definition preparation,

— cultural and linguistic adaptation,

— layout and formatting requirements in rendered documents, and

— establishment and management of terminology registers.

This document is applicable to International Standards and Technical Specifications in the field of geographic information.

2 Conformance

2.1 Conformance class overview

This document defines two aggregate conformance classes, namely

— terminological entry – for preparing and publishing terminological entries, and

— terminology register – for establishing and managing terminology registers.

Any terminological entry or terminology register claiming conformance with this document shall comply with its respective aggregate conformance class and shall satisfy the associated abstract test suite requirements described in Annex A.

2.2 Terminological entry conformance class

2.2.1 Terminological entry aggregated conformance classes

The terminological entry conformance class is an aggregate of five distinct conformance classes, namely

— selection and harmonization of concepts,

— terminological entry content,

— terminological entry drafting,

— cultural and linguistic adaptation, and

— layout and formatting of terminological entries.

The characteristics of the terminological entry conformance class are defined in Table 1.

Table 1 — Terminological entry conformance class

Conformance class identifier	terminological entry <http://standards.iso.org/iso/19104/conf/tent>
Standardization target	terminological entry
Dependency	2.2.2 – Selection and harmonization of concepts conformance class <http://standards.iso.org/iso/19104/conf/con>
Dependency	2.2.3 – Terminological entry content conformance class <http://standards.iso.org/iso/19104/conf/tmm>
Dependency	2.2.4 – Terminological entry drafting conformance class <http://standards.iso.org/iso/19104/conf/ted>
Dependency	2.2.5 – Cultural and linguistic adaptation conformance class <http://standards.iso.org/iso/19104/conf/cla>
Dependency	2.2.6 – Layout and formatting of terminological entries conformance class <http://standards.iso.org/iso/19104/conf/pub>
Requirements	All requirements in Tables 2, 3, 4, 5 and 6.
Tests	All tests in Tables 2, 3, 4, 5 and 6.

2.2.2 Selection and harmonization of concepts conformance class

Table 2 defines the characteristics of the conformance class for the selection and harmonization of concepts.

Table 2 — Selection and harmonization of concepts conformance class

Conformance class identifier	concept selection <http://standards.iso.org/iso/19104/conf/con>
Standardization target	terminological entry
Dependency	ISO 704:2009
Dependency	ISO 860:2007
Dependency	ISO 10241-1:2011
Requirements	All requirements in Clause 7 <http://standards.iso.org/iso/19104/req/con>
Tests	All tests in A.1

2.2.3 Terminological entry content conformance class

Table 3 defines the characteristics of the conformance class for terminological entry content.

Table 3 — Terminological entry content conformance class

Conformance class identifier	terminological entry content <http://standards.iso.org/iso/19104/conf/tmm>
Standardization target	terminological entry
Dependency	ISO 704:2009
Dependency	ISO 10241-1:2011
Requirements	All requirements in 8.2 <http://standards.iso.org/iso/19104/req/tmm>
Tests	All tests in A.2

2.2.4 Terminological entry drafting conformance class

Table 4 defines the characteristics of the conformance class for terminological entry drafting.

Table 4 — Terminological entry drafting conformance class

Conformance class identifier	terminological entry drafting <http://standards.iso.org/iso/19104/conf/ted>
Standardization target	terminological entry
Dependency	ISO 704:2009
Dependency	ISO 10241-1:2011
Requirements	All requirements in 8.3 <http://standards.iso.org/iso/19104/req/ted>
Tests	All tests in A.3

2.2.5 Cultural and linguistic adaptation conformance class

Table 5 defines the characteristics of the conformance class for cultural and linguistic adaptation.

Table 5 — Cultural and linguistic adaptation conformance class

Conformance class identifier	cultural and linguistic adaptation <http://standards.iso.org/iso/19104/conf/cla>
Standardization target	terminological entry
Dependency	ISO/IEC Guide 21-1
Dependency	ISO 10241-2:2012
Requirements	All requirements in 8.4 <http://standards.iso.org/iso/19104/req/cla>
Tests	All tests in A.4

2.2.6 Layout and formatting of terminological entries conformance class

Table 6 defines the characteristics of the conformance class for the layout and formatting of terminological entries.

Table 6 — Layout and formatting of terminological entries conformance class

Conformance class identifier	layout and formatting <http://standards.iso.org/iso/19104/conf/pub>
Standardization target	terminological entry
Dependency	ISO 10241-1:2011
Requirements	All requirements in 9 <http://standards.iso.org/iso/19104/req/pub>
Tests	All tests in A.5

2.3 Terminology register conformance class

2.3.1 Terminology register aggregated conformance classes

The terminology register conformance class is an aggregate of four distinct conformance classes, being:

— terminology register structure,

— terminology register stakeholder,

— terminology register information package,

— terminology register schema.

The characteristics of the terminology register conformance class are defined in Table 7.

Table 7 — Terminology register conformance class

Conformance class identifier	terminology register <http://standards.iso.org/iso/19104/conf/treg>
Standardization target	terminology register
Dependency	2.3.2 – Terminology register structure conformance class <http://standards.iso.org/iso/19104/conf/trs>
Dependency	2.3.3 – Terminology register stakeholder conformance class <http://standards.iso.org/iso/19104/conf/tst>
Dependency	2.3.4 – Terminology register information package conformance class <http://standards.iso.org/iso/19104/conf/tri>
Dependency	2.3.5 – Terminology register schema conformance class <http://standards.iso.org/iso/19104/conf/sch>
Requirements	All requirements in Tables 8, 9, 10 and 11
Tests	All tests in Tables 8, 9, 10 and 11

2.3.2 Terminology register structure conformance class

Table 8 defines the characteristics of the conformance class for terminology register structure.

Table 8 — Terminology register structure conformance class

Conformance class identifier	terminology register structure <http://standards.iso.org/iso/19104/conf/trs>
Standardization target	terminology register
Dependency	ISO 19135-1:2015
Requirements	All requirements in 10.2 <http://standards.iso.org/iso/19104/req/trs>
Tests	All tests in A.6

2.3.3 Terminology register stakeholder conformance class

Table 9 defines the characteristics of the conformance class for terminology register stakeholders.

Table 9 — Terminology register stakeholder conformance class

Conformance class identifier	terminology register stakeholder <http://standards.iso.org/iso/19104/conf/tst>
Standardization target	terminology register
Dependency	ISO 19135-1:2015
Requirements	All requirements in 10.3 <http://standards.iso.org/iso/19104/req/tst>
Tests	All tests in A.7

2.3.4 Terminology register information package conformance class

Table 10 defines the characteristics of the conformance class for terminology register information packages.

Table 10 — Terminology register information package conformance class

Conformance class identifier	terminology register information package <http://standards.iso.org/iso/19104/conf/tri>
Standardization target	terminology register
Dependency	ISO 19135-1:2015
Requirements	All requirements in 10.4 <http://standards.iso.org/iso/19104/req/tri>
Tests	All tests in A.8

2.3.5 Terminology register schema conformance class

Table 11 defines the characteristics of the conformance class for terminology register schema.

Table 11 — Terminology register schema conformance class

Conformance class identifier	terminology register schema <http://standards.iso.org/iso/19104/conf/sch>
Standardization target	terminology register
Dependency	ISO 19103:2015
Dependency	ISO 19115-1:2014
Dependency	ISO 19135-1:2015
Requirements	All requirements in 10.5 <http://standards.iso.org/iso/19104/req/sch>
Tests	All tests in A.9

3 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 639-2, *Codes for the representation of names of languages — Part 2: Alpha-3 code*

ISO 690, *Information and documentation — Guidelines for bibliographic references and citations to information resources*

ISO 704:2009, *Terminology work — Principles and methods*

ISO 860:2007, *Terminology work — Harmonization of concepts and terms*

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*

ISO 10241-1:2011, *Terminological entries in standards — Part 1: General requirements and examples of presentation*

ISO 10241-2:2012, *Terminological entries in standards — Part 2: Adoption of standardized terminological entries*

ISO 12615, *Bibliographic references and source identifiers for terminology work*

ISO 19103:2015, *Geographic information — Conceptual schema language*

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

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

4 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

NOTE The core list of terms and definitions from the ISO/TC 211 geographic information International Standards and Technical Specifications is available at <http://www.isotc211.org/>.

4.1
abbreviation
designation (4.10) formed by omitting words or letters from a longer form and designating the same *concept* (4.3)

[SOURCE: ISO 1087-1:2000, 3.4.9]

4.2
admitted term
term (4.34) rated according to the scale of the term acceptability rating as a synonym for a *preferred term* (4.21)

Note 1 to entry: An admitted term is an acceptable alternative to a preferred term.

[SOURCE: ISO 1087-1:2000, 3.4.16, modified — the Note 1 to entry has been added.]

4.3
concept
unit of knowledge created by a unique combination of characteristics

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]

4.4
concept field
unstructured set of thematically related *concepts* (4.3)

[SOURCE: ISO 1087-1:2000, 3.2.10]

4.5
concept harmonization
activity leading to the establishment of a correspondence between two or more closely related or overlapping *concepts* (4.3) having professional, technical, scientific, social, economic, linguistic, cultural or other differences, in order to eliminate or reduce minor differences between them

Note 1 to entry: The purpose of concept harmonization is to improve communication.

[SOURCE: ISO 860:2007, 3.1]

4.6
concept system
set of *concepts* (4.3) structured according to the relations among them

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

4.7
data category
result of the specification of a specific type of *terminological data* (4.36)

[SOURCE: ISO 10241-1:2011, 3.1.4]

4.8
definition
representation of a *concept* (4.3) by a descriptive statement which serves to differentiate it from related concepts

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

4.9
deprecated term
term (4.34) rated according to the scale of the term acceptability rating as undesired

[SOURCE: ISO 1087-1:2000, 3.4.17]

4.10
designation
designator
representation of a *concept* (4.3) by a sign which denotes it

Note 1 to entry: In terminology work, three types of designations are distinguished: symbols, appellations and *terms* (4.34).

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

4.11
domain
<general vocabulary> distinct area of human knowledge to which a *terminological entry* (4.37) 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* (4.3).

[SOURCE: ISO 19146:2010, 4.9, modified — In the definition, the words terminological record have been changed to *terminological entry*.]

4.12
hierarchical register
structured set of *registers* (4.26) for a domain of register items, composed of a *principal register* (4.22) and a set of *subregisters* (4.32)

EXAMPLE ISO/IEC 6523 (all parts) is associated with a hierarchical register. The principal register contains organization identifier schemes and each subregister contains a set of organization identifiers that comply with a single organization identifier scheme.

Note 1 to entry: Each subregister is a register in its own right.

[SOURCE: ISO 19135-1:2015, 4.1.4, modified — Note has been added.]

4.13
homograph
designation (4.10) having the same written form as another designation representing a different *concept* (4.3)

EXAMPLE 1 The homographic term "die" as a noun represents different concepts in the domains of manufacturing, integrated circuits and table-top games.

EXAMPLE 2 The homographic graphical symbol  (e.g. in an airport or train station) may mean "up" (e.g. an escalator) or "straight ahead" depending on the location's surroundings.

[SOURCE: ISO 10241-1:2011, 3.4.1.4]

4.14
homonymy
relation between *designations* (4.10) and *concepts* (4.3) in a given language in which one designation represents two or more unrelated concepts

Note 1 to entry: An example of homonymy is:

bark

1 "sound made by a dog",

2 "outside covering of the stem of woody plants",

3 "sailing vessel".

Note 2 to entry: The designations in the relation of homonymy are called homonyms.

[SOURCE: ISO 1087-1:2000, 3.4.25]

4.15
homophone
one of two or more words that are pronounced the same but differ in meaning, origin, and sometimes spelling

EXAMPLE *night* and *knight*.

4.16
item class
set of items with common properties

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

[SOURCE: ISO 19135-1:2015, 4.1.7]

4.17
language
system of signs for communications usually consisting of vocabulary and rules

Note 1 to entry: In this document, language refers to natural language or special languages but not to programming languages or artificial languages unless specifically identified.

[SOURCE: ISO 5127:2001, 1.1.2.01, modified — Note has been added.]

4.18
language identifier
information in a *terminological entry* (4.37) which indicates the name of a *language* (4.17)

[SOURCE: ISO 1087-1:2000, 3.8.8]

4.19
non-verbal representation
representation of a *concept* (4.3) by means other than a descriptive statement, while revealing characteristics of this concept

Note 1 to entry: A non-verbal representation can be a chemical or mathematical formula, a pictographic representation or a figure, table or other kind of visual or non-visual representation revealing characteristics of the concept concerned.

[SOURCE: ISO 10241-1:2011, 3.4.2.3, modified — The reference to the examples has been removed.]

4.20
obsolete term
term (4.34) which is no longer in common use

[SOURCE: ISO 1087-1:2000, 3.4.18]

4.21
preferred term
term (4.34) rated according to the scale of the term acceptability rating as the primary term for a given *concept* (4.3)

[SOURCE: ISO 1087-1:2000, 3.4.15]

4.22
principal register
register (4.26) that contains a description of each of the *subregisters* (4.32) in a *hierarchical register* (4.12)

[SOURCE: ISO 19135-1:2015, 4.1.8]

4.23
reference environment
geographical and cultural environment in which a *concept* (4.3) is conceived and perceived

4.24
reference language
language (4.17) specified for the development and description of *concepts* (4.3)

EXAMPLE The reference language for the ISO/TC 211 Multi-Lingual Glossary of terms is English.

Note 1 to entry: See *submitted language* (4.29).

4.25
reference language subregister
subregister (4.32) in a hierarchical multi-lingual *terminology register* (4.39) that contains only *terminological entries* (4.37) in the *reference language* (4.24)

4.26
register
set of files containing identifiers assigned to items with descriptions of the associated items

[SOURCE: ISO 19135-1:2015, 4.1.9]

4.27
simple register
register (4.26) containing items of a single *item class* (4.16)

EXAMPLE A register containing *terminological entries* (4.37) in a single specified language.

4.28
subject field
field of special knowledge

[SOURCE: ISO 1087-1:2000, 3.1.2]

4.29
submitted language
language (4.17) that is not the *reference language* (4.24)

Note 1 to entry: Terminological entries presented in a submitted language are translated from equivalent *terminological entries* (4.37) in the reference language.

4.30
submitted language subregister
subregister (4.32) in a hierarchical multi-lingual *terminology register* (4.39) that contains only *terminological entries* (4.37) in a single *submitted language* (4.29)

4.31
subordinate concept
narrower concept
concept (4.3) which is either a specific concept or a partitive concept

[SOURCE: ISO 1087-1:2000, 3.2.14]

4.32
subregister
part of a *hierarchical register* (4.12) that contains items from a partition of a domain of information

[SOURCE: ISO 19135-1:2015, 4.1.16]

4.33
technical standard
<register> standard containing the definitions of *item classes* (4.16) requiring registration

[SOURCE: ISO 19135-1:2015, 4.1.18]

4.34
term
verbal *designation* (4.10) of a general *concept* (4.3) in a specific *subject field* (4.28)

Note 1 to entry: A term may contain symbols and can have variants, e.g. different forms of spelling.

[SOURCE: ISO 1087-1:2000, 3.4.3]

4.35
term equivalent
term (4.34) in another *language* (4.17) which designates the same *concept* (4.3)

Note 1 to entry: A term equivalent should be accompanied by a *definition* (4.7) of the designated concept expressed in the same language as the term equivalent.

4.36
terminological data
data related to *concepts* (4.3) or their *designations* (4.10)

[SOURCE: ISO 1087-1:2000, 3.8.1, modified — The accompanying note to the entry for terminological data has been omitted.]

4.37
terminological entry
part of a *terminological data collection* (ISO 10241-1:2011, 3.1.2) which contains the *terminological data* (4.36) related to one *concept* (4.3)

Note 1 to entry: A terminological entry prepared in accordance with the principles and methods given in ISO 704 follows the same structural principles whether it is monolingual or multi-lingual.

[SOURCE: ISO 1087-1:2000, 3.8.2, modified — Note 1 to entry has been added.]

4.38
terminological entry identifier
unique, unambiguous, and linguistically neutral identifier assigned to a *terminological entry* (4.37)

4.39
terminology register
register (4.26) of *terminological entries* (4.37)

Note 1 to entry: A terminology register may be structured according to *language* (4.17) and/or *domain* (4.11).

4.40
terminology repository
data store or document in which *terms* (4.34) and their associated *definitions* (4.8) are stored or recorded

5 Abbreviated terms

CD	committee draft
DIS	draft International Standard
FDIS	final draft International Standard
GIS	geographic information system
IT	information technology
IUT	implementation under test
ODP	open distributed processing
PT	project team
TC	technical committee
TMG	Terminology Maintenance Group
UML	Unified Modeling Language
WD	working draft

6 General principles

The development of a terminological entry requires the simultaneous satisfaction of three requirements, namely

— the identification of the concept,

— the nomination of a designation (usually a term) for that concept, and

— the construction of a definition, associated with the designation, that unambiguously describes the concept.

The consistent resolution of the three will be guided by the basic principle that

— for each concept there is a single term (and vice-versa), and

— for each concept there is a single definition (and vice-versa).

Therefore, when developing a standard terminology within the field of geographic information

— every effort shall be made to avoid use of a single term for multiple concepts and multiple terms for a single concept,

— every effort shall be made to avoid contradictions occurring in terminological entries in closely related standards,

— only the concepts relevant to the subject or scope of the standard shall be defined, and

— the form of a definition shall be such that it can replace the term in context (i.e. principle of substitution).

7 Selection and harmonization of concepts

7.1 General

The development of terminology requires a detailed understanding of the concepts that characterize the domain or subject area.

Concepts do not exist as isolated units of knowledge but always in relation to each other. Concepts that are structured according to the relations among them are said to form a concept system. A concept system provides a structural representation of the concepts of a subject field. Its modelling requires that the concepts of the subject field be examined and compared. The comparison process helps avoid gaps and overlaps being introduced into the conceptual model.

When organizing concepts into a concept system, it is necessary to be cognisant of the subject field that gave rise to the concept, and to consider the expectations and objectives of the target users. The subject field shall act as the framework within which the concept field is established (see ISO 704:2009, 5.5.1).

Concepts and terms develop differently in individual languages and language communities, depending on professional, technical, scientific, social, economic, linguistic, cultural or other factors (see ISO 860:2007, 0.1). Any asymmetry between languages may result in some unexpected anomalies. For example, the concept “library” in English corresponds to two concepts in Japanese: “toshokan” and “toshoshitsu”. Similarly, the English terms “period” and “periodic time” best translate to “période” in French.

Concept harmonization, within and between domains (and also across multiple languages), may therefore be necessary. Harmonization starts at the concept level and continues at the term level. It is an integral part of standardization.

The principles and methods for identifying concepts and developing concept systems are specified in ISO 704.

7.2 Requirements Class — Selection and harmonization of concepts

The requirements for selecting and harmonizing concepts for a geographic information standard or technical specification comprise a single requirements class (see Table 12), identified as <http://standards.iso.org/iso/19104/req/con> and abbreviated as 19104con.

