
**Systems to manage terminology,
knowledge and content — Design,
implementation and maintenance of
terminology management systems**

*Systèmes de gestion de la terminologie, de la connaissance et du
contenu — Conception, mise en œuvre et maintenance des systèmes
de gestion de la terminologie*

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Foreword

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

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

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 26162 was prepared by Technical Committee ISO/TC 37, *Terminology and other language and content resources*, Subcommittee SC 3, *Systems to manage terminology, knowledge and content*.

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Introduction

Terminological data are collected, managed and stored in a wide variety of terminology management systems (TMSs). TMSs employ a variety of database management systems, ranging from personal computer applications for individual users to client server applications or Web-based applications operated by major companies and governmental agencies. Terminological data collections (TDCs) are based on various kinds of data models and consist of different sets of data categories (Data Category Selections, DCSs). To facilitate co-operation and to prevent duplication of work, it is important to develop standards and guidelines for creating and using TDCs as well as for sharing and exchanging data.

ISO/TC 37 has published the following standards in order to facilitate the exchange of terminological data and to create an integrated approach to be used in analysing an existing TDC and in designing new ones: ISO 704, ISO 12620, ISO 16642.

Having some acquaintance with these documents before reading this International Standard would be beneficial.

This International Standard gives guidance on choosing the relevant data categories, as well as designing and implementing a data model and a user interface for a TMS, taking into account the intended user group. The guidelines described in this International Standard are indispensable for the successful development of a TMS and for avoiding costly errors. This International Standard may be used for choosing the appropriate TMS for a certain purpose.

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Systems to manage terminology, knowledge and content — Design, implementation and maintenance of terminology management systems

1 Scope

This International Standard specifies criteria for designing, implementing and maintaining terminology management systems (TMSs).

This International Standard provides information about the rationale for using a TMS, types of users and users' needs, steps in designing and implementing a TMS, as well as the tasks of organizing and managing a terminological data collection (TDC). It also provides guidelines for selecting and using data categories for managing terminology in various environments.

This International Standard is intended for terminologists, software developers and others who are involved in the process of developing or acquiring a TMS.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 704, *Terminology work — Principles and methods*

ISO 12620, *Terminology and other language and content resources — Specification of data categories and management of a Data Category Registry for language resources*

ISO 16642, *Computer applications in terminology — Terminology markup framework*

ISO 30042, *Systems to manage terminology, knowledge and content — TermBase eXchange (TBX)*

3 Terms and definitions

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

3.1 Resources

3.1.1

terminological resource

terminological data collection

TDC

text or data resource consisting of **terminological entries** (3.1.4)

NOTE Adapted from ISO 24613:2008.

3.1.2

terminology management system

TMS

software tool specifically designed for collecting, maintaining, and accessing terminological data

3.1.3

terminological database

TDB

termbase

database comprising a **terminological resource** (3.1.1)

3.1.4

terminological entry

TE

part of a **terminological resource** (3.1.1) that contains the terminological data related to one concept

NOTE Adapted from ISO 1087-2, 2.22. The abbreviated term has been added.

3.1.5

concept orientation

principle applied to terminology management whereby a **terminological entry** (3.1.4) describes one and only one concept or two or more **quasi-equivalent concepts** (3.1.7)

NOTE A concept-oriented entry can contain multiple terms, which are therefore considered semantically equivalent.

3.1.6

equivalent concept

concept in one language that comprises the same characteristics as that covered by a given concept in another language

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3.1.7

quasi-equivalent concept

nearly equivalent concept

concept in one language that shares most but not all characteristics with a concept in another language, but that is nevertheless used as an equivalent for that concept in some contexts

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3.1.8

entailed term

term used in a text field such as the */definition/* or */context/* that designates a concept that is defined in another **terminological entry** (3.1.4) in the same **terminological resource** (3.1.1)

3.1.9

doublette

terminological entry (3.1.4) that describes the same concept as another entry

NOTE Doublettes are normally detected by TMS by identifying two terms having the same form; however, doublettes are determined based on identical concepts, not on identical terms. Doublettes should not be confused with homographs.

3.1.10

concept system

set of concepts structured according to the relationships among them

[ISO 1087-1:2000, 3.2.11]

3.1.11

concept diagram

graphic representation of a **concept system** (3.1.10)

[ISO 1087-1:2000, 3.2.12]

3.1.12**legacy data**

terminological data that are available in an existing file or database, and that are considered for importation into a **TMS** (3.1.2)

NOTE Legacy data may be in the form of previously used databases, word-processing files, comma-delimited text files, SGML, HTML, or XML files, and the like. Conversion of such data to a format that will be compatible with a new TMS can pose serious challenges.

3.1.13**term**

word, or several words, that denote a concept

EXAMPLES “Olympics” and “special Olympics” are two terms in the field of sports.

NOTE 1 When the word or words can denote more than one concept, each word/concept pair is a separate term. For example, “port” (shelter for boats) and “port” (computer connection point) are two different terms.

NOTE 2 In terminology theory, terms denote concepts in specific subject fields, and words from the general lexicon are not considered to be terms. In a TDC, however, words from the general lexicon are sometimes recorded in terminological entries, where they are still referred to as “terms”.

3.2 Data categories**3.2.1****data category**

result of the specification of a data field

[ISO 1087-2:2000, 6.14]

3.2.2**data element**

unit of data that, in a certain context, is considered indivisible

[ISO 1087-2:2000, 6.11]

3.2.3**data granularity**

degree of precision of data

NOTE For example, the set of individual **data categories** (3.2.1) */part of speech/, /grammatical gender/, and /grammatical number/* provides for greater data granularity than does the single data category */grammar/*.