Table 12 — Requirements class for selection and harmonization of concepts

Requirements class	
19104con = <http://standards.iso.org/iso/19104/req/con>	
Target type	Terminological entry
Dependency	ISO 704:2009
Dependency	ISO 860:2007
Dependency	ISO 10241-1:2011
Requirement	Selection of concepts
Requirement	Development of concept system
Requirement	Harmonization of concepts

7.3 Requirement — Selection of concepts

The requirements regarding the selection of concepts are identified in Table 13.

Table 13 — Selection of concepts requirement

Requirement
<19104con:conceptSelection>
Any concept that requires formal definition to clarify the understanding of a geographic information standard or technical specification shall have a terminological entry included in the terminology of that document. Each concept shall be central to understanding the standard and shall not be self-explanatory. — The concepts discussed in the normative clauses of the document (including those represented by UML or similar models) shall be reviewed to determine whether their inclusion in the document's terminology is appropriate. Existing concepts (including their terms and definitions) shall be reused to the maximum possible extent. — Current terminology repositories maintained by ISO and its technical committees [for example, the terms and definitions component of the ISO Online Browsing Platform (http://www.iso.org/obp/ui/) and the ISO/TC 211 Multi-Lingual Glossary of Terms (http://www.isotc211.org/) shall be utilized to determine if existing concepts (in geographic information or related domains) exist. A single definition shall be associated with each concept. The concept's definition in the field of geographic information shall not correspond to that in general language dictionaries.

7.4 Requirement — Development of concept system

The requirements regarding the development of a concept system are specified in Table 14.

Table 14 — Development of concept system requirement

Requirement
<19104con:conceptSystemDevelopment>
A concept system for the concepts in a geographic information standard or technical specification shall be developed before finalizing terms and definitions. The development of the concept system shall be performed according to the provisions of ISO 704.

7.5 Requirement — Harmonization of concepts

The requirements regarding the harmonization of concepts are identified in Table 15.

Table 15 — Harmonization of concepts requirement

Requirement
<19104con:conceptHarmonization>
Current terminology repositories maintained by ISO and its technical committees [for example, the terms and definitions component of the ISO Online Browsing Platform (http://www.iso.org/obp/ui/) and the ISO/TC 211 Multi-Lingual Glossary of Terms (http://www.isotc211.org/) shall be utilized to identify any overlaps or inconsistencies between existing concepts (and their terminologies) and those proposed in the geographic information standard or technical specification. If harmonization of concepts (and terminologies) is required or recommended, it shall be performed according to the provisions of ISO 860.

8 Terminological entries

8.1 General

The requirements governing the structure and content of terminological entries in geographic information standards and technical specifications are presented in 8.2, 8.3, and 8.4. Based on the provisions of ISO 10241-1 and ISO 704, they specify

— the mandatory, conditional and optional data categories to be included in a terminological entry,

— the drafting requirements for each data category, and

— requirements relating to the adaptation of terminological entries into alternative cultural and linguistic environments.

It is important to recognize that different cultures may perceive and conceptualize the same object in different ways. Standardized concepts, concept systems and terminological entries may, therefore, require both structural adaptation and language translation when being imported into an alternative cultural and linguistic environment. The existence of preferred terms, admitted terms and deprecated terms for a concept in one language does not necessarily mean that there will be parallel preferred terms, admitted terms and deprecated terms for the same concept in other languages. The same is true for abbreviated forms of terms.

It is recommended that working groups and project teams be cognisant of cultural and linguistic adaptation issues when selecting terms and definitions, and consult with national bodies and/or professional organizations at an early stage to identify concept comprehension or language translation difficulties.

ISO 10241-2 establishes principles and guidelines for the cultural and linguistic adaptation of standardized terminological entries. The standard clarifies the challenges faced by non-English standardizing bodies during the process of adopting internationally standardized terminological entries. A summary of the guidelines shall be carried out as specified in Annex B.

8.2 Terminological entry content

8.2.1 Requirements Class — Terminological entry content

The requirements for the content of a terminological entry in a geographic information standard or technical specification comprise a single requirements class, identified as <http://standards.iso.org/iso/19104/req/tmm> and abbreviated as 19104tmm (see Table 16).

Table 16 — Requirements class for terminological entry content

Requirements class	
19104tmm = <http://standards.iso.org/iso/19104/req/tmm>	
Target type	Terminological entry
Dependency	ISO 704:2009
Dependency	ISO 10241-1:2011
Requirement	Terminological entry content

8.2.2 Requirement — Terminological entry content

A terminological entry shall include the mandatory data categories specified in Table 17.

A terminological entry shall include one or more of the conditional data categories specified in Table 17 if the respective condition for inclusion is satisfied.

A terminological entry may include one or more of the optional data categories specified in Table 18.

Drafting requirements for the individual data categories are specified in 8.3. In instances where a conditional or optional data category is included in a terminological entry, the content shall conform to the drafting requirements for that data category.

Table 17 — Terminological entry content — Mandatory and conditional data categories

Requirement
<19104tmm:terminologicalEntryContentRequirement>
Mandatory data categories A terminological entry shall include the following data categories: — Entry number (one only), — Preferred term (one only), — Definition (one only). Conditional data categories A terminological entry shall include one or more of the following data categories if the condition requiring inclusion is satisfied: — Admitted term (one or more) – If a term is associated with the concept, is commonly used in a certain context but only partly meets the requirements for a preferred term. — Deprecated term (one or more) – If a term is associated with the concept, is used in a certain context but does not meet the requirements for a preferred term or an admitted term. — Abbreviation for a preferred term and/or admitted term and/or deprecated term (one or more) – If an abbreviation has been defined and is routinely used. — Symbol (one or more) – If a symbol is a conventionally used designation of the concept or is internationally standardized. — Non-verbal representation (one or more) – If a representation is widely recognized and in common use. — Note to entry (one or more) – If inclusion is prescribed by a requirement of this document. — Source – If the entire terminological entry, a language section of the terminological entry, a term, letter symbol, graphical symbol, definition, context, non-verbal representation or example has been taken from another standard, a harmonized nomenclature or an external authoritative source.

Table 18 — Terminological entry content — Optional data categories

Option
<19104tmm:terminologicalEntryContentOption>
Optional data categories A terminological entry may include one or more of the following optional data categories: — Equivalent term (one or more) – If needed to present a term that represents the concept in a different language. — Non-verbal representation – If needed to exemplify a concept or to assist translation into other languages. NOTE 1 The option to include a non-verbal representation is in addition to the conditional requirement to include a non-verbal representation (see Table 17). — Example (one or more) – If needed to further illustrate a concept. — Note to entry (one or more) – If needed to elaborate a concept or provide contextual information. NOTE 2 The option to include a note to entry is in addition to the conditional requirement to include a note to entry (see Table 17).

8.3 Terminological entry drafting

8.3.1 Requirements Class — Terminological entry drafting

The drafting requirements for terminological entry data categories in a geographic information standard or technical specification comprise a single requirements class, identified as <http://standards.iso.org/iso/19104/req/ted> and abbreviated as 19104ted (see Table 19).

Table 19 — Requirements class for terminological entry drafting

Requirements class	
19104ted = <http://standards.iso.org/iso/19104/req/ted>	
Target type	Terminological entry
Dependency	ISO 704:2009
Dependency	ISO 10241-1:2011
Requirement	Entry number
Requirement	Preferred term
Requirement	Admitted term
Requirement	Deprecated term
Requirement	Equivalent term
Requirement	Abbreviation
Requirement	Symbol
Requirement	Definition
Requirement	Non-verbal representation
Requirement	Example
Requirement	Note to entry
Requirement	Source

8.3.2 Requirement — Entry number

The requirements regarding the entry number are specified in Table 20.

Table 20 — Entry number requirement

Requirement
<19104ted:entryNumberRequirement>
The entry number shall be part of the clause numbering of the standard or technical specification, in accordance with the rules for numbering divisions and subdivisions used by ISO. The entry number of a terminological entry shall be unique. EXAMPLES 4.1, 4.1.9

8.3.3 Requirement — Preferred terms, admitted terms, deprecated terms

The normative status (preferred, admitted or deprecated) of any designation, including the full forms and abbreviated forms of terms, shall be determined on the basis of the purpose and target group of the standard. It shall also take into consideration:

— whether a particular designation has already been harmonized,

— the designation's frequency of use,

— whether the designation is up-to-date.

The following general criteria, which relate to term-formation principles, should also be taken into account (see ISO 704:2009, 7.4.2):

— transparency, so that the term reveals the delimiting characteristics of the concept,

— consistency in using term elements, so that the term reveals the position of the concept in the corresponding concept system,

— appropriateness, so that the term adheres to familiar, established patterns of meaning within a language community,

— linguistic economy, so that the term is as concise as possible,

— derivability, so that derivatives can be formed according to the conventions of the language,

— linguistic correctness, so that the term conforms to the morphological, morphosyntactic and phonological conventions of the language(s),

— preference for native languages.

Adoption of homonyms should be avoided; if this is not possible, the domain or subject field associated with the concept shall be included with the definition [See 8.3.7 and Annex C].

A generic term shall not be allocated to a context-dependent concept.

The requirements regarding preferred terms, admitted terms and deprecated terms are specified in Tables 21, 22 and 23 respectively.

Table 21 — Preferred term requirement

Requirement
<19104ted:preferredTermRequirement>
A preferred term is a term that is commonly accepted and recognized by subject specialists as the principal term for the concept. A term recommended by a recognized standards body (for example, an ISO technical committee) shall be considered a preferred term. The term shall not be: — a trade name or trademark (constituting rights related to intellectual or industrial property), — the name of a research project, — obsolete and archaic, — Colloquial (local informal term to describe a formal term e.g. “guy” instead of “man”). An abbreviated form that is the recognized designation for a concept may be accepted as a preferred term. In such cases, the full form shall be accepted as an admitted term. EXAMPLE Preferred term — SONAR, Admitted term — Sound Navigation and Ranging. If it is considered necessary or useful to provide an explanation of the reasons for selecting the abbreviated form as preferred term, the explanation shall be given in a note to entry. If no term is available as the preferred term, a term from another domain or subject (or from another language or culture) may be used, or, a new term may be created on the basis of terminological principles.

Table 22 — Admitted term requirement

Requirement
<19104ted:admittedTermRequirement>
A term that only partly meets the requirements for a preferred term but is in common use in a certain context shall be chosen as an admitted term. An acceptable synonym for a preferred term shall be considered an admitted term. If there are several admitted terms, they shall be given in the order of preference. If an admitted term is a national variant, it shall be followed by a code as defined in ISO 3166-1; the numeric 3-digit code is used for the IT interface (i.e. stored in a database), while the meaning of this code is presented in human language for the user (i.e. the human interface). Subject to the requirement in Table 17, an abbreviation, if it exists, shall be included as an admitted term.

Table 23 — Deprecated term requirement

Requirement
<19104ted:deprecatedTermRequirement>
A term that does not meet the requirements for a preferred term or an admitted term but is in some use in a certain context shall be specified as a deprecated term. A term that has been rejected shall be considered a deprecated term. Obsolete terms, superseded terms, archaic terms, scientific-technical slang and other terms which are detrimental to domain communication shall be rated as deprecated terms. Both full forms and abbreviated forms may be selected as deprecated terms if their use is rated as undesired.

8.3.4 Requirement — Equivalent term

Terms in different languages (or in different dialects of the same language) that represent the same concept are equivalent terms (equivalents).

The requirements regarding equivalent terms are identified in Table 24.

Table 24 — Equivalent term requirement

Requirement
<19104ted:equivalentTermsRequirement>
Equivalent terms, when provided, shall be included in terminological entries as admitted terms. Equivalent terms shall be preceded by: — the numeric, 3 character country code as defined in ISO 3166-1, if needed, — the language code as defined in ISO 639-2 (e.g. “fra” for French, “deu” for German). Specificities in the usage of an equivalent term, including the degree of equivalence, may be explained in a note to entry.

8.3.5 Requirement — Abbreviation

The requirements regarding abbreviations are specified in Table 25.

Table 25 — Abbreviation requirement

Requirement
<19104ted:abbreviationRequirement>
Every abbreviation included in a terminological entry shall be accompanied by the full form of the term. The full form of the term shall itself be a preferred term, admitted term or deprecated term and shall not be included as a definition. EXAMPLE SONAR is an abbreviation. The full form of the term is “SOund Navigation And Ranging”. The definition of the concept that SONAR represents is “sensor that uses sound navigation and ranging technology for sensing”. The following terminological entry for SONAR is correct. It includes the abbreviation, the full form of the term, and the definition. SONAR Sound Navigation and Ranging sensor that uses sound navigation and ranging technology for sensing The following terminological entry for SONAR is incorrect. It includes the full form of the term as the definition instead of a description of the concept. SONAR *Sound Navigation And Ranging*

8.3.6 Requirement — Symbol

The requirements regarding symbols are identified in Table 26.

Complex letter symbols can include numerals, mathematical symbols, typographical signs and syntactic signs (e.g. punctuation marks, hyphens, parentheses, square brackets and other connectors or delimiters) whose character styles (i.e. font and bold, italic, bold italic or other style conventions) are governed by domain-, subject- or language-specific conventions. They are often also abbreviated forms, but may have additional communicative functions.

Table 26 — Symbol requirement

Requirement
<19104ted:symbolRequirement>
Symbols in standardized terminological entries shall not comprise trademarks (i.e. registered marks, brands or logos) which constitute rights related to intellectual or industrial property. Characters that replace words or parts of words, such as mathematical symbols or currency symbols, shall be considered symbols. Alphanumeric codes made up of combinations of letters, numbers or both shall be considered symbols if they do not represent words in a natural language or abbreviated form. Terms using the letters of the alphabet as iconic symbols to communicate the shape of the letter itself rather than its sound shall not be considered a symbol. When there is more than one symbol representing a given concept, the symbols shall be presented in the order of preference of the standardizing body and their normative status shall be indicated. Where a letter symbol is specific to a particular language section, it may be complemented by a code for the name of the language in accordance with ISO 639-2, if necessary in combination with codes for names of countries in accordance with ISO 3166-1 or codes for names of scripts in accordance with ISO 15924. Where a graphical symbol is specific to a particular language section, it may be complemented by a code for names of countries in accordance with ISO 3166-1.

8.3.7 Requirement — Definition

The drafting of definitions shall be based on the general rules and principles laid down in ISO 704.

The requirements regarding definitions are identified in Table 27.

Table 27 — Definition requirement

Requirement
<19104ted:definitionRequirement>
Description of concept The definition shall consist of a single phrase precisely specifying the concept. It should be neither too narrow nor too broad, otherwise the definition is considered inaccurate. The definition shall be as concise as possible and as complex as necessary. It shall contain only information that makes the concept unique. Any additional descriptive information deemed necessary is to be included in a note to entry. The definition shall describe only one concept. It shall not include hidden definitions of other concepts, e.g. concepts denoting characteristics. Any characteristic that requires an explanation shall be defined as a separate concept in a separate entry or given in a note to entry. The definition shall reflect the concept system describing the concept and its relations to other concepts in the concept system. Definitions shall be systemic in order to enable the concept system to be reconstructed. The characteristics selected in a definition shall indicate the delimitation that distinguishes one concept from another or the connection between the concepts.

Table 27 *(continued)*

The definition shall not contain characteristics that belong logically to superordinate or subordinate concepts.
The definition shall describe a concept, not the words, abbreviations or elements that make up a designation.
The definition shall not take the form of, or contain, a requirement.
The definition shall describe what a concept is, not what it is not. However, when a concept is the opposite of another concept already defined, then the first concept may be defined by a negative definition using the second one's designation or the second one's definition.
Specification of domain or subject
If the specific domain or subject field is not clearly indicated in the designation or in the document title, it shall be placed before the definition on the same line.
Grammatical form and presentation
The definition shall have the same grammatical form as the term. Thus, to define a verb, a verbal phrase shall be used; to define a singular noun, the singular shall be used.
The definition shall not begin with an expression such as "term used to describe" or "term denoting"; neither shall it take the form "/term/ is…" or "/term/ means …".
The definition shall not begin with an article.
Preferred terms and symbols used within the definition shall be cited verbatim.
A preferred term defined elsewhere in the same standard may be highlighted and followed by its entry number.
Adaptations
If a cited definition needs to be adapted, such modification shall be kept to a minimum.
If an adaptation involves restructuring a definition, for example because the concept systems are not compatible, the definition shall be considered to have been modified. In this case, an indication of the modification shall follow the indication of the source.
Validation
The substitution principle shall be used to test the validity of a definition. A definition is valid if it can replace a designation (term) in discourse without loss of, or change in, meaning.
Circular definitions shall be avoided.

8.3.8 Requirement — Non-verbal representation

Non-verbal representations can be used to exemplify a concept. In general, they should not replace a definition but complement it.

Non-verbal representations in terminological entries in standards usually comprise visual representations such as figures (e.g. photographs and pictographic representations, technical drawings, charts, graphs, diagrams, etc.), tables and mathematical expressions. In some non-verbal representations, colour is semantically significant.

Inclusion of a non-verbal representation is mandatory if in common use. Non-verbal representations are not usually included in ISO geographic information standards and technical specifications, the characteristics of concepts being elaborated within the text of the document. Inclusion may be necessary in instances where the definition of a concept is difficult to translate between languages.

The requirements regarding non-verbal representations are identified in Table 28.

Table 28 — Non-verbal representation requirement

Requirement
<19104ted:nonverbalRepresentationRequirement>
A non-verbal representation shall be presented as conventionally used in the respective domain. Where a non-verbal representation has been cited from an international authority, the indication of the source shall be included.

8.3.9 Requirement — Examples

One or more examples may be included in a terminological entry if needed to illustrate the concept.

Examples may be language- or culture-dependent. The number of examples, as well as their content, in the different language sections of a multi-lingual terminological entry may therefore be different.

The requirements regarding examples are identified in Table 29.

Table 29 — Examples requirement

Requirement
<19104ted:examplesRequirement>
When several examples occur within the same terminological entry, they shall be numbered. A single example shall not be numbered. When an example has been cited from an external source, the source shall be indicated.

8.3.10 Requirement — Notes to entry

If needed (or if specified by a requirement of this document), one or more notes to entry shall be included in a terminological entry to elaborate the concept or provide contextual information.

The requirements regarding notes to entry are identified in Table 30.

Table 30 — Notes to entry requirement

Requirement
<19104ted:notesToEntryRequirement>
The information provided in a note to entry should clearly indicate (explicitly or implicitly) the data category to which it refers, i.e. term, letter symbol, graphical symbol, definition, context, non-verbal representation, example, a given language section of a multi-lingual terminological entry, or the entire terminological entry. A note to entry may be used to elaborate the nature, properties, scope, or non-essential qualities of the concept that are described by the terminological entry but are not specified by the definition element. Within any terminological entry, it shall be possible to refer uniquely to each note to entry. Therefore, all notes to entry shall be numbered. Where information in a note to entry originates from another source, the source of the information shall be indicated. EXAMPLE Note 2 to entry: A party is one or more natural or legal persons or organizations acting as a single recipient of a delivery [SOURCE: UPU S42:2006 — modified].

8.3.11 Requirement — Source

The requirements regarding the source reference are identified in Table 31.

Table 31 — Source requirement

Requirement
<19104ted:sourceRequirement>
For rendered documents, indications of the source shall be drafted in accordance with: — the ISO/IEC Directives, Part 2, for references to ISO and IEC documents; and — ISO 690 for references to other documents. For databases, indications of the source shall be coded in accordance with ISO 12615. If the source references to ISO and IEC documents are given in a bibliography, they shall be referred to using an identifier in accordance with the ISO/IEC Directives, Part 2. Modifications to the content of the source should be made explicit by adding an explanation to the indication of the source. EXAMPLE [SOURCE: ISO 19112:2003, 4.4, modified — Note 1 to entry has been added].

8.4 Cultural and linguistic adaptation

8.4.1 Requirements class — Cultural and linguistic adaptation

The requirements for the cultural and linguistic adaptation of terminological entries in a geographic information standard or technical specification comprise a single requirements class, identified as <http://standards.iso.org/iso/19104/req/cla> and abbreviated as 19104cla (see Table 32).

Table 32 — Requirements class for cultural and linguistic adaptation

Requirements class	
19104cla = <http://standards.iso.org/iso/19104/req/cla>	
Target type	Terminological entry
Dependency	ISO 10241-2:2012
Dependency	ISO/IEC Guide 21-1
Requirement	Reference environment
Requirement	Degree of correspondence

8.4.2 Requirement — Reference environment

The requirements regarding the reference environment are identified in Table 33.

Table 33 — Reference environment

Requirement
<19104cla:referenceEnvironment>
The language of the reference environment shall serve as the reference language for the translation of terminological entries. The translation of a terminological entry shall be from the reference language to that of the adopting organization. A terminological entry shall not be translated from the language of an adopting organization to that of another adopting organization.

8.4.3 Requirement — Degree of correspondence

It is necessary to determine the degree to which the technical content of each culturally and/or linguistically adapted terminological entry corresponds to that of the terminological entry in the reference language. ISO/IEC Guide 21-1 identifies, for standards, three degrees of correspondence that can be applied to an entire terminological entry or parts of it.

The requirements regarding degree of correspondence are identified in Table 34.

Table 34 — Degree of correspondence

Requirement
<19104cla:degreeOfCorrespondence>
The technical content of each culturally and/or linguistically adapted terminological entry shall be compared with that of the terminological entry in the reference language to determine the degree of correspondence. The degree of correspondence shall be classified as “Identical”, “Modified” or “Not equivalent” according to the following criteria: — **Identical** - The culturally and/or linguistically adapted terminological entry is identical to the terminological entry in the reference language in technical content, terminological data model and wording; it may, however, contain minor editorial changes. — **Modified** - The culturally and/or linguistically adapted terminological entry has clearly identified and explained technical changes or adaptations to the terminological data model of the terminological entry in the reference language. — **Not equivalent** - The culturally and/or linguistically adapted terminological entry is not equivalent to terminological entry in the reference language in technical content and the terminological data model, and the changes have not been clearly identified. If the degree of correspondence is “Modified” or “Not equivalent”, a note to entry shall be included as part of the culturally and/or linguistically adapted terminological entry explaining the differences.

9 Representation of terminological entries in rendered documents

9.1 General

Terminological entries in rendered documents are expected to conform to a specified layout and format to facilitate comprehension and interpretation by users.

The requirements regarding the layout and formatting of terminological entries in geographic information standards and technical specifications are presented in 9.2. They are based on examples of layout and presentation that are provided in ISO 10241-1:2011, Annex A.

9.2 Requirements Class — Layout and formatting of terminological entries

The requirements for the layout and formatting of terminological entries in geographic information standards and technical specifications comprise a single requirements class (see Table 35), identified as <http://standards.iso.org/iso/19104/req/pub> and abbreviated as 19104pub.

Table 35 — Requirements class for layout and formatting

Requirements class	
19104pub = <http://standards.iso.org/iso/19104/req/pub>	
Target type	Terminological entry
Dependency	ISO 10241-1:2011
Requirement	Terminological entry presentation

9.3 Requirement — Terminological entry presentation

The requirement regarding terminological entry presentation is identified in Table 36.

Table 36 — Terminological entry presentation requirement

Requirement
<19104pub:termPresentation>
The presentation of each terminological entry in a geographic information standard or technical specification shall conform to the layout and format specified in Annex C. If a geographic information standard or technical specification includes terminological entries in multiple languages: — the structure of each terminological entry shall be identical in all of the languages covered (with the exception of language-specific differences), — the order of the entries and the entry number of each terminological entry shall be identical in all language sections included in the document.

10 Terminology registers

10.1 General

A terminology register is a collection of uniquely identified terminological entries, structured according to language and/or domain. Its purpose is to facilitate consistency in the interpretation and application of concepts through the consolidated recording of standardized designations and definitions. A terminology register may be limited in scope, serving a single community of interest and single language group. Alternatively, it may include multiple domains and/or multiple languages (for example, Arabic, English, French, Chinese and Spanish).

ISO 19135-1 specifies procedures for the registration of items of geographic information. The items of geographic information that may be registered are members of item classes specified in technical standards such as those developed by ISO/TC 211. This document specifies registration procedures and a terminology register schema that conform to the requirements of ISO 19135-1. The items to be registered are members of the item classes "reference language subregister" (see 4.25), "submitted language subregister" (see 4.30) and "terminological entry" (see 4.37).

This document extends the requirements of ISO 19135-1 in 10.2, 10.3, 10.4 and 10.5.

10.2 Terminology register structure

10.2.1 Requirements class — Terminology register structure

This document makes provision for a terminology register to be either:

— a simple register containing terminological entries in a single language, or

— a hierarchical register containing terminological entries in two or more languages (multi-lingual).

The requirements for the structure of a geographic information terminology register comprise a single requirements class (see Table 37), identified as <http://standards.iso.org/iso/19104/req/trs> and abbreviated as 19104trs.

Table 37 — Requirements class for terminology register structure

Requirements class	
19104trs = <http://standards.iso.org/iso/19104/req/trs>	
Target type	Terminology Register
Dependency	ISO 19135-1:2015
Requirement	Simple terminology register

Table 37 *(continued)*

Requirements class	
Requirement	Hierarchical multi-lingual terminology register
Requirement	Reference language subregister
Requirement	Submitted language subregister

10.2.2 Requirement — Simple terminology register

The requirement for a simple terminology register is specified in Table 38.

Table 38 — Simple terminology register

Requirement
<19104trs:simpleTerminologyRegister>
A simple terminology register shall comprise a single register containing terminological entries in a single language. Every terminological entry entered into a simple terminology register shall be allocated a terminological entry identifier.

10.2.3 Requirement — Hierarchical multi-lingual terminology register

The requirement for a hierarchical multi-lingual terminology register is specified in Table 39.

Table 39 — Hierarchical multi-lingual terminology register

Requirement
<19104trs:hierarchicalMultiLingualTerminologyRegister>

A terminology register shall be implemented as a hierarchical multi-lingual register if some or all of its terminological entries are to be presented in more than one language.
A hierarchical terminology register shall include:
— a principal register,
— two or more subregisters that shall include:
  — a reference language subregister,
  — one or more submitted language subregisters.
The principal register shall hold a set of items that describe each of the subregisters.
Each subregister shall hold a set of terminological entries in a single specified language.
The principal register and each subregister shall be a register in its own right.
The principal register and reference language subregister shall have the same register owner and register manager. The submitted language subregisters may each have different register owners and register managers.
NOTE There is no requirement for the principal register and subregisters to be physically co-located.

10.2.4 Requirement — Reference language subregister

The requirement regarding the reference language subregister in a hierarchical multi-lingual terminology register is specified in Table 40.

Table 40 — Reference language subregister

Requirement
<19104trs:referenceLanguageSubregister>
The reference language shall be the language that has been specified by the owner of the principal register for the designation and definition of concepts in the field of geographic information. EXAMPLE The reference language for the ISO/TC 211 Multi-Lingual Glossary of Terms is English. The reference language subregister shall contain only terminological entries in the reference language. All proposals to add, amend, clarify, supersede, retire or invalidate a terminological entry shall be submitted in the reference language to ensure semantic consistency and shall be entered into the reference language subregister. Every terminological entry entered into the reference language subregister shall be allocated a terminological entry identifier.

10.2.5 Requirement — Submitted language subregister

The requirement regarding a submitted language subregister in a hierarchical multi-lingual terminology register is specified in Table 41.

Table 41 — Submitted language subregister

Requirement
<19104trs:submittedLanguageSubregister>
A submitted language shall be any language other than the reference language. EXAMPLE The submitted languages for the ISO/TC 211 Multi-Lingual Glossary of Terms include French, Arabic, Chinese, Japanese, Korean, Russian and several others. A terminological entry in a submitted language subregister shall be a translation or equivalent of a terminological entry in the reference language subregister. Each terminological entry in a submitted language subregister shall include the terminological entry identifier assigned to its corresponding terminological entry in the reference language subregister. NOTE This will enable terminological entries that describe the same concepts but in a different language to be linked.

10.3 Terminology register stakeholders

10.3.1 Requirements class — Terminology register stakeholders

The requirement for stakeholders of a geographic information terminology register comprises a single requirements class (see Table 42), identified as <http://standards.iso.org/iso/19104/req/tst> and abbreviated as 19104tst.

Table 42 — Requirements class for terminology register stakeholders

Requirements class	
19104tst = <http://standards.iso.org/iso/19104/req/tst>	
Target type	Terminology Register
Dependency	ISO 19135-1:2015
Requirement	Register stakeholders general requirement
Requirement	Terminology register owner
Requirement	Terminology register manager

10.3.2 Requirement — Register stakeholders general requirement

The general requirement regarding terminology register stakeholders is specified in Table 43.

Table 43 — Register stakeholders general requirement

Requirement
<19104tst:registerStakeholdersGeneralRequirement>
Every terminology register and subregister shall have: — a register owner, — a register manager, — at least one submitting organization.

10.3.3 Requirement — Terminology register owner

The register owner is an organization that has primary responsibility for the management, dissemination and intellectual content of the register. The requirement regarding a terminology register owner is specified in Table 44.

Table 44 — Terminology register owner

Requirement
<19104tst:termRegisterOwner>
The terminology register owner shall perform the functions specified in requirements 1 to 5 of ISO 19135-1:2015, Clause 5. The functions shall include determining: — the terms and conditions regarding access to the register, — the appointment of a register manager, — the optional establishment of a control body, — the criteria for determining the organizations that may act as submitting organizations, — the process for submitting organizations to appeal decisions of the control body (if established).

10.3.4 Requirement — Terminology register manager

The register owner may delegate the role of register manager to another organization. The requirement regarding a terminology register manager is specified in Table 45.

The register owner may establish a support group to assist the register manager. The terms of reference for this group, including its membership, period of tenure and operating procedures, shall be included in the information package for the register.

Table 45 — Terminology register manager

Requirement
<19104tst:termRegisterManager>
The register manager shall manage the register in accordance with requirements 6, 7, 8, 9, 11 and 12 in ISO 19135-1:2015. This shall include: — distributing an information package containing a description of the register and how to submit proposals for changes to the content of the register, — accepting, reviewing and managing proposals from qualified submitting organizations, — providing proposals to a control body (if established), — ensuring appropriate levels of access for submitting organizations and register users, — considering the requirements of different categories of users when selecting methods for publishing the content of a register, — managing individual items within the register, including their status, temporal history and unique identification.

10.4 Terminology register information package

10.4.1 Requirements class — Terminology register information package

The requirements for terminology register information packages associated with a geographic information terminology register comprise a single requirements class (see Table 46), identified as <http://standards.iso.org/iso/19104/req/tri> and abbreviated as 19104tri.

Table 46 — Requirements class for terminology register information package

Requirements class	
19104tri = <http://standards.iso.org/iso/19104/req/tri>	
Target type	Terminology Register
Dependency	ISO 19135-1:2015
Requirement	Information package general requirements
Requirement	Core information package
Requirement	Supplementary information package

10.4.2 Requirement — Information package general requirements

The general requirements regarding the preparation of an information package are specified in Table 47.

Table 47 — Information package general requirements

Requirement
<19104tri:infoPackageGeneral>
A terminology register information package shall be prepared for every terminology register. In the case of a simple terminology register, the information package shall satisfy the requirements specified for a core information package (see 10.4.3). In the case of a hierarchical multi-lingual terminology register, the information package shall satisfy the requirements specified for: — a core information package when documenting the processes used for the reference language subregister (see 10.4.3), — a supplementary information package when documenting the processes used for the principal register and submitted language subregisters (see 10.4.4). NOTE The core and supplementary information packages may be issued as a single document or multiple documents.

10.4.3 Requirement — Core information package

The requirement regarding a core information package is specified in Table 48.

An example of a core information package is included as Annex D.

Table 48 — Core information package for reference

Requirement
<19104tri:coreInformationPackage>

The register manager shall prepare an information package containing a description of the processes for adding, amending or clarifying terminological entries in the reference language.
The information package shall specify:
— the responsibilities of the register owner and register manager,
— the responsibilities of submitting organizations,
— the processes for submitting content or proposals,
— the processes for adding, amending or clarifying the content, including ensuring:
  — the general principles in Clause 6 have been satisfied,
  — the criteria for the selection of concepts in Clause 7 have been satisfied,
  — the requirements regarding terminological entry content in Clause 8 have been satisfied,
— the processes for initiating corrective action when requirements have not been met,
— the processes for harmonizing inconsistencies between terminological entries,
— the processes for superseding, retiring or invalidating a terminological entry in a register.

10.4.4 Requirement — Supplementary information package

The requirement regarding a supplementary information package is specified in Table 49.

An example of a supplementary information package is included as Annex E.

Table 49 — Supplementary information package

Requirement
<19104tri:suppInformationPackage>
The register manager shall prepare an information package containing a description of the process for adding translated terminological entries to a submitted language subregister. The information package shall specify: — the responsibilities of the register owner and register manager, — the responsibilities of submitting organizations regarding, — the translation of terminological entries into a submitted (national) language, — the ultimate authority for the submitted language, — the implementation of quality assurance procedures to ensure that each concept has been interpreted correctly, — the provision of appropriate authorization to allow translated terminological entries to be published as part of the register, — the provision of advice to the register owner of any changes to the translation of a terminological entry, — the processes for submitting, maintaining, updating, publishing and retiring content, — the arrangements for liaison and communication between the register owner, register manager and submitting organizations.

The information package may specify additional requirements considered necessary for the register. They may include:

— content and language translation considerations,

— the amount to be translated, timeframe and delivery,

— the use of non-verbal representations,

— multi-language and multi-country considerations including:

— one language, many countries,

— one country, many languages,

— one country, many character systems.

10.5 Terminology register schema

10.5.1 General

This clause specifies a conceptual schema for a terminology register.

The schema conforms to the provisions of ISO 19135-1 and adopts the core schema, hierarchical register schema and extended schema specified by that International Standard. The core schema specifies the minimum requirements for establishing, maintaining and publishing a register. The hierarchical register schema specifies the additional information needed for hierarchical registers. The extended schema specifies additional model elements that are frequently required in registers.

The schema specified by this document establishes a single package, TermRegister. The package groups together classes required for registering terminological entries. In general, the classes are subtypes of classes specified in ISO 19135-1.

The schema includes the requirements for both a simple terminology register and a hierarchical multilingual terminology register.

10.5.2 Notation

The conceptual schema specified by this document is described using the Unified Modeling Language (UML) following the guidance of ISO 19103.

Several model elements used in this document are defined in packages specified in other International Standards; these are listed in Table 50.

Table 50 — UML package identifiers

Prefix	Package
CI	Citation [ISO 19115-1]
RE	Register [ISO 19135-1]

In earlier versions of ISO/TC 211 standards, the names of UML classes (with the exception of basic data type classes) included a two-letter prefix that identified both the standard and the UML package in which the class was specified. In newer versions of ISO/TC 211 standards, this convention is no longer applied. The two letter prefixes specified for classes adopted from earlier International Standards are continued in this document. Classes and packages new to this document do not use a prefix.

In accordance with the guidance of ISO 19103, all data element names are presented as character strings which combine multiple lower-case words as needed to form precise and understandable names without using any intervening characters (such as "_", "-", or space). For attributes and operation names, association roles, and parameters, capitalization is applied to the first letter of each word after the first word. For package, class, type-specification, and association names, capitalization is also applied to the first letter of the first word.

This document has a normative reference (and conformance class dependency) to ISO 19103, ISO 19115-1 and ISO 19135-1. The result of this is that all classes (except enumerations and codelists) are stereotyped <<interface>>.

10.5.3 Requirements class — Terminology register schema

Figure 1 provides an overview of the classes and associations in the terminology register schema.

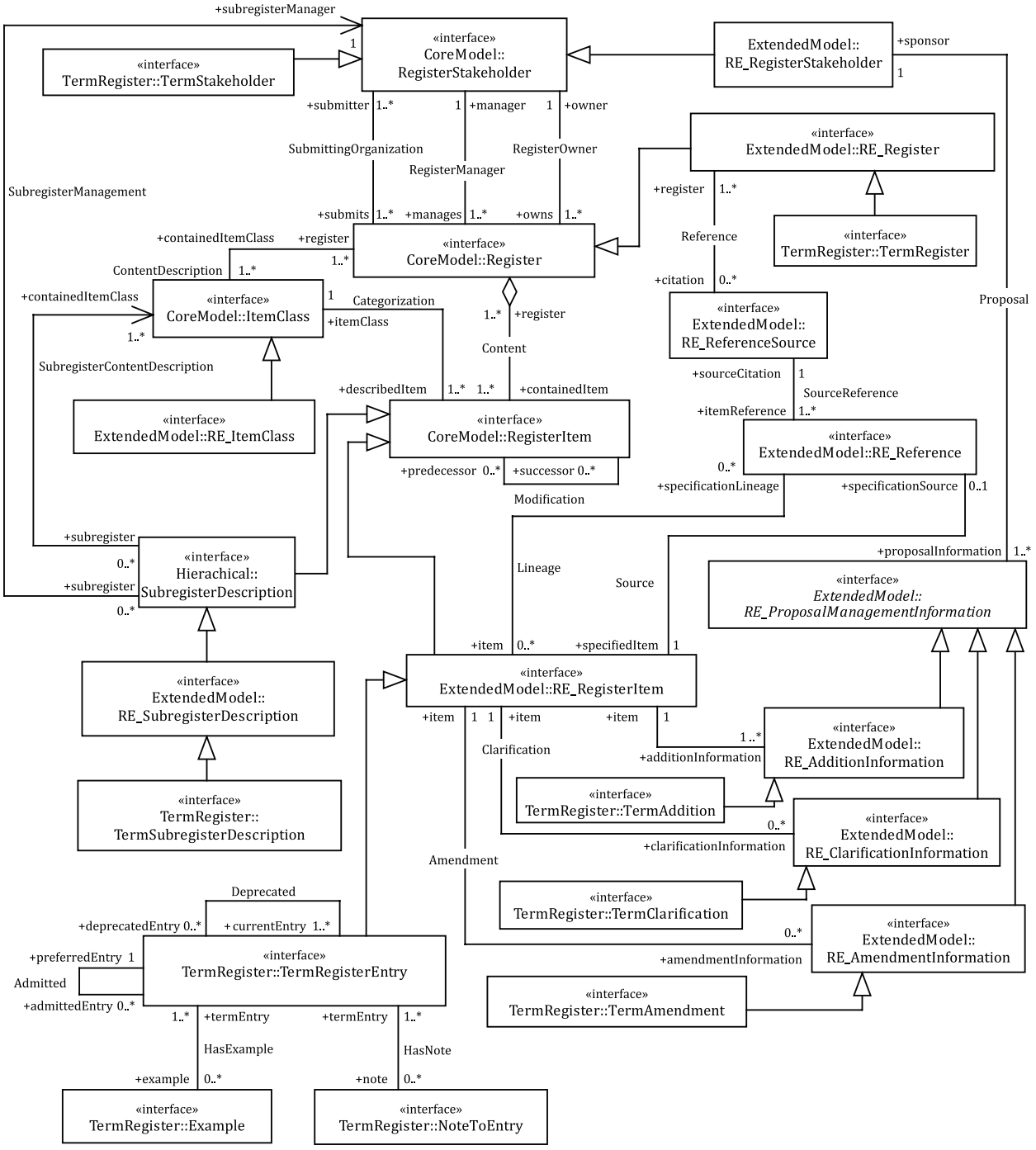

Figure 1 — Terminology register schema

The requirements for the terminology register schema comprise a single requirements class (see Table 51), identified as <http://standards.iso.org/iso/19104/req/sch> and abbreviated as 19104sch.

Table 51 — Requirements class for terminology register schema

Requirements class	
19104sch = <http://standards.iso.org/iso/19104/req/sch>	
Target type	Terminology Register
Dependency	ISO 19103:2015
Dependency	ISO 19115-1:2014
Dependency	ISO 19135-1:2015
Requirement	Simple terminology register schema
Requirement	Hierarchical multi-lingual terminology register schema
Requirement	TermStakeholder class
Requirement	TermRegister class
Requirement	TermRegisterEntry class
Requirement	Examples class
Requirement	NotesToEntry class
Requirement	TermAddition class
Requirement	TermAmendment class
Requirement	TermClarification class
Requirement	TermSubRegisterDescription class

10.5.4 Requirement — Simple terminology register schema

The requirements regarding the schema for a simple terminology register are specified in Table 52.

Table 52 — Simple terminology register schema requirement

Requirement
<19104sch:simpleTerminologyRegisterSchema>
The schema for a simple terminology register shall comply with the requirements specified in 10.5.6, 10.5.7, 10.5.8, 10.5.9, 10.5.10, 10.5.11, 10.5.12 and 10.5.13.

10.5.5 Requirement — Hierarchical multi-lingual terminology register schema

The requirements regarding the schema for a hierarchical multi-lingual terminology register schema are specified in Table 53.

Table 53 — Hierarchical multi-lingual terminology register schema requirement

Requirement
<19104sch:hierarchicalMultiLingualTerminologyRegisterSchema>
The schema for a hierarchical multi-lingual terminology register shall comply with the requirements specified in 10.5.6, 10.5.7, 10.5.8, 10.5.9, 10.5.10, 10.5.11, 10.5.12, 10.5.13 and 10.5.14.

10.5.6 Requirement — TermStakeholder class

The class TermStakeholder (see Figure 2) is a subclass of RegisterStakeholder, specified in ISO 19135-1:2015, 7.3.2. It specifies information items for identifying the owner and manager of a terminology register or subregister. It also specifies information items for identifying each party that submits entries to that register or subregister.

The requirements regarding the TermStakeholder class, its attributes and associations are specified in Table 54.

Table 54 — TermStakeholder class requirement

Requirement
<19104sch:termStakeholder>
A terminology register schema shall include the TermStakeholder class and may include one or more classes derived from it. When implementing the terminology register schema, separate instances of TermStakeholder shall be included for the register owner, register manager and each submitting organization. In the case of a schema for a hierarchical register, separate instances shall be included for the register owner, register manager and each submitting organization of the principal register and each subregister. TermStakeholder shall inherit the one attribute from RegisterStakeholder that is described in Table 55. TermStakeholder shall inherit the four associations from RegisterStakeholder that are described in Table 56. TermStakeholder itself shall not specify any attributes or associations.

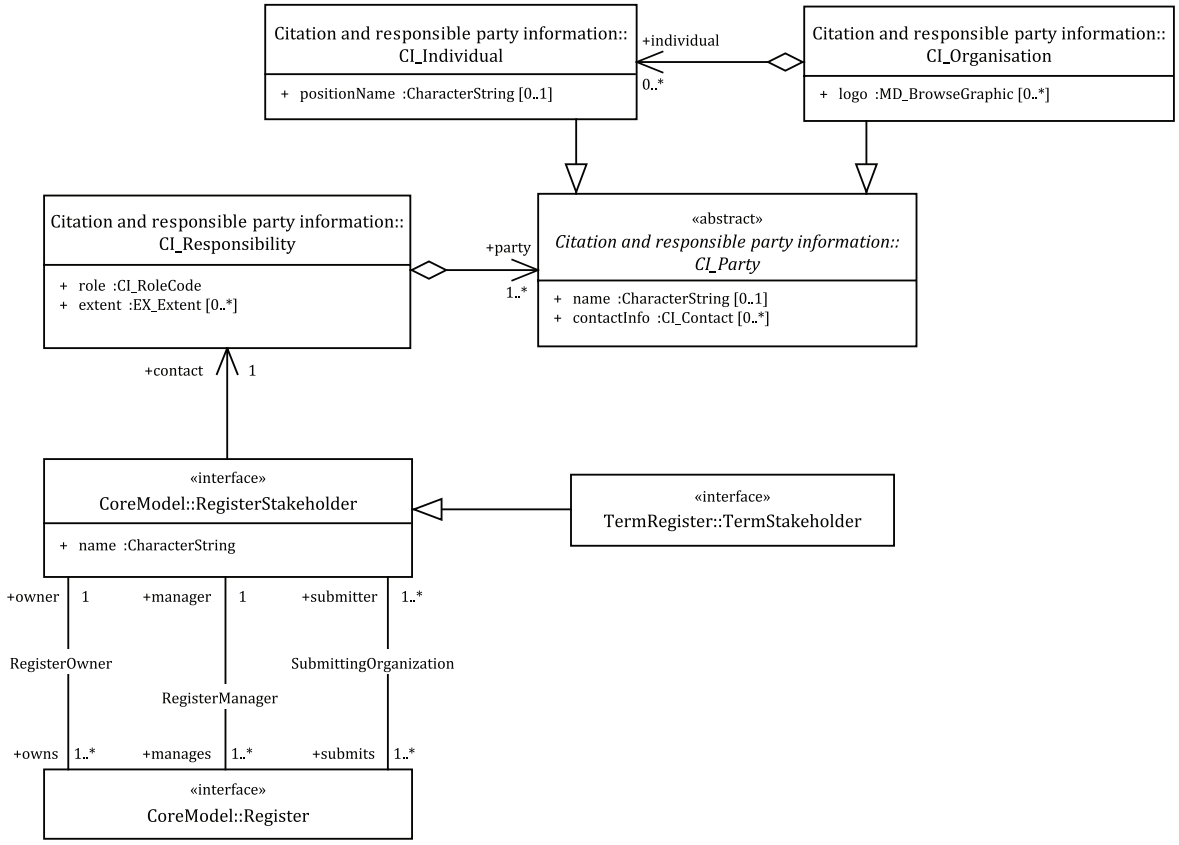

Figure 2 — TermStakeholder class

Table 55 — Attributes inherited from RegisterStakeholder

Name	Definition	M/C/O	Max occur	Data type	Domain
name	compact and human readable designator that is used to denote the stakeholder (individual or organization) of that register EXAMPLE ISO/TC 211	M	1	Character String	Free text

Table 56 — Associations inherited from RegisterStakeholder

Target class	Target role name	Definition	M/C/O	Max occur
Register (ISO 19135-1:2015, 7.2.2)	manages	identifies the TermStakeholder as being the manager of the register	M	N
Register (ISO 19135-1:2015, 7.2.2)	owns	identifies the TermStakeholder as being the owner of the register	M	N
Register (ISO 19135-1:2015, 7.2.2)	submits	identifies the TermStakeholder as being a submitting organization for the register	M	N
CI_Responsibility (ISO 19115-1:2014, 6.6.2)	contact	connects to the TermStakeholder's contact information	M	1

10.5.7 Requirement — TermRegister class

The class TermRegister (see Figure 3) is a subclass of RE_Register specified in ISO 19135-1:2015, B.2.2.2. It specifies information items for describing a terminology register or subregister. It inherits five attributes and one association from the class RE_Register. In addition, through RE_Register, it inherits a further three attributes and five associations from the class Register (see ISO 19135-1:2015, 7.2.2).

The requirements regarding the TermRegister class, its attributes and associations are specified in Table 57.

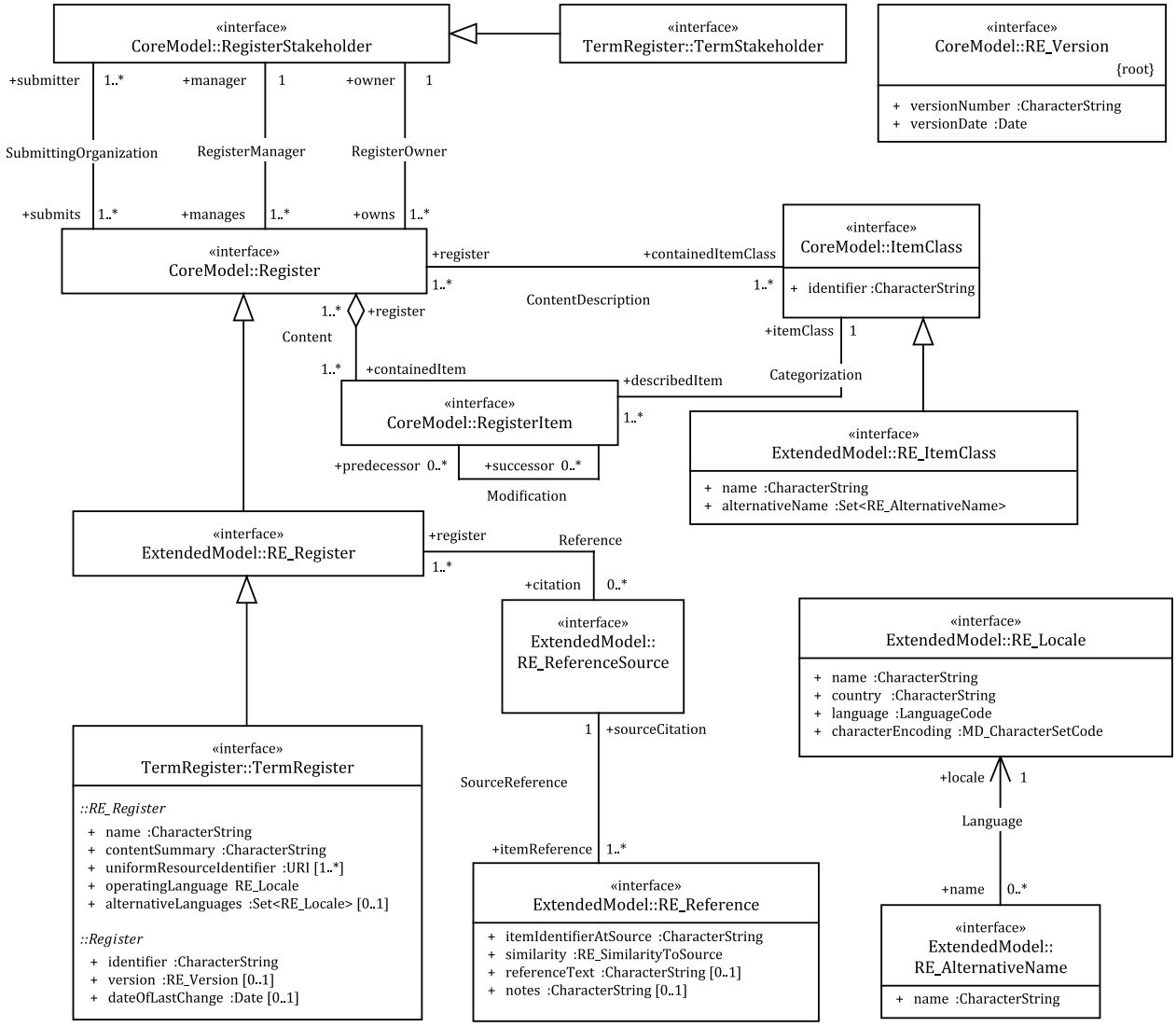

Figure 3 — TermRegister class

Table 57 — TermRegister class requirement

Requirement
<19104sch:termRegister>
A terminology register schema shall include the TermRegister class and may include one or more classes derived from it. In the case of a hierarchical register, separate instances of TermRegister shall be included for the principal register and each subregister. TermRegister shall inherit the three attributes from the class Register that are described in Table 58. TermRegister shall inherit the five attributes from the class RE_Register that are described in Table 59. TermRegister shall inherit the five associations from the class Register that are described in Table 60. TermRegister shall inherit the one association from the class RE_Register that is described in Table 61. TermRegister itself shall not specify any attributes or associations.

Table 58 — Attributes inherited from Register (via RE_Register)

Name	Definition	M/C/O	Max occur	Data type	Domain
identifier	compact and human-readable designator that is used to uniquely denote that register within the set of registers maintained by the register owner EXAMPLE ISO/TC 211 Multi-Lingual Glossary of Terms — English Subregister	M	1	Character String	Free text
version	specification of a unique state in the life of the register, represented as an instance of RE_Version (ISO 19135-1:2015, B.2.2.4) NOTE A value for version must be provided if dateOfLastChange is omitted.	C	1	Class	No specified domain.
dateOfLastChange	date of the most recent change to the status of an item in the register NOTE A value for dateOfLastChange must be provided if version is omitted.	C	1	Date	Gregorian calendar

Table 59 — Attributes inherited from RE_Register

Name	Definition	M/C/O	Max occur	Data type	Domain
name	compact and human-readable designator that is used to uniquely denote that register within the set of registers maintained by the register owner EXAMPLE ISO/TC 211 Multi-Lingual Glossary of Terms — English Subregister.	M	1	Character String	Free text
contentSummary	general statement of the purpose for which items in the register are made available to potential users EXAMPLE 1 (for a simple register) "A compilation of terminological entries published in ISO/TC 211-sponsored International Standards and Technical Specifications for use by the geospatial community." EXAMPLE 2 (for the principal register in a hierarchical multi-lingual register) "A compound register containing terminological entries that have been published in ISO/TC 211-sponsored International Standards and Technical Specifications. Each subregister contains the terminological entries in a nominated national or regional language."	M	1	Character String	Free text
uniformResource Identifier	information about online resources associated with the register EXAMPLE www.isotc211.org/Terminology.htm	M	N	URI	No specified domain

Table 59 *(continued)*

Name	Definition	M/C/O	Max occur	Data type	Domain
OperatingLanguage	language, country information and character encoding for the proper interpretation of the content of character strings in the register, represented as an instance of the class RE_Locale (ISO 19135-1:2015, B.2.2.3) EXAMPLE Operating language name English Operating language code eng Operating language country 826 Operation language character encoding 5	M	1	Class	No specified domain
alternativeLanguages	summary of alternative locales used by items in a register, represented as a set of instances of the class RE_Locale (ISO 19135-1:2015, B.2.2.3) NOTE Inclusion of this attribute is conditional upon at least one alternative language being used. An instance of this attribute must be included for each alternative locale.	C	N	Set	No specific domain

Table 60 — Associations inherited from Register (via RE_Register)

Target class	Target role name	Definition	M/C/O	Max occur
RegisterStakeholder (ISO 19135-1:2015, 7.3.2)	manager	identifies the TermStakeholder that is the manager of the register	M	1
RegisterStakeholder (ISO 19135-1:2015, 7.3.2)	owner	identifies the TermStakeholder that is owner of the register	M	1
RegisterStakeholder (ISO 19135-1:2015, 7.3.2)	submitter	identifies the TermStakeholder that is a submitting organization to the register	M	N
RegisterItem (ISO 19135-1:2015, 7.5.2)	containedItem	connects an instance of TermRegister to one or more instances of TermRegisterEntry	M	N
ItemClass (ISO 19135-1:2015, 7.4.2)	containedItemClass	describes the characteristics of a class of items held in the register NOTE In the case of a principal register, the item class shall be “reference language subregister” (defined in 4.25) or “submitted language subregister” (defined in 4.30). In the cases of a simple register, reference language subregister or submitted language subregister, the item class shall be “terminological entry” (defined in 4.37).	M	N

Table 61 — Associations inherited from RE_Register

Target class	Target role name	Definition	M/C/O	Max occur
RE_ReferenceSource (ISO 19135-1:2015, B.2.6.3)	citation	identifies the reference source for one or more items in the TermRegister	O	N

10.5.8 Requirement — TermRegisterEntry class

The class TermRegisterEntry (see Figure 4) is a subclass of RE_RegisterItem (see ISO 19135-1:2015, B.2.3.2). It specifies elements of information to be recorded for each terminological entry in a simple register, reference language subregister or submitted language subregister.

TermRegisterEntry is not used to record entries in a principal register. Entries in a principal register are recorded using instances of TermSubregisterDescription as described in 10.5.14.

TermRegisterEntry inherits seven attributes and five associations from RE_RegisterItem. In addition, through RE_RegisterItem, it also inherits six attributes and four associations from the class RegisterItem (see ISO 19135-1:2015, 7.5.2).

The requirements regarding the TermRegisterEntry class, its attributes and associations are specified in Table 62.

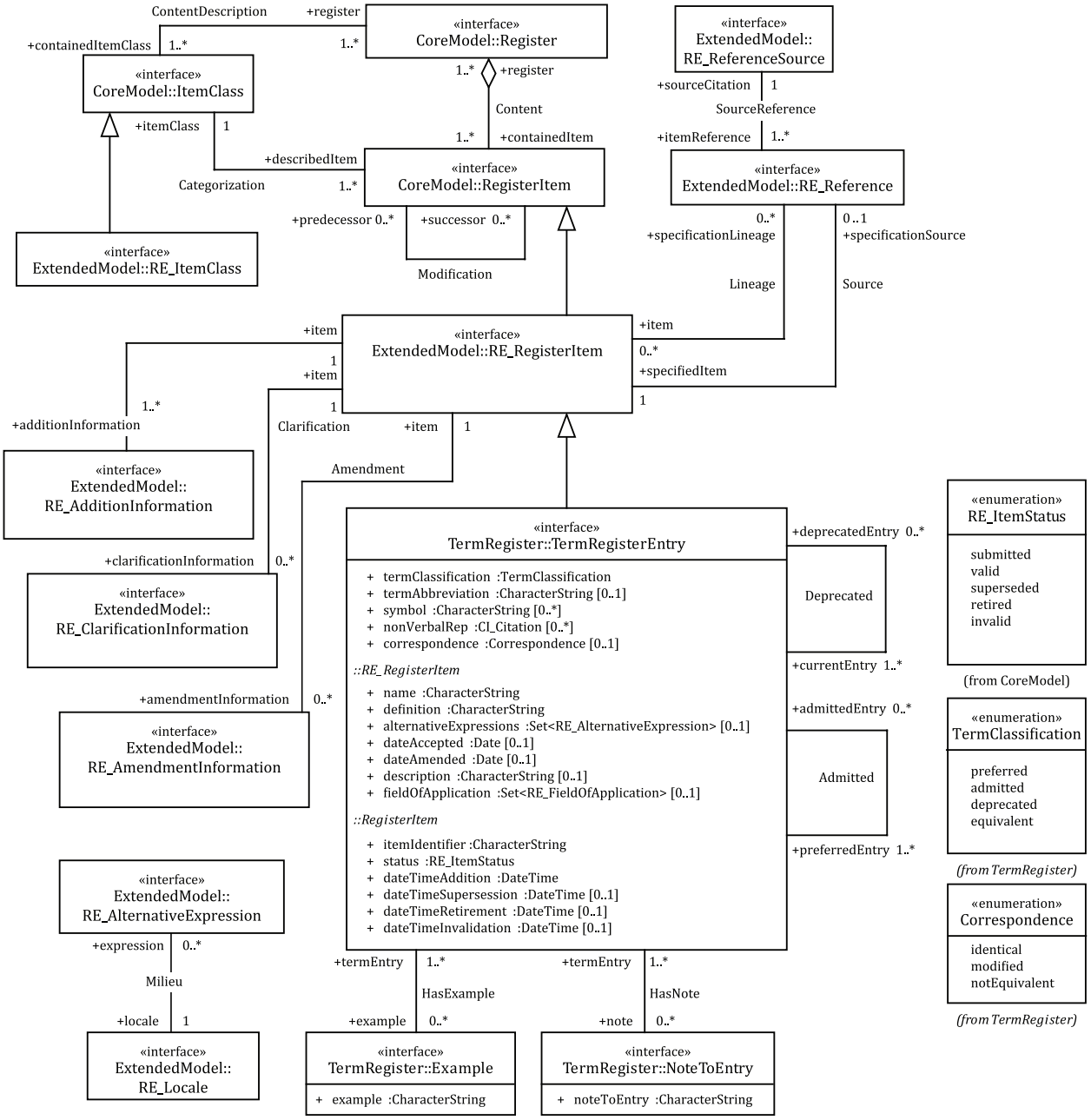

Figure 4 — TermRegisterEntry class

Table 62 — TermRegisterEntry class requirement

Requirement
<19104sch:termRegisterEntry>
A terminology register schema shall include the TermRegisterEntry class and may include one or more classes derived from it. When implementing the terminology register schema, a separate instance of TermRegisterEntry shall be included for each language register or subregister. TermRegisterEntry shall inherit the six attributes from RegisterItem that are described in Table 63. The attribute "itemIdentifier" shall be subject to the following constraints: — In the case of a simple register, the attribute shall hold the value of the terminological entry identifier required in 10.2.2. — In the case of a reference language subregister, the attribute shall hold the value of the terminological entry identifier required in 10.2.4. — In the case of a submitted language subregister, the attribute shall hold the value of the terminological entry identifier required in 10.2.5. TermRegisterEntry shall inherit the seven attributes from RE_RegisterItem that are described in Table 64. The following constraints shall apply: — The attribute "name" shall satisfy the requirements for a preferred term, admitted term or deprecated term as specified in 8.3.3, or an equivalent term as specified in 8.3.4. — The attribute "definition" shall satisfy the requirements for a definition specified in 8.3.7. TermRegisterEntry shall specify the five attributes that are described in Table 65. The following constraints shall apply: — The attribute "termAbbreviation" shall satisfy the requirements for an abbreviation specified in 8.3.5. — The attribute "symbol" shall reference a symbol that satisfies the requirements specified in 8.3.6. — The attribute "nonVerbalRep" shall reference a non-verbal representation that satisfies the requirements specified in 8.3.8. TermRegisterEntry shall inherit the four associations from RegisterItem that are described in Table 66. The target role "itemClass" shall be subject to the following constraint: — The item class to which the instance of TermRegisterEntry shall connect shall be "terminological entry" as specified in this document. TermRegisterEntry shall inherit the five associations from RE_RegisterItem that are described in Table 67. TermRegisterEntry shall specify the six associations that are described in Table 68.

Table 63 — Attributes inherited from RegisterItem

Name	Definition	M/C/O	Max occur	Data type	Domain
itemIdentifier	character string that is used to uniquely denote an item within an item class NOTE Value constraints are listed in Table 62.	M	1	Character String	Free text
status	registration status of the RegisterItem, represented as an instance of the enumeration RE_ItermStatus (ISO 19135-1:2015, 7.5.2)	M	1	Class	"submitted" "valid" "superseded" "retired" "invalid"
dateTimeAddition	date and time on which the item was added	M	1	DateTime	Gregorian calendar

Table 63 *(continued)*

Name	Definition	M/C/O	Max occur	Data type	Domain
dateTimeSupersession	date and time on which an item has been superseded NOTE A value shall be provided if the value of *status* is "superseded".	C	1	DateTime	Gregorian calendar
dateTimeRetirement	date and time on which an item has been retired NOTE A value shall be provided if the value of *status* is "retired".	C	1	DateTime	Gregorian calendar
dateTimeInvalidation	date and time on which an item has been invalidated NOTE A value shall be provided if the value of *status* is "invalid".	C	1	DateTime	Gregorian calendar

Table 64 — Attributes inherited from RE_RegisterItem

Name	Definition	M/C/O	Max occur	Data type	Domain
name	compact and human-readable designator (term) that is used to denote a concept	M	1	Character String	Free text
definition	definition of the concept expressed in the language of the register or subregister	M	1	Character String	Free text
alternativeExpressions	set of instances of RE_AlternativeExpression (ISO 19135-1:2015, B.2.3.3), each specifying an alternative name and optionally additional information in a locale different from that of the register NOTE Equivalent terms are instances of alternativeExpressions.	O	1	Set	No specified domain
dateAccepted	date on which a proposal to add the item to the register was accepted NOTE The date value is identical to that assigned to the conditional attribute TermAddition.dateDisposed (10.5.11 and Table 76).	C	1	Date	Gregorian calendar

Table 64 *(continued)*

Name	Definition	M/C/O	Max occur	Data type	Domain
dateAmended	date on which a proposal to supersede or retire the item was accepted NOTE The date value is identical to that assigned to the conditional attribute TermAmendment.dateDisposed (10.5.12 and Table 76).	C	1	Date	Gregorian calendar
description	description of the concept embodied by the item and expressed in the operating language of the register NOTE The "description" contains information about the concept that is not specified by the definition element.	O	1	Character String	Free text
fieldOfApplication	set of instances of RE_FieldOfApplication (ISO 19135-1:2015, B.2.3.4), each of which describe a kind of use of the item	O	1	Set	No specified domain

Table 65 — TermRegisterEntry attributes

Name	Definition	M/C/O	Max occur	Data type	Domain
termClassification	classification of the term, represented as an instance of the enumeration TermClassification NOTE The values in the enumeration TermClasification are: — "preferred" – the term satisfies the requirements specified in Table 21 — "admitted" – the term satisfies the requirements specified in Table 22 — "deprecated" – the term satisfies the requirements specified in Table 23 — "equivalent" – the term satisfies the requirements specified in Table 24	M	1	enumeration	"preferred" "admitted" "deprecated" "equivalent"
termAbbreviation	See 4.1 NOTE The condition under which an abbreviation shall be included is specified in Table 17.	C	N	Character String	Free text
symbol	reference to a resource containing a representation of the symbol, presented as an instance of CI_Citation (ISO 19115-1:2014, B.16) NOTE The condition under which a symbol shall be included is specified in Table 17.	C	N	Class	No specified domain
nonVerbalRep	reference to a resource containing the non-verbal representation (see 4.19), presented as an instance of CI_Citation (ISO 19115-1:2014, B.16) NOTE The condition under which a non-verbal representation shall be included is specified in Table 17.	C	N	Class	No specified domain
correspondence	degree to which the technical content of a culturally and/or linguistically adapted terminological entry corresponds to that of the entry in the reference language, represented as an instance of the enumeration Correspondence NOTE This attribute shall only be included if the terminological entry forms part of a submitted language subregister	O	1	Class	"identical", "modified "notEquivalent"

Table 66 — Associations inherited from RegisterItem

Target class	Target role name	Definition	M/C/O	Max occur
Register (ISO 19135-1:2015, 7.2.2)	register	connects an instance of TermRegisterEntry to its TermRegister	M	N
ItemClass (ISO 19135-1:2015, 7.4.2.)	itemClass	connects an instance of TermRegisterEntry to an instance of ItemClass NOTE In the cases of a simple register, reference language subregister or submitted language subregister, the item class shall be "terminological entry" (see 4.37).	M	1
RegisterItem (ISO 19135-1:2015, 7.5.2)	predecessor	connects an instance of TermRegisterEntry to an earlier instance of TermRegisterEntry NOTE In a terminology register, the association provides a link from a valid terminological entry to a superseded or retired terminological entry.	O	N
RegisterItem (ISO 19135-1:2015, 7.5.2)	successor	connects an instance of TermRegisterEntry to a later instance of TermRegisterEntry NOTE In a terminology register, the association provides a link from a superseded or retired terminological entry to a valid terminological entry.	O	N

Table 67 — Associations inherited from RE_RegisterItem

Target class	Target role name	Definition	M/C/O	Max occur
RE_AdditionInformation (ISO 19135-1:2015, B.2.7.2)	additionInformation	connects to the addition information associated with the TermRegisterEntry	M	N
RE_AmendmentInformation (ISO 19135-1:2015, B.2.7.3)	amendmentInformation	connects to any amendment information associated with the TermRegisterEntry	O	N
RE_ClarificationInformation (ISO 19135-1:2015, B.2.7.4)	clarificationInformation	connects to any clarification information associated with the TermRegisterEntry	O	N
RE_Reference (ISO 19135-1:2015, B.2.6.2)	specificationSource	identifies the reference information describing the specification source for the TermRegisterEntry EXAMPLE Content of the reference information may be as follows: *itemIdentifierAtSource: ISO 6709:2008, 4.2* *similarity: 1*	O	1
RE_Reference (ISO 19135-1:2015, B.2.6.2)	specificationLineage	identifies any lineage information for the TermRegisterEntry	O	N

Table 68 — TermRegisterEntry associations

Target class	Target role name	Definition	M/C/O	Max occur
TermRegisterEntry (10.5.8)	admittedEntry	connects an instance of TermRegisterEntry containing a preferred term to an instance of TermRegisterEntry containing an admitted term	O	N
TermRegisterEntry (10.5.8)	preferredEntry	connects an instance of TermRegisterEntry containing an admitted term to an instance of TermRegisterEntry containing a preferred term	M	1
TermRegisterEntry (10.5.8)	deprecatedEntry	connects an instance of TermRegisterEntry containing a preferred or admitted term to an instance of TermRegisterEntry containing a deprecated term	O	N
TermRegisterEntry (10.5.8)	currentEntry	connects an instance of TermRegisterEntry containing a deprecated term to an instance of TermRegisterEntry containing a preferred or admitted term	M	N
Example (10.5.9)	example	connects an instance of TermRegisterEntry to examples that further illustrate the concept represented by the instance	O	N
NoteToEntry (10.5.10)	note	connects an instance of TermRegisterEntry to notes to entry providing additional information about the concept represented by the instance	O	N

10.5.9 Requirement — Example class

The class Example (see Figure 4) specifies a model element for recording instances of the data category "example". It has one attribute and one association.

The requirements regarding the Example class, its attribute and association are specified in Table 69.

Table 69 — Example class requirement

Requirement
<19104sch:example>
A terminology register schema shall include the Example class and may include one or more classes derived from it. When implementing the terminology register schema, separate instances of Example shall be associated with each instance of TermRegisterEntry in each register and subregister. Example shall specify the one attribute that is described in Table 70. The following constraint shall apply: — The attribute "example" shall satisfy the drafting requirements specified in 8.3.9. Example shall specify the one association that is described in Table 71.

Table 70 — Example Attributes

Name	Definition	M/C/O	Max occur	Data type	Domain
example	description that illustrates the application of a concept	M	N	Character String	Free text

Table 71 — Example Associations

Target class	Target role name	Definition	M/C/O	Max occur
TermRegisterEntry (10.5.8)	termEntry	connection to the TermRegisterEntry that is illustrated by Example	M	N

10.5.10 Requirement — NoteToEntry class

The class NoteToEntry (see Figure 4) specifies a model element for recording instances of the data category "note to entry". It has one attribute and one association.

The requirements regarding the NoteToEntry class, its attribute and association are specified in Table 72.

Table 72 — NoteToEntry class requirement

Requirement
<19104sch:noteToEntry>
A terminology register schema shall include the NoteToEntry class and may include one or more classes derived from it. When implementing the terminology register schema, separate instances of NoteToEntry shall be associated with each instance of TermRegisterEntry in each register and subregister. NoteToEntry shall specify the one attribute that is described in Table 73. The following constraint shall apply: — The attribute "noteToEntry" shall satisfy the drafting requirements specified in 8.3.10. NoteToEntry shall specify the one association that is described in Table 74.

Table 73 — NoteToEntry Attributes

Name	Definition	M/C/O	Max occur	Data type	Domain
noteToEntry	description that elaborates the context, characteristics or application of a concept	M	N	Character String	Free text

Table 74 — NoteToEntry Associations

Target class	Target role name	Definition	M/C/O	Max occur
TermRegisterEntry (10.5.8)	termEntry	connection to the TermRegisterEntry that is further elaborated by the NoteToEntry	M	N

10.5.11 Requirement — TermAddition class

The class TermAddition (see Figure 5) is a subclass of RE_AdditionInformation (see ISO 19135-1:2015, B.2.7.2). It specifies elements of management information to be recorded for each proposal to add a register item. It inherits one association from the class RE_AdditionInformation. In addition, through RE_AdditionInformation, it inherits eight attributes and one association from the class RE_ProposalManagementInformation (see ISO 19135-1:2015, B.2.5.2).

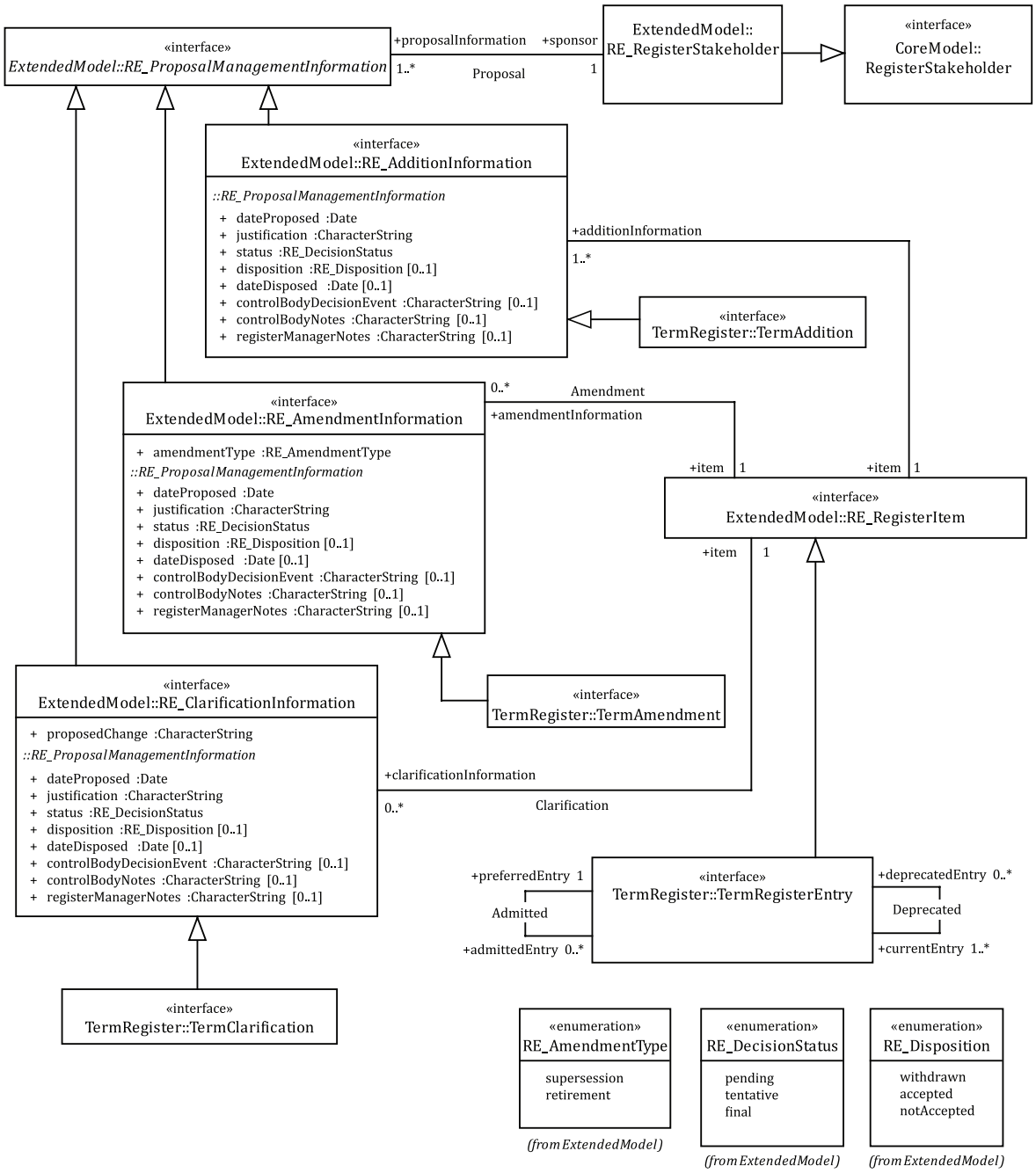

Figure 5 — TermAddition, TermAmendment and TermClarification classes

The requirements regarding the TermAddition class, its attributes and associations are specified in Table 75.

Table 75 — TermAddition class requirement

Requirement
<19104sch:termAddition>
The terminology register schema shall include the TermAddition class and may include one or more classes derived from it. When implementing the terminology register schema, separate instances of TermAddition shall be associated with each instance of TermRegisterEntry in each register and subregister. TermAddition shall inherit the eight attributes from RE_ProposalManagementInformation that are described in Table 76. TermAddition shall inherit the one association from RE_ProposalManagementInformation that is described in Table 77. TermAddition shall inherit the one association from RE_AdditionInformation that is described in Table 78.

Table 76 — Attributes inherited from RE_ProposalManagementInformation

Name	Definition	M/C/O	Max occur	Data type	Domain
dateProposed	the date on which the proposed amendment was entered into the register	M	1	Date	Gregorian calendar
justification	explanation of why the proposed change should be implemented EXAMPLE "The terminological entry has been published in an ISO/TC 211-sponsored standard."	M	1	Character String	Free text
status	standing of the proposed change within the approval process, represented as an instance of the enumeration RE_DecisonStatus (ISO 19135-1:2015, B.2.5.2)	M	1	Class	"pending" "tentative" "final"
disposition	disposition of the proposal, represented as an instance of the enumeration RE_Disposition (ISO 19135-1:2015, B.2.5.2) NOTE A value shall be provided if the value of status is "tentative" or "final".	C	1	Class	"withdrawn" "accepted" "notAccepted"
dateDisposed	date on which the disposition of the proposal was determined NOTE A value shall be provided if the value of *status* is "tentative" or "final".	C	1	Date	Gregorian calendar
controlBodyDecisionEvent	identifies a meeting or other event associated with the control body's decision concerning the proposed change	O	1	Character String	Free text
controlBodyNotes	notes relevant to the control body's decision concerning the proposal. Individual entries within the notes should be dated	O	1	Character String	Free text
registerManagerNotes	notes relevant to the register manager's handling of the proposal. Individual entries within the notes should be dated	O	1	Character String	Free text

Table 77 — Associations inherited from RE_ProposalManagementInformation

Target class	Target role name	Definition	M/C/O	Max occur
RE_RegisterStakeholder (ISO 19135-1:2015, 7.3.2 and B.2.5.2)	sponsor	identifies the TermStakeholder that is submitting proposal management information to the register	M	1

Table 78 — Associations inherited from RE_AdditionInformation

Target class	Target role name	Definition	M/C/O	Max occur
RE_RegisterItem (ISO 19135-1:2015, B.2.3.2)	item	identifies the TermRegisterEntry to which the information in TermAddition is related	M	1

10.5.12 Requirement — TermAmendment class

The class TermAmendment (see Figure 5) is a subclass of RE_AmendmentInformation (see ISO 19135:2015, B.2.7.3). It specifies elements of management information to be recorded for each proposal to amend a register item. It inherits one attribute and one association from the class RE_AmendmentInformation. In addition, through RE_AmendmentInformation, it inherits eight attributes and one association from the class RE_ProposalManagementInformation (see ISO 19135-1:2015, B.2.5.2).

The requirements regarding the TermAmendment class, its attributes and associations are specified in Table 79.

Table 79 — TermAmendment class requirement

Requirement
<19104sch:termAmendment>
The terminology register schema shall include the TermAmendment class and may include one or more classes derived from it. When implementing the terminology register schema, separate instances of TermAmendment shall be associated with each instance of TermRegisterEntry in each register and subregister. TermAmendment shall inherit the eight attributes from RE_ProposalManagementInformation that are described in Table 76. TermAmendment shall inherit the one attribute from RE_AmendmentInformation that is described in Table 80. TermAmendment shall inherit the one association from RE_ProposalManagementInformation that is described in Table 77. TermAmendment shall inherit the one association from RE_AmendmentInformation that is described in Table 81.

Table 80 — Attributes inherited from RE_AmendmentInformation

Name	Definition	M/C/O	Max occur	Data type	Domain
amendmentType	identifies the type of amendment proposed, represented as an instance of the enumeration RE_AmendmentType (ISO 19135-1:2015, B.2.7.3)	M	1	Class	“supersession” “retirement”

Table 81 — Associations inherited from RE_AmendmentInformation

Target class	Target role name	Definition	M/C/O	Max occur
RE_RegisterItem (ISO 19135-1:2015, B.2.3.2)	item	identifies the TermRegisterEntry to which the information in TermAmendment is related	M	1

10.5.13 Requirement — TermClarification class

The class TermClarification (see Figure 5) is a subclass of RE_ClarificationInformation (see ISO 19135-1:2015, B.2.7.4). It specifies elements of management information to be recorded for each proposal to clarify a register item. It inherits one attribute and one association from the class RE_ClarificationInformation. In addition, through RE_ClarificationInformation, it inherits eight attributes and one association from the class RE_ProposalManagementInformation (see ISO 19135-1:2015, B.2.5.2).

The requirements regarding the TermClarification class, its attributes and associations are specified in Table 82.

Table 82 — TermClarification class requirement

Requirement
<19104sch:termClarification>
A terminology register schema shall include the TermClarification class and may include one or more classes derived from it. When implementing the terminology register schema, separate instances of TermClarification shall be associated with each instance of TermRegisterEntry in each register and subregister. TermClarification shall inherit the eight attributes from RE_ProposalManagementInformation that are described in Table 76. TermClarification shall inherit the one attribute from RE_ClarificationInformation that is described in Table 83. TermClarification shall inherit the one association from RE_ProposalManagementInformation that is described in Table 77. TermClarification shall inherit the one association from RE_ClarificationInformation that is described in Table 84.

Table 83 — Attributes inherited from RE_ClarificationInformation

Name	Definition	M/C/O	Max occur	Data type	Domain
proposedChange	description of the clarification identifying: — the elements of the register item that are changed, and — the prior and subsequent values of each	M	1	Character String	Free text

Table 84 — Associations inherited from RE_ClarificationInformation

Target class	Target role name	Definition	M/C/O	Max occur
RE_RegisterItem (ISO 19135-1:2015, B.2.3.2)	item	identifies the TermRegisterEntry to which the information in TermClarification is related	M	1

10.5.14 Requirement — TermSubregisterDescription class

The class TermSubregisterDescription (see Figure 6) is a subclass of RE_SubregisterDescription (see ISO 19135-1:2015, B.2.8.2). It is used in a principal register to describe affiliated subregisters. It inherits two attributes from RE_SubregisterDescription. In addition, through RE_SubregisterDescription, it inherits six attributes and four associations from RegisterItem (see ISO 19135-1:2015, 7.5.2) and two associations from SubregisterDescription (see ISO 19135-1:2015, 8.4.2).

TermSubregisterDescription has three attributes that are specific to the class.

The requirements regarding the TermSubregisterDescription class, its attributes and associations are specified in Table 85.

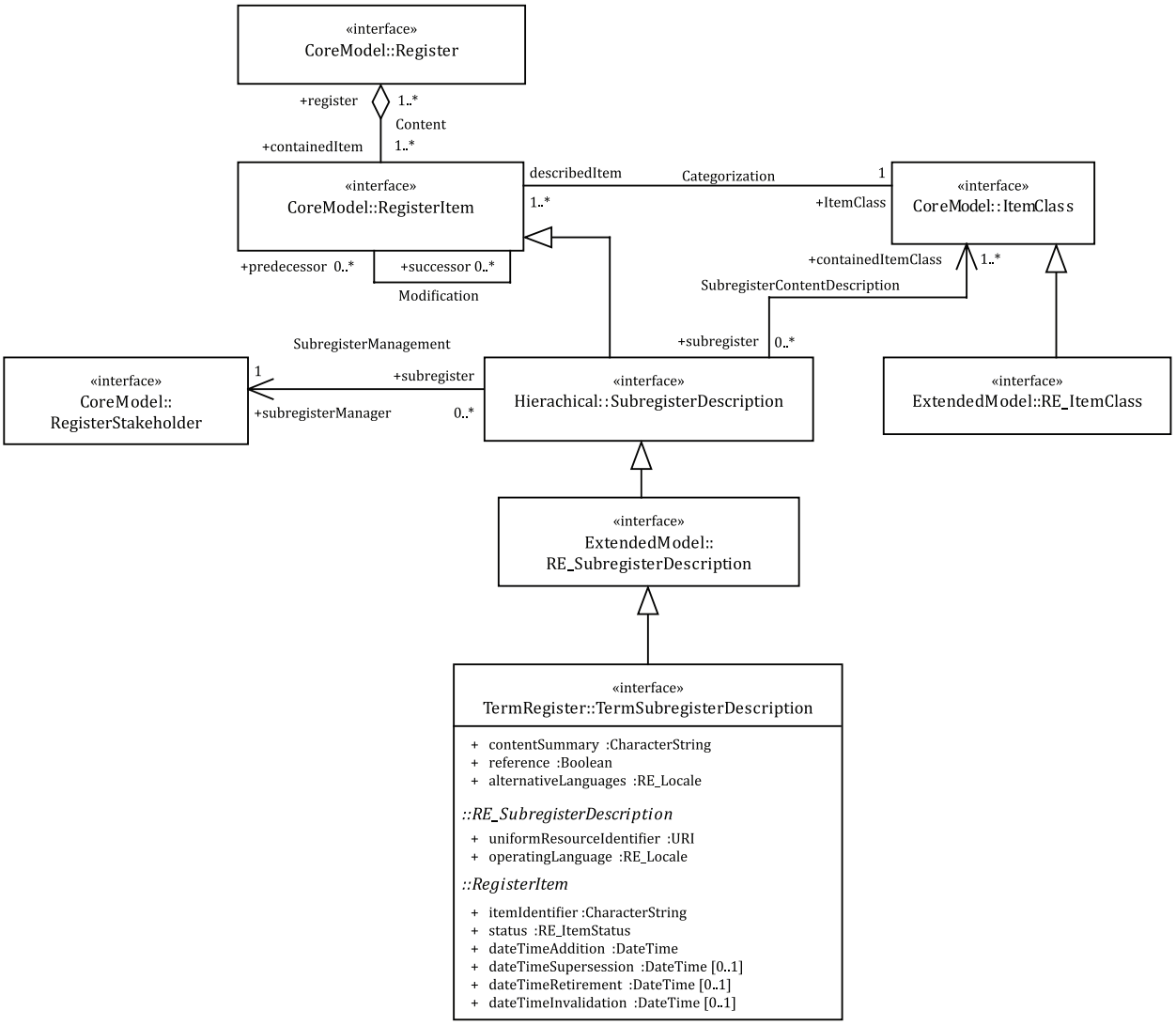

Figure 6 — TermSubregisterDescription class

Table 85 — TermSubregisterDescription class requirement

Requirement
<19104sch:termSubregisterDescription>
A hierarchical multi-lingual terminology register schema shall include the TermSubregisterDescription class and may include one or more classes derived from it. TermSubregisterDescription shall be associated with the principal register and specify information about the afilliated subregisters. TermSubregisterDescription shall inherit the six attributes from RegisterItem that are described in Table 63. The attribute itemIdentifier shall be subject to the following constraints: — The attribute itemIdentifier shall uniquely identify a subregister. EXAMPLE "ISO/TC 211 Glossary of Terms — English subregister". TermSubregisterDescription shall inherit the two attributes from RE_SubregisterDescription that are described in Table 86. TermSubregisterDescription shall specify the three attributes that are described in Table 87. TermSubregisterDescription shall inherit the four associations from RegisterItem that are described in Table 66. The target role itemClass shall be subject to the following constraint: — The item classes to which the instances of TermSubregisterDescription connect shall be either "reference language subregister" (see 4.25) or "submitted language subregister" (see 4.30). TermSubregisterDescription shall inherit the two associations from SubregisterDescription (via RE_SubregisterDescription) that are described in Table 88. The target role containedItemClass shall be subject to the following constraint: — The item class to which each instance of TermSubregisterDescription connects shall be "terminological entry" (see 4.37).

Table 86 — Attributes inherited from RE_SubregisterDescription

Name	Definition	M/C/O	Max occur	Data type	Domain
uniformResource Identifier	URI referencing information about online resources associated with the subregister	M	1	URI	No specified domain
operatingLanguage	specifies language, country information and character encoding for the proper interpretation of the content of character strings in the subregister, represented as an instance of the class RE_Locale (ISO 19135-1:2015, B.2.2.3) NOTE For a reference language subregister, operatingLanguage is the reference language. For a submitted language subregister, operatingLanguage is the submitted language. EXAMPLE Operating language name: English Operating language code: eng Operating language country: 826 Operation language character encoding: 5	M	1	Class	No specified domain

Table 87 — TermSubregisterDescription attributes

Name	Definition	M/C/O	Max occur	Data type	Domain
contentSummary	general statement of the purpose for which items in the subregister are made available to potential users EXAMPLE "A compilation of terminological entries published in ISO/TC 211-sponsored International Standards and Technical Specifications, presented in English for use by the geospatial community."	M	1	Character String	Free text
reference	specifies whether the subregister is the reference language subregister	M	1	Boolean	0 = No, 1 = Yes
alternativeLanguages	summary of alternative locales used by items in a subregister, represented as instances of the class RE_Locale (ISO 19135-1:2015, B.2.2.3)	M	N	Class	No specified domain

Table 88 — Associations inherited from SubregisterDescription (via RE_ SubregisterDescription)

Target class	Target role name	Definition	M/C/O	Max occur
ItemClass (ISO 19135-1:2015, 7.4.2.)	containedItemClass	describes the characteristics of a class of items held in the subregister NOTE In the case of a simple register, reference language subregister or submitted language subregister, the item class shall be "terminological entry" (defined in 4.37).	M	N
RegisterStakeholder (ISO 19135-1:2015, 7.3.2)	subregisterManager	identifies the TermStakeholder that is the manager of the subregister	M	1

Annex A
(normative)

Abstract test suite

A.1 Conformance class: Selection and harmonization of concepts

A.1.1 Test 1: Selection of concepts

a) Test purpose: Ensure that the requirements regarding the selection of concepts are satisfied.

b) Test method: Verify that all concepts central to the understanding of the geographic information standard or technical specification have been identified and that each has a terminological entry in the terminology of that document. Verify that existing concepts have been reused to the maximum possible extent. Verify that none of the concept definitions correspond to those in general language dictionaries.

c) Reference: 7.3.

d) Test type: Basic.

A.1.2 Test 2: Development of concept system

a) Test purpose: Ensure that the concepts have been structured according to the relations among them.

b) Test method: Verify that a concept system has been developed according to the provisions of ISO 704:2009.

c) Reference: 7.4.

d) Test type: Basic.

A.1.3 Test 3: Harmonization of concepts

a) Test purpose: Ensure that there are no overlaps or inconsistencies between existing and proposed concepts.

b) Test method: Verify that appropriate current terminology repositories have been utilized to check for inconsistencies between existing and proposed concepts. Confirm that any necessary harmonization has been performed according to the provisions of ISO 860:2007.

c) Reference: 7.5.

d) Test type: Basic.

A.2 Conformance class: Terminological entry content

A.2.1 Test 1: Terminological entry content

a) Test purpose: Verify that each terminological entry includes the required data categories.

b) Test method: Confirm that each terminological entry includes all mandatory data categories. Confirm that each terminological entry includes conditional data categories in instances where the respective condition criteria have been satisfied. Confirm that only specified mandatory, conditional and optional data categories are included in each terminological entry.

c) Reference: 8.2.2.

d) Test type: Basic.

A.3 Conformance class: Terminological entry drafting

A.3.1 Test 1: Entry number

a) Test purpose: Verify that each entry number satisfies the drafting requirements.

b) Test method: Confirm that each entry number satisfies the requirements specified in 8.3.2, Table 20.

c) Reference: 8.3.2.

d) Test type: Basic.

A.3.2 Test 2: Preferred term

a) Test purpose: Verify that each preferred term satisfies the drafting requirements.

b) Test method: Confirm that each preferred term satisfies the requirements specified in 8.3.3, Table 21.

c) Reference: 8.3.3.

d) Test type: Basic.

A.3.3 Test 3: Admitted term

a) Test purpose: Verify that each admitted term satisfies the drafting requirements.

b) Test method: Confirm that each admitted term satisfies the requirements specified in 8.3.3, Table 22.

c) Reference: 8.3.3.

d) Test type: Basic.

A.3.4 Test 4: Deprecated term

a) Test purpose: Verify that each deprecated term satisfies the drafting requirements.

b) Test method: Confirm that each deprecated term satisfies the requirements specified in 8.3.3, Table 23.

c) Reference: 8.3.3.

d) Test type: Basic.

A.3.5 Test 5: Equivalent term

a) Test purpose: Verify that each equivalent term satisfies the drafting requirements.

b) Test method: Confirm that each equivalent term satisfies the requirements specified in 8.3.4, Table 24.

c) Reference: 8.3.4.

d) Test type: Basic.

A.3.6 Test 6: Abbreviation

a) Test purpose: Verify that each abbreviation satisfies the drafting requirements.

b) Test method: Confirm that each abbreviation satisfies the requirements specified in 8.3.5, Table 25.

c) Reference: 8.3.5.

d) Test type: Basic.

A.3.7 Test 7: Symbols

a) Test purpose: Verify that each symbol satisfies the drafting requirements.

b) Test method: Confirm that each symbol satisfies the requirements specified in 8.3.6, Table 26.

c) Reference: 8.3.6.

d) Test type: Basic.

A.3.8 Test 8: Definition

a) Test purpose: Verify that each definition satisfies the drafting requirements.

b) Test method: Confirm that each definition satisfies the requirements specified in 8.3.7, Table 27.

c) Reference: 8.3.7.

d) Test type: Basic.

A.3.9 Test 9: Non-verbal representation

a) Test purpose: Verify that each non-verbal representation satisfies the drafting requirements.

b) Test method: Confirm that each non-verbal representation satisfies the requirements specified in 8.3.8, Table 28.

c) Reference: 8.3.8.

d) Test type: Basic.

A.3.10 Test 10: Examples

a) Test purpose: Verify that each example satisfies the drafting requirements.

b) Test method: Confirm that each example satisfies the requirements specified in 8.3.9, Table 29.

c) Reference: 8.3.9.

d) Test type: Basic.

A.3.11 Test 11: Notes to entry

a) Test purpose: Verify that each note to entry satisfies the drafting requirements.

b) Test method: Confirm that each note to entry satisfies the requirements specified in 8.3.10, Table 30.

c) Reference: 8.3.10.

d) Test type: Basic.

A.3.12 Test 12: Source

a) Test purpose: Verify that the source information for each terminological entry or component satisfies the drafting requirements.

b) Test method: Confirm that the requirements specified in 8.3.11, Table 31 have been satisfied.

c) Reference: 8.3.11.

d) Test type: Basic.

A.4 Conformance class: Cultural and linguistic adaptation

A.4.1 Test 1: Reference environment

a) Test purpose: Verify that the requirements regarding cultural and linguistic adaptation from the reference environment have been satisfied.

b) Test method: Confirm that the translation of each terminological entry has been from the reference language to that of the adopting organization and not from the language of another adopting organization.

c) Reference: 8.4.2.

d) Test type: Basic.

A.4.2 Test 2: Degree of correspondence

a) Test purpose: Verify that the degree of correspondence of each culturally and/or linguistically adapted terminological entry has been determined.

b) Test method: Confirm that the technical content of each culturally and/or linguistically adapted terminological entry has been compared with that of the original entry in the reference language to determine the degree of correspondence. Confirm that a note to entry has been added to the adapted terminological entry if the degree of correspondence is “Modified” or “Not equivalent”.

c) Reference: 8.4.3.

d) Test type: Basic.

A.5 Conformance class: Layout and formatting of terminological entries

A.5.1 Test 1: Terminological entry presentation

a) Test purpose: Verify that terminological entries in human-readable documents are correctly presented.

b) Test method: Confirm that the presentation of each terminological entry conforms to the layout and format specified in Annex C.

c) Reference: 9.3 and Annex C.

d) Test type: Capability.

A.6 Conformance class: Terminology register structure

A.6.1 Test 1: Simple terminology register

a) Test purpose: Verify that a simple terminology register satisfies the requirements regarding structure.

b) Test method: Confirm that the simple terminology register satisfies the requirements specified in 10.2.2, Table 38.

c) Reference: 10.2.2.

d) Test type: Basic.

A.6.2 Test 2: Hierarchical multi-lingual terminology register

a) Test purpose: Verify that a hierarchical multi-lingual terminology register satisfies the requirements regarding structure.

b) Test method: Confirm that the hierarchical multi-lingual register satisfies the requirements specified in 10.2.3, Table 39.

c) Reference: 10.2.3.

d) Test type: Basic.

A.6.3 Test 3: Reference language subregister

a) Test purpose: Verify that a reference language subregister satisfies the requirements regarding language and terminological entry identifiers.

b) Test method: Confirm that:

— the reference language has been specified by the owner of the principal register,

— the reference language subregister contains only terminological entries in the reference language,

— all proposals regarding additions or changes to the reference language subregister are submitted in the reference language,

— every terminological entry in the reference language subregister has a terminological entry identifier.

c) Reference: 10.2.4.

d) Test type: Basic.

A.6.4 Test 4: Submitted language subregister

a) Test purpose: Verify that a submitted language subregister satisfies the requirements regarding language and terminological entry identifiers.

b) Test method: Confirm that:

— the language used in each submitted language subregister is different to the reference language,

— the terminological entries in each submitted language subregister are translations or equivalents of terminological entries in the reference language subregister,

— the terminological entries in each submitted langage subregister include the terminological entry identifier assigned to its corresponding terminological entry in the reference language subregister.

c) Reference: 10.2.5.

d) Test type: Basic.

A.7 Conformance class: Terminology register stakeholders

A.7.1 Test 1: Register stakeholders general requirement

a) Test purpose: To verify that each register and subregister has a register owner, a register manager, and at least one submitting organization.

b) Test method: In the case of a simple register, identify and contact the register owner to confirm that a register manager has been appointed and that there is at least one submitting organization. In the case of a hierarchical multi-lingual register, identify and contact the register owner of the principal register to confirm that:

— a register manager has been appointed for the principal register and reference language subregister,

— there is at least one submitting organization for the reference language subregister,

— there is a register owner, register manager and at least one submitting organization for each submitted language subregister.

c) Reference: 10.3.2.

d) Test type: Basic.

A.7.2 Test 2: Terminology register owner

a) Test purpose: To verify that the register owner is performing the required tasks in accordance with the requirements of ISO 19135-1:2015, 5.2.

b) Test method: Contact the register owner to determine:

— the terms and conditions regarding access to the register,

— the identity of the register manager,

— the criteria for determining the organizations that may act as submitting organizations,

— the process for submitting organizations to appeal decisions of the control body (if established).

c) Reference: 10.3.3.

d) Test type: Basic.

A.7.3 Test 3: Terminology register manager

a) Test purpose: To verify that the register manager is managing the register in accordance with the requirements of ISO 19135-1:2015, 5.3 and ISO 19135-1:2015, Clause 6.

b) Test method: Contact the register manager. Confirm that:

— an information package containing a description of the register and how to submit proposals for changes to the content of the register has been distributed,

— proposals from qualified submitting organizations are being accepted and processed,

— appropriate levels of access are available for submitting organizations and register users,

— individual items within the register are being managed (including their status, temporal history and unique identification).

c) Reference: 10.3.4.

d) Test type: Basic.

A.8 Conformance class: Terminology register information package

A.8.1 Test 1: Information package general requirements

a) Test purpose: Verify that a terminology register information package is available for the register.

b) Test method: Contact a submitting organization. In the case of a simple terminology register, confirm that a core information package has been provided to the submitting organization. In the case of a hierarchical multi-lingual terminology register, confirm that a core information package and a supplementary information package has been provided to the submitting organization.

c) Reference: 10.4.2.

d) Test type: Basic.

A.8.2 Test 2: Core information package

a) Test purpose: Verify that the core information package satisfies requirements regarding content.

b) Test method: Examine the core information package. Confirm that the content of the core information package satisfies the requirements in 10.4.3, Table 48.

c) Reference: 10.4.3.

d) Test type: Basic.

A.8.3 Test 3: Supplementary information package

a) Test purpose: Verify that the supplementary information package satisfies requirements regarding content.

b) Test method: Examine the supplementary information package. Confirm that the content of the supplementary information package satisfies the requirements in 10.4.4, Table 49.

c) Reference: 10.4.4.

d) Test type: Basic.

A.9 Conformance class: Terminology register schema

A.9.1 Test 1: Simple terminology register

a) Test purpose: Verify that a terminology register, implemented as a simple register, complies with the schema for a simple terminology register specified by this document.

b) Test method: Inspect the information schema for the implemented register. Confirm that it satisfies the requirements for simple terminology register schema specified in 10.5.4, Table 52.

c) Reference: 10.5.4.

d) Test type: Capability.

A.9.2 Test 2: Hierarchical multi-lingual terminology register

a) Test purpose: Verify that a terminology register, implemented as a hierarchical multi-lingual register, complies with the schema for a hierarchical multi-lingual terminology register specified by this document.

b) Test method: Inspect the information schema for the implemented register. Confirm that it satisfies the requirements for hierarchical multi-lingual terminology register schema that are specified in 10.5.5, Table 53.

c) Reference: 10.5.5.

d) Test type: Capability.

Annex B
(normative)

Multi-lingual environments

B.1 General

This annex summarizes the principles and guidelines established in ISO 10241-2 for adapting standardized terminological entries to alternative cultural and linguistic environments.

B.2 Principles

When adapting standardized terminological entries to an alternative cultural and/or linguistic environment:

— every effort shall be made to adopt the standardized terminological entries without technical deviation,

— any modification to a standardized terminological entry shall be clearly explained,

— a standardizing body representing specific cultural and linguistic as well as domain-specific and subject-specific communities should, if necessary, take special measures to address discrepancies between concept systems to ensure identical technical content,

— the adopting standardizing body shall take responsibility for any documentation on culture-, language-, domain- or subject-specific issues,

— difficulties in adopting an internationally standardized terminological entry shall be recorded and reported to the respective international standardizing body so that the latter can serve as a resource for future harmonization of the terminological entries involved.

Technical content identical to that in the internationally standardized terminological entry should be maintained in the course of adaption by following the principles and methods laid down in ISO 860. In all cases, care shall be taken not to introduce changes to presentation or wording that hide (or disguise) technical deviations, or which make comparison between the internationally standardized terminological entry and the adapted standardized terminological entry difficult.

B.3 Concepts in multi-lingual environments

When adopting internationally standardized concepts, the characteristics of the concepts shall first be analysed and compared with those of existing regional or national concepts.

Concepts are considered identical if the regionally or nationally standardized definition:

— is identical in technical content, terminological data model and wording, or

— is a faithful translation, or

— contains only minor editorial changes that do not alter the technical content.

Where concepts are identical, there is no need for concept harmonization. However, it might still be necessary to harmonize terms and other designations, and also other parts of the terminological entry.

A concept shall be considered modified if its regionally or nationally standardized terminology entry differs from the internationally standardized terminology entry as follows:

— it contains either more or less in terms of available data categories and pertinent information,

— the internationally standardized definition has been altered such that only part of the technical content is equivalent to the regionally or nationally standardized definition,

— it has less stringent wording or wording that is very different,

— the designation is assigned a different normative status as being preferred, admitted or deprecated.

Where there is an unavoidable technical deviation between an internationally standardized concept and a regionally or nationally standardized concept, the nature of the technical deviation shall be explained in a note to entry.

Where an internationally standardized concept corresponds to two or more regional or national concepts, the internationally standardized concept as a whole shall be maintained. In the regional or national vocabulary, it shall be clearly indicated which terminological entries represent the internationally standardized concept and which represent the additional regionally or nationally standardized concepts.

Where one regional or national concept corresponds to two or more internationally standardized concepts, the regional or national concept should be maintained and clearly marked as a regionally or nationally standardized concept, with the two or more internationally standardized terminological entries additionally adopted, with the necessary cross-references.

If concepts pertaining to regional or national environments or cultures are not covered by internationally standardized terminological entries, such concepts should be added to the corresponding internationally standardized concepts with a clear indication of the regional or national standardizing body.

If a concept only exists as an internationally standardized concept, a regionally or nationally standardized concept shall be developed as described in Clause 7.

B.4 Terms

There is typically no one-to-one correspondence between the number and nature of terms, abbreviations, homographs, homophones and other verbal designations in standardized terminological entries in different languages that are equivalent in technical content. A regional or national terminological entry can have more or fewer synonyms and homographs than the internationally standardized terminological entry and vice-versa.

Every effort should be made to select or form an adequate term in the language of the adopting standardizing body. If no suitable term exists, a regional or national term should be selected or developed. Options for doing this are presented in ISO 704:2009, Annex B. They include (but are not limited to):

— creating a new term by following the general principles of term formation, and

— translating (literally) the term from the internationally standardized terminological entry.

The new or selected term should comply with the principles for term formation provided in 8.3.3. Care should be taken to ensure that the term:

— fits the definition of the standardized concept to be adopted,

— conforms to the legal provisions, standards and both linguistic and domain- or subject-specific conventions of the language of the adopting standardizing body,

— does not establish a homograph or homophone in the language of the adopting standardizing body,

— minimizes the potential for variants, synonyms and homonyms in the language of the adopting standardizing body,

— is not similar to a homographic or homophonic registered trade name or trade mark,

— is acceptable to, and comprehendible by, the culture and society in which it will be used,

— does not have any linguistic issues related to its representation in phonetic symbols,

— cannot become or be mistaken for an identifying name or title in the language of the adopting standardizing body.

When adopting and translating an internationally standardized term, certain structural or syntactic features of the term may become lost or pose translation difficulties. Such features may include:

— the order of term elements as well as segmentation or compounding,

— the gender or word class,

— the inflection and conjugation,

— the affixes (i.e. prefixes, suffixes and infixes),

— the number (i.e. plural or singular), and

— the way of pointing to, or counting, objects.

Structural elements may have to be added to the translated term to accommodate the linguistic conventions of the language.

Care should be taken to ensure that any presentation details affecting the interpretation of a term are reflected in the translation. Such elements and their rendering are sometimes overlooked because their significance is either not recognized or is inadvertently omitted or changed. They may include:

— formatting and displaying data,

— syntactic signs (i.e. punctuation marks, hyphens, parentheses, square brackets and other connectors and delimiters),

— mathematical symbols,

— fonts (i.e. bold, italic, bold italic and other style conventions),

— typographical signs,

— text expansion.

B.5 Abbreviations

The translation of a terminological entry into another language may be subject to legally prescribed, standardized or conventional rules for forming abbreviations in that language.

B.6 Definitions

Regionally or nationally standardized definitions shall be renderings of the adopted internationally standardized definitions in the language(s) of the adopting standardization body.

The definitions shall reveal the intension or extension of the concept in the form that best complies with the linguistic rules and conventions in the language of the adopting standardizing body as well as the domain- and subject-specific conventions.

Special care shall be taken to ensure identical technical content in the definition. Any adaptations or modifications shall be explained in a note to entry.

Difficulties that may arise when a definition is to be translated into another language (necessitating significant linguistic adaptation to maintain technical content equivalence) include:

— differences in the rules whereby words or other elements of sentence structure are combined to form grammatical sentences (possibly rendering literal translations nonsensical),

— different word segmentation and compounding rules in the language of the adopting standardizing body,

— the use of ideographic characters (in languages such as Chinese and Japanese) to represent concepts or to indicate important characteristics of a concept, making it difficult to follow the wording of the definition of the internationally standardized concept,

— conventions regarding the presentation of pictures and figures, formulae, currencies, numerals, units of measure, and dates and calendars,

— presentation details affecting interpretation of content, including fonts, typography and the formatting and displaying of data.

B.7 Other textual constituents of terminological entries

The source of the internationally standardized terminological entry shall be clearly stated.

Examples, particularly if they are language- or culture-specific, may not be able to be sensibly translated into other languages. In such cases, appropriate new examples may have to be found.

A note to entry that applies only to a given language of the internationally standardized terminological entry and is not applicable in the language of the adopting standardizing body shall be indicated as such. Likewise, any note to entry that only applies to the language of the adopting standardizing body shall be indicated as such.

Annex C
(normative)

Format of terminological entries

This annex specifies the requirements for the presentation and formatting of terminological entries in geographic information standards and technical specifications.

They are adopted from ISO 10241-1:2011, A.1.2 and A.1.3.

Table C.1 specifies the order of presentation of the data categories in a terminological entry. A terminological entry may include all or a subset of the data categories depending on the need to include conditional and/or optional data categories. Table C.2 specifies the formatting requirement for each data category.

Table C.1 — Terminological entry presentation

Data category	Layout
Entry number	#.#
Term(s)	**preferred term**, gender number part of speech language script COUNTRY_CODE /pronunciation/ admitted term, gender number part of speech language script COUNTRY_CODE /pronunciation/ letter symbol, graphical symbol, language script COUNTRY_CODE DEPRECATED: deprecated term, gender number part of speech language script COUNTRY_CODE /pronunciation/
Definition	<domain or subject> definition … definition … cross-referenced term (#.#) … definition … definition … definition non-verbal representation or "SEE: …"
Examples	EXAMPLE Example of designation usage.
Notes to entry	Note # to entry: Additional information regarding the term(s), letter symbol, graphical symbol, definition, non-verbal representation, example, a given language section of a multi-lingual terminological entry or the entire terminological entry.
Source	[SOURCE: indication(s) of the source, as applicable, for the term(s), letter symbol, graphical symbol, definition, non-verbal representation, example or any language section of a multi-lingual terminological entry.]

Table C.2 — Format of terminological data categories

Data category	Position	Style
Entry number	Beginning of a terminology entry.	Bold.
Preferred term	Following the terminological entry number, on a new line.	Bold.
Admitted term(s) (if applicable)	Following the preferred term(s), on a new line. If there is more than one admitted term, each admitted term follows the previous one on a new line.	Regular.
Deprecated term(s) (if applicable)	Following the admitted term(s), on a new line. If there is more than one deprecated term, each deprecated term follows the previous one on a new line.	Regular, preceded by the text "DEPRECATED:".
Symbol(s) (letter and graphical) (if applicable)	If a symbol is the preferred designation, it precedes the preferred term(s). If a symbol is not the preferred designation, following preferred, admitted and deprecated terms (together with their related information, if applicable) on a new line. Where there is more than one symbol which is not the preferred designation, each symbol shall follow the previous symbol on a new line.	Quantities and units: in accordance with the style as defined in the ISO/IEC Directives, Part 2. Letter symbols not defined in the ISO/IEC Directives, Part 2: in accordance with the style conventionally used in running text. Usage information: Regular.
Specification of domain or subject (if applicable)	Following any symbol, on a new line.	Regular. Enclosed in left and right angle brackets "<...>" followed by the definition on the same line.
Definition	Following any symbol, on a new line (after the specification of domain or subject if included).	Regular except for — letter symbols, graphical symbols and other non-verbal designations, which are rendered as conventionally used in running text, and — referenced terms, which are rendered in italic the first time they occur, if standardized in the same or another standard. The definition shall not be followed by a full-stop.
Non-verbal representation (if applicable)	Following the definition on a new line. Preceded by a blank line.	As conventionally used in the respective domain.

Table C.2 *(continued)*

Data category	Position	Style
Example (if applicable)	Following any non-verbal representation, on a new line. Preceded by a blank line.	Preceded by the text "EXAMPLE". Regular except for: — letter symbols, graphical symbols and other non-verbal designations, which are rendered as conventionally used in running text, and — referenced terms, which are rendered in italic the first time they occur if standardized in the same or another standard.
Note to entry (if applicable)	Following any example, on a new line. Preceded by a blank line.	Preceded by the text "Note # to entry:" followed by the text of the note to entry. Numbered with Arabic numerals, starting at "1" for each terminological entry. Regular except for: — graphical symbols and other designations, which are rendered as conventionally used in running text, or — referenced terms, which are rendered in italic the first time they occur, if standardized in the same or another standard.
Source of entire terminological entry (if applicable)	At the end of the terminological entry on a new line. Preceded by a blank line.	Regular, preceded by the text "SOURCE:". Enclosed in square brackets "[...]". If the source has been modified, the indication of the source is followed by the string "modified" together with the explanation of the modification.

Annex D
(informative)

Example of a core information package — ISO/TC 211 Multi-Lingual Glossary of Terms

D.1 Purpose

This annex presents the core information package for the ISO/TC 211 Multi-Lingual Glossary of Terms.

It is included as an example of how a core information package may be structured.

The content of this core information package is normative for ISO/TC 211 but informative for all other organizations.

D.2 Overview

ISO/TC 211 maintains and operates a hierarchical multi-lingual terminology register called the ISO/TC 211 Multi-Lingual Glossary of Terms.

This core information package presents information regarding the register's reference language subregister. More particularly, it describes:

— the responsibilities of the register stakeholders (owner, register manager and submitting organizations),

— the processes for enabling terminological entries to be added or amended, and

— the processes for assessing and harmonizing proposed terminological entries.

D.3 Stakeholders and responsibilities

D.3.1 Register owner

The register owner shall be the technical committee *ISO/TC 211 Geographic information/Geomatics*.

The register owner shall be responsible for:

— the appointment of the register manager,

— the replication of terminological entries from published International Standards and Technical Specifications into the register's reference language subregister (including the assignment of terminological entry identifiers),

— the operation and maintenance of a public-access Website for the register, and

— the promotion of the register.

D.3.2 Register manager

The register manager shall be the *ISO/TC 211 Terminology Maintenance Group* (TMG).

The TMG shall be accountable to the register owner and shall provide a report to the register owner at each ISO/TC 211 plenary meeting.

The responsibilities of the TMG shall be to:

— administer, coordinate, maintain, and publish the register, ensuring that it complies with the requirements of this document and ISO 19135-1 and is readily accessible by ISO/TC 211 members and the wider geospatial community,

— assist project teams and working groups with harmonizing ISO/TC 211's terminology,

— when required, collaborate with recognized spatial standards bodies to facilitate the cross-mapping of ISO/TC 211's terminology with that of other spatial industry sectors,

— contribute to the standardization of spatial concepts by monitoring and engaging with the broader spatial community.

The TMG shall comprise:

— a convener,

— all ISO/TC 211 working group leaders,

— a member of each ISO/TC 211 project team (preferably the editor),

— a member of each national body that has contributed a submitted language subregister.

In addition, a liaison shall be appointed to each spatial community of interest that engages in a terminology cross-mapping initiative with ISO/TC 211. A liaison from each of these communities will be invited to serve on the TMG.

The TMG convenor shall be responsible for the operation of the TMG.

Membership of the TMG shall be for a two-year term or for the balance of a two-year term in the case of a working group that is established part-way through a term. Each term shall commence on 1st January of even-numbered years (2014, 2016, etc.). Members of the TMG will be eligible for reappointment for further terms.

In the event of a working group being dissolved (for example, as a result of all its work items being completed), the representatives from the working group shall remain members of the TMG until all related terminology issues have been resolved. They will then withdraw.

In the event of all working groups being dissolved, the register owner, upon the completion of all related terminology work, shall suspend the TMG until such time as new work items are introduced.

D.3.3 Submitting organizations

Submitting organizations shall be:

— ISO/TC 211 project teams, working groups, liaisons and Secretariat (for draft documents and other proposals),

— the ISO Central Secretariat (for published International Standards and Technical Specifications).

Each ISO/TC 211 working group leader shall be responsible for nominating representatives to the TMG and for advising the TMG convenor of the availability of relevant new documents.

D.4 Processing of proposals

D.4.1 Terminology Repository

All proposals for adding, amending or clarifying terminological entries in the reference language subregister of the ISO/TC 211 Multi-Lingual Glossary of Terms shall be processed through the ISO/TC 211 Terminology Repository.

The ISO/TC 211 Terminology Repository shall take the form of a computer database or equivalent computer-based system. The repository shall include all terminological entries (historic, existing and proposed) defined in ISO/TC 211 geographic information standards, technical specifications and drafts.

Read-only access shall be available to all ISO/TC 211 members. Read and write access shall be available to the Register Manager.

D.4.2 Status values

Each terminological entry in the Terminology Repository shall be assigned one of the following status values:

— Submitted - The terminological entry has been entered into the Terminology Repository, but the register owner has not yet accepted it as valid.

— Valid - The item has been accepted, is recommended for use, and has not been superseded or retired.

— Superseded - The item has been superseded by another item and is no longer recommended for use.

— Retired - A decision has been made that the item is no longer recommended for use. It has not been superseded by another item.

— Invalid - A decision has been made that a previously valid register item contains a substantial error and is invalid. It will normally be replaced by a corrected item.

A terminological entry having the status “submitted” shall also be assigned one of the following sub-status values:

— Candidate – Newly entered terminological entry that has not completed assessment;

— Draft – Terminological entry that has completed assessment and conforms to the “one term, one definition, one concept” principle.

A terminological entry having the status “valid” shall also be assigned one of the following sub-status values:

— Normative – Terminological entry that has been published in an International Standard or Technical Specification and does not conflict with terminological records in other ISO geographic information standards;

— Normative/Conflict – Terminological entry that has been published in an International Standard or Technical Specification and conflicts with terminological records in other ISO geographic information standards.

The status and sub-status values are illustrated in Table D.1.

At the time of entry to the Repository, the status/sub-status of a terminological entry shall be Submitted/Candidate (unless it is already published in an International Standard or Technical Specification in which case it shall be Valid/Normative).

Progression of a term from Submitted/Candidate to Submitted/Draft status will depend on an assessment by the Register Manager. It may also depend on harmonization consultations between interested parties. Submitted/Draft status indicates that significant stability has been achieved as regards the term and its definition, and that the terminological entry is ready for publication.

Progression from Submitted/Draft to Valid/Normative status can only occur when the terminological entry is published in an International Standard or Technical Specification.

Table D.1 — Status and sub-status

Status	Sub-status
Submitted	Candidate
	Draft
Valid	Normative
	Normative/Conflict
Superseded	
Retired	
Invalid	

D.4.3 Assessment process

Proposals for adding, amending or clarifying terminological entries shall be presented as either:

— terminological entries in a draft or published International Standard/Technical Specification, or

— a specific proposal document registered on the ISO/TC 211 document register, or

— a resolution of an ISO/TC 211 Plenary meeting.

In the case of a proposal document,

— the proposal shall be submitted by an ISO/TC 211 member or liaison,

— the proposal shall be driven by a clear business need (unnecessary proliferation of terminology being discouraged),

— the proposal shall include the term, its definition, a description of the associated concept, and the relationship to existing ISO/TC 211 terms and/or concepts.

All proposals shall be presented in English (the reference language).

The register manager shall review each proposal within two months of receipt. The register manager shall

— add the proposed or amended terminological entries to the Terminology Repository,

— ensure that each terminological entry is accompanied by:

  — the identifier of the document containing the entry,

  EXAMPLE 1 N3484, ISO/DIS 19135-1:2013(E).

— the identifier of the ISO standard in which the entry appears,

  EXAMPLE 2 ISO 19135-1.

  — the document type,

  EXAMPLE 3 WD, Text for CD, FDIS.

  — the date of entry into the repository,

— allocate a status and sub-status indicator to each terminological entry as described in D.4.2 of this core information package,

— undertake the proposal review process described in D.5 of this core information package, and

— facilitate any required harmonization processes described in D.5.2.3 of this core information package.

D.4.4 Entry into Multi-Lingual Glossary of Terms

A terminological entry shall be eligible for inclusion in the reference language subregister of the Multi-Lingual Glossary of Terms if it has attained Valid/Normative status in the Terminology Repository.

Valid/Normative status shall be attained if the terminological entry has been:

— published in an International Standard or Technical Specification, or

— declared valid through a resolution of an ISO/TC 211 Plenary Meeting.

The register manager shall be responsible for:

— including the entry in the reference language subregister of the Multi-Lingual Glossary of Terms,

— changing the status of any superseded or retired entries as necessary.

Public access to the ISO/TC 211 Multi-Lingual Glossary of Terms shall be available at <www.isotc211.org>.

D.5 Proposal review process

D.5.1 Objective

The objective of the proposal review process is to ensure that each terminological entry conforms to the "one term, one definition, one concept" criterion (i.e. a one-to-one correspondence between a term and a concept, and a one-to-one correspondence between a definition and a concept) and does not conflict with existing terminology.

D.5.2 Additions and modifications

D.5.2.1 Submitted/Candidate terminological entries

The proposal review process shall consider each Submitted/Candidate terminological entry individually and shall proceed as follows.

a) Perform Concept, Structure and Circularity Tests

   1) Determine if the requirements for the selection and harmonization of concepts in 7.2 have been satisfied.

   2) Determine if the requirements for terminological entry content in 8.2 and for terminological entry drafting in 8.3 have been satisfied.

   3) Confirm that the definition can be understood and is non-circular.

   4) Refer terminological entries from working drafts that fail to satisfy the requirements in 1), 2) or 3) above back to the appropriate working group for correction.

   5) Terminological entries from committee drafts or later that fail to satisfy the requirements in 1), 2) or 3) above will be referred back through appropriate TMG or national body comments.

b) Perform the "One Concept, One Definition" Test

   1) Determine if there are other terminological entries for the same concept in the Terminology Repository originating from other standards or earlier drafts of the standard in question. If yes, extract all entries for the concept from the Terminology Repository. If no, classify the concept as having satisfied the "One Concept, One Definition" criterion but requiring "One Concept, One Term" testing.

   2) If a terminological entry for the same concept, originating from an earlier draft of the same standard, has been extracted from the Terminology Repository, determine if the definitions in

the earlier and Submitted/Candidate entries are identical. If yes, flag the earlier terminological entry for supersession. If no, retain the Submitted/Candidate entry's current status and document the need for harmonization with other standards that have adopted the definition in the earlier draft.

3) If other terminological entries for the same concept, originating from other draft standards, have been extracted from the Terminology Repository, determine if all definitions are identical to those of the Submitted/Candidate entry. If yes, reclassify the Submitted/Candidate entry as Submitted/Draft. If no, retain the entry's Submitted/Candidate status and document the need for harmonization.

4) If other terminological entries for the same concept, originating from published International Standards or Technical Specifications, have been extracted from the Terminology Repository, determine if all definitions are identical to those of the Submitted/Candidate entry. If yes, the entry is already Valid/Normative. If no, retain the entry's Submitted/Candidate status and document the need for harmonization.

c) Perform the "One Concept, One Term" Test

1) Each Submitted/Candidate terminological entry that has not previously appeared in other standards or earlier drafts of the standard in question will be subjected to a "One Concept, One Term" test by members of the TMG. The members shall individually examine the Terminology Repository to determine whether the concept described by the definition is already adequately identified by another terminological entry. Consultation with relevant working groups may be required. If an alternative term exists, retain the Submitted/Candidate entry's status and classify it as requiring harmonization. Do not change the status of the entry containing the alternative term. If no alternative term is identified, classify the terminological entry as being Submitted/Draft.

d) Test for retired candidate terminological entries

1) The test for retired terminological entries is to be performed if the terminology from an earlier draft of the standard was previously entered into the Terminology Repository.

2) For each item in the earlier draft, check if an identical terminological entry occurs in the current draft.

3) If an identical terminological entry does not exist in the current draft, check if an identical entry appears in other standards.

4) If an identical terminological entry does not exist in the current draft or in in other standards, change the status of the terminological entry to Superseded or Retired (as appropriate) in the Terminology Repository.

Valid terminological entries that have been specifically nominated for retirement shall be classified accordingly in the Terminology Repository and in the reference language subregister of the ISO/TC 211 Multi-Lingual Glossary of Terms.

D.5.2.2 Valid/Normative terminological entries

A working draft or committee draft may include Valid/Normative terminological entries that have been adopted from other International Standards. The TMG shall review these entries to ensure that they harmonize with ISO 19100-series concepts and terminology. The TMG shall refer any problems to the appropriate working group or editing committee (in the latter case through national body comments).

D.5.2.3 Harmonization

Submitted/Candidate terminological entries that require harmonization shall be directly referred to the appropriate working groups. In addition, where the source document is at CD or DIS, the Register

Manager shall identify terminology harmonization issues in comments formally forwarded to the ISO/TC 211 Secretariat.

It is expected that harmonization issues will mostly occur in working drafts and early committee drafts. The register manager will facilitate discussions between the interested parties (generally via e-mail) to achieve a resolution of the issues. Should resolution not be possible within the period allowed for consideration and comment, the register manager will call a meeting at the next ISO/TC 211 plenary to resolve the issues.

Any terminological entries for which consensus cannot be achieved during the consultation process will retain their Submitted/Candidate status and will be considered further by the relevant ISO/TC 211 working groups. The register manager will facilitate this process. The register manager will not make decisions about the definitions to be adopted for concepts but may make recommendations to the working groups.

Terminological entries that have been successfully harmonized shall be reassessed by the register manager when they are resubmitted as part of a revised draft standard.

D.5.3 Supersession, retirement and invalidation

A proposal to supersede or retire a terminological entry in the Multi-Lingual Glossary of Terms may result from

— a decision to change the definition or delete the terminological entry entirely when revising a published International Standard or Technical Specification,

— a corrigendum proposing a change to the definition or deletion of the terminological entry in a published International Standard or Technical Specification,

A corrigendum may also be used to invalidate a terminological entry.

In all cases, drafts of the revised International Standard, Technical Specification or corrigendum shall be processed through the Terminology Repository as described in D.4.3 until they achieve Valid/Normative status. At that time, the status of the original terminological entries shall be changed to Superseded, Retired or Invalid in both the Terminology Repository and the reference language subregister of the Multi-Lingual Glossary of Terms.

A proposal to modify, supersede, retire or invalidate a published terminological entry outside of the normal standards development/revision process shall require a resolution at an ISO/TC 211 Plenary meeting. Following adoption of the resolution:

— the status of the original terminological entries shall be changed to Superseded, Retired or Invalid in both the Terminology Repository and the reference language subregister of the Multi-Lingual Glossary of Terms,

— a register manager's note shall be included with each of the entries in the Terminology Repository advising of the need to implement equivalent changes in the respective International Standards or Technical Specifications.

Annex E
(informative)

Example of supplementary information package — ISO/TC 211 Multi-Lingual Glossary of Terms

E.1 Purpose

This annex presents the supplementary information package for the ISO/TC 211 Multi-Lingual Glossary of Terms.

It is included as an example of how a supplementary information package may be structured.

The content of this supplementary information package is normative for ISO/TC 211 but informative for all other organizations.

E.2 Overview

ISO/TC 211 maintains and operates a hierarchical multi-lingual terminology register called the ISO/TC 211 Multi-Lingual Glossary of Terms.

The reference language for the register is English.

This supplementary information package describes the process for adding and maintaining submitted language subregisters.

EXAMPLE A subregister in French, a subregister in Arabic, a subregister in Chinese.

The package is intended for use by submitting organizations.

E.3 Stakeholders and responsibilities

E.3.1 Register owner

The register owner shall be the technical committee *ISO/TC 211 Geographic information/Geomatics*.

The primary responsibilities of the register owner are described in the core information package for this register. In addition, the register owner shall be responsible for:

— informing submitting organizations of any additions, retirements or amendments to the terminological entries in the reference language sub-register.

The register owner shall not be responsible for the translations of terminological entries undertaken by submitting organizations.

E.3.2 Register manager

The register manager shall be the ISO/TC 211 Terminology Maintenance Group (TMG).

The primary responsibilities of the register manager are described in the core information package for this register. In addition, the register manager shall be responsible for:

— maintaining the principal register,

— adding, updating or deleting submitted language subregisters,

— liaising with submitting organization representatives on terminology policy and administrative matters,

— advising national body representatives of new and retired terms,

— assisting with the common understanding of concepts,

— facilitating the harmonization of terms,

— circulating submitted translations for comment,

— publishing the translated terms,

— formulating revisions of the Operating Procedures as necessary,

— reporting on the status of the Glossary at each plenary meeting of ISO/TC 211.

The register manager shall not be responsible for the translation of terminological entries, nor for the quality of the translated information.

E.3.3 Submitting organizations

Each national body and liaison organization shall be a submitting organization.

Every submitting organization shall be responsible for:

— the translation of terminological entries from the reference language into its submitted language,

— the implementation of appropriate quality assurance procedures to ensure that each concept has been correctly comprehended and translated,

— the provision of the appropriate authorization to allow the translated terminological entries to be published on the ISO/TC 211 Website.

In addition, each submitting organization will be responsible for advising the register owner of any changes to the translation of a terminological entry.

E.4 Communication

Communication on operational issues, including the clarification of concepts and the harmonization of terms, should be direct to the register manager.

Formal communication with ISO/TC 211 should take place through the ISO/TC 211 Secretariat.

E.5 Subregister establishment and population

E.5.1 Subregister establishment

The register manager shall establish a submitted language subregister for a specific language following:

— a request from the appropriate submitting organization, and

— the delivery of the terminological entries and metadata in the specified submitted language.

The register manager shall provide the submitting organization with a template identifying the terminological data categories and metadata to be included.

The register manager shall record the establishment of the submitted language subregister in the principal register.

E.5.2 Ultimate authority for languages

Each national body shall be considered the ultimate authority as regards the correct use and interpretation of its national language(s).

E.5.3 Mandatory and optional elements

10.5 specifies the mandatory, conditional and optional elements to be included in a submitted language subregister. Note that when translating an entry, it is mandatory that both the term and definition be translated and associated with the correct terminological entry identifier in the reference language subregister.

E.5.4 Translation considerations

In instances where a literal translation of a reference language term and/or definition is impractical or unsatisfactory, an equivalent national language term and /or definition may be substituted. In such cases, the key consideration shall be to ensure that the equivalent term/definition fully, completely and sensibly describes the concept represented by the reference language term/definition. This is discussed further in Annex B.

E.5.5 Quality assurance

Each submitting organization shall be responsible for implementation of appropriate quality assurance procedures to ensure that each concept is interpreted correctly.

It is strongly recommended that each submitting organization consult with appropriate GIS practitioner associations within its country regarding the translation of ISO/TC 211 terms/definitions and the provision of term equivalents. This is especially desirable if such associations maintain their own terminology lists.

E.5.6 Amount to be translated

It is not mandatory that the entire reference language subregister be translated. Each submitting organization may translate as much or as little as they consider necessary for their national objectives or regional obligations.

E.5.7 Timeframe

There is no specific timeframe for submitting organizations to complete translation activity. It is expected that the rate of progress will be governed by the business priorities of each submitting organization and by its capacity to resource the work relative to other priorities.

E.5.8 Use of non-verbal representations

In some instances, it may be desirable to link a non-verbal representation (picture or other graphic) to the terminological entry to illustrate the concept being defined. This will be decided on a case-by-case basis. Submitting organization representatives should consult with the register manager if they consider the inclusion of a picture, or reuse of an existing picture, to be necessary.

E.5.9 Delivery

Delivery of translated terminological entries to the register owner may commence prior to completion of translation activity. Delivery of small groups of terminological entries is welcome subject to quality assurance and authorization processes having been completed.

All translated terminology shall be submitted through the submitting organization's Secretariat to the ISO/TC 211 Secretariat.

E.6 Multi-language and multi-country considerations

E.6.1 One language, many countries

There are several instances where a single language is widely spoken in two or more countries. In such cases, it is possible that the countries may differ in the way they utilize certain terms. An example involving United Kingdom (UK) English and United States (US) English is given below.

EXAMPLE 1 In the UK, the term "pavement" refers to the area next to a road that is used by pedestrians. A synonym for "pavement" is "footpath".

EXAMPLE 2 In the USA, the term "pavement" refers to the material that forms the hard surface of the road itself. The area reserved for pedestrians is frequently called the "sidewalk".

The register owner recognizes the right of every submitting organization to define its preferred terminology in its own national language(s). However, given that the purpose of the register is to encourage standardization in the use of terminology, affected submitting organizations will be invited to participate in a harmonization process in instances where inconsistencies occur. The process would proceed in a manner similar to that described in D.5.2.3. Translated terminological entries that require harmonization would be directly referred to the appropriate submitting organization. The register manager would facilitate discussions between the interested parties (generally via e-mail) to achieve a resolution of the issues. Should resolution not be possible within the period allowed for consideration and comment, the register manager will call a meeting at the next ISO/TC 211 plenary to resolve the issues.

ISO/TC 211 strongly encourages submitting organizations that share a common language to collaborate in relation to the translation activity.

E.6.2 One country, many languages

It is anticipated that most submitting organizations will wish to translate the reference language subregister into a single national language. Some submitting organizations, however, may wish to translate into several languages or dialects to accommodate the ethnic and cultural composition of a country. This is permissible. In such cases:

— a separate submitted language subregister will need to be prepared, quality-assured and authorized for each language and/or dialect,

— the register owner will need to be advised of the submitting organization representative leading the work on each language.

E.6.3 One country, many character systems

Some countries that use a single national language may wish to translate into two different character systems to enhance the understanding of terms and definitions. For example, in Korea, some terms can be written in Korean and with Chinese characters.

In cases where only the term is to be represented in an alternative character set, it shall be included as an equivalent term. In cases where definitions, notes and examples are also to be represented in the alternative character set, it will be necessary to develop a separate submitted language subregister.

E.7 Maintenance of content

In the event of additions, retirements or amendments being made to the reference language subregister, the following will take place.

— The register owner will inform submitting organizations of the change within two months of it taking place.

— The register manager will:

  — in the case of an addition, add the terminological entry (in the reference language and including the terminological entry identifier) to each submitted language subregister in the register,

  — in the case of a retirement, mark the terminological entry as being superseded or retired in each submitted language subregister in the register,

  — in the case of an amendment, highlight the terminological entry as being under review in each submitted language subregister in the register.

— Each submitting organization will review each addition, retirement or amendment and determine its proposed response.

  — In the case of an addition, the submitting organization shall determine whether the new entry should be translated. Translation should follow the normal processes for quality assurance and authorization.

  — In the case of retirement, the submitting organization shall retire the entry from any local copies of the submitted language subregister.

  — In the case of an amendment, the submitting organization shall determine whether the entry should be re-translated or retired from the submitted language subregister. Re-translation shall follow the normal processes for quality assurance and authorization.

Submitting organizations are requested to advise the register owner of their proposed response as early as possible. The register manager shall revise the submitted language subregisters in accordance with submitting organization advice.

Bibliography

[1] ISO 1087-1:2000, *Terminology work — Vocabulary — Part 1: Theory and application*

[2] ISO 5127:2001, *Information and documentation — Vocabulary*

[3] ISO 15924:2004, *Information and documentation — Codes for the representation of names of scripts*

[4] ISO 19108:2002, *Geographic information — Temporal schema*

[5] ISO/IEC Guide 21-1:2005, *Regional or national adoption of International Standards and other International Deliverables — Part 1: Adoption of International Standards*

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