3.2.4**data elementarity**

principle whereby a single data field shall contain only one item of information

NOTE For example, including both a full form and an abbreviation in the same field would be a violation of the principle of data elementarity.

3.2.5**term autonomy**

principle whereby all terms in a **terminological entry** (3.1.4) can be described by using the same set of **data categories** (3.2.1)

3.2.6**Data Category Registry****DCR**

set of standardized **data categories** (3.2.1) to be used as a reference for the definition of linguistic annotation schemes or any other formats in the domain of language resources

[ISO 12620:2009, 3.2.1]

NOTE The ISO/TC 37 DCR contains **data category specifications** (3.2.7), which include historical, descriptive, and administrative information and other metadata.

3.2.7
data category specification

set of attributes used to fully describe a given **data category** (3.2.1)

[ISO 12620:2009, 3.2.2]

NOTE The abbreviation DCS refers to **Data Category Selection** (3.2.8).

3.2.8
Data Category Selection
DCS

set of **data categories** (3.2.1) selected from the **Data Category Registry** (3.2.6)

[ISO 12620:2009, 3.2.3]

3.2.9
complex data category
data category (3.2.1) that has a **conceptual domain** (3.2.11)

[ISO 12620:2009, 3.1.7]

3.2.10
open data category
complex data category (3.2.9) whose **conceptual domain** (3.2.11) is not restricted to an enumerated set of values

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[ISO 12620:2009, 3.1.8]

3.2.11
conceptual domain
set of valid **value meanings** (3.2.14)

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NOTE 1 Based on ISO/IEC 11179-1:2004, 3.3.6.

NOTE 2 The value meanings in a conceptual domain may be enumerated, further specified by additional constraints or expressed via a description. For instance, the **data category** (3.2.1) /*term*/ is described by its definition and thus constrained from properly containing, for example, contextual information or grammatical information, but it would be impossible to enumerate all values associated with this data category.

3.2.12
closed data category
complex data category (3.2.9) whose **conceptual domain** (3.2.11) is restricted to a set of identified **simple data categories** (3.2.13)

[ISO 12620:2009, 3.1.13]

3.2.13
simple data category
data category (3.2.1) with no **conceptual domain** (3.2.11)

[ISO 12620:2009, 3.1.12]

3.2.14
value meaning
meaning or semantic content of a value

[ISO/IEC 11179-1:2004, 3.3.39]

NOTE ISO/TC 37 treats enumerated values as simple data categories, that is, as data categories in their own right. The meaning of a value is always viewed in the context of the overall value domain and the closed data category with which it is associated, and is not just a property of the domain value itself.

3.2.15

value domain

set of **permissible values** (3.2.16)

[ISO/IEC 11179-1:2004, 3.3.38]

3.2.16

permissible value

expression of a **value meaning** (3.2.14) allowed in a specific **value domain** (3.2.15)

[ISO/IEC 11179-1:2004, 3.3.28]

3.2.17

thematic domain

class of applications identified by the similarity of the data structures they need to manipulate

[ISO 12620:2009, 3.4.3]

EXAMPLES Terminology, lexicography, morphosyntactic annotation.

3.2.18

thematic domain profile profile

representation within a **data category specification** (3.2.7) of the **thematic domain** (3.2.17) with which a **data category** (3.2.1) is associated

[ISO 12620:2009, 3.4.4]

NOTE A data category may have several thematic domain profiles, indicating that it is used by several thematic domains.

3.3 Data modelling

3.3.1

data model

graphical and/or lexical representation of data, specifying their properties, structure and inter-relationships

[ISO/IEC 11179-1:2004, 3.2.7]

3.3.2

data modelling

process of structuring and organizing data, typically for implementation in a database management system

3.3.3

data modelling variance

variation in the assignment of **data categories** (3.2.1) to data models as a result of differences in philosophy with respect to the ordering of information in the **terminological entry** (3.1.4)

3.3.4

metamodel

data model (3.3.1) that specifies one or more other data models

[ISO/IEC 11179-1:2004, 3.2.20]

3.3.5

metadata

data that define and describe other data

[ISO/IEC 11179-1:2004, 3.2.16]

3.3.6

global information

GI

technical and administrative information applying to a complete data collection

[ISO 16642:2003, 3.7]

EXAMPLE Title of the data collection, revision history.

3.3.7

complementary information

CI

information supplementary to that described in **terminological entries** (3.1.4) and shared across the **terminological data collection** (3.1.1)

[ISO 16642:2003, 3.1]

EXAMPLE Domain hierarchies, institution descriptions and bibliographical references are typical examples of complementary information.

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3.3.8

shared resource

information object that can be accessed from any of the terminological or lexicographical entries in a terminological or lexicographical resource

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EXAMPLE Shared resources typically include bibliographical entries, responsibility entries, namespace identifiers, frequently referenced textual material, geographical location lists, and external files, such as graphics or audio files.

3.3.9

language section

LS

part of a **terminological entry** (3.1.4) containing information related to one language

[ISO 16642:2003, 3.9]

3.3.10

term section

TS

part of a **language section** (3.3.9) containing information about a **term** (3.1.13)

[ISO 16642:2003, 3.15]

3.3.11

class

object class

⟨UML⟩ description of a set of objects that share the same members

3.3.12

multiplicity

number of instances of one **class** (3.3.11) linked to one instance of another class in a relationship set

NOTE For instance, an origination date may be the same for many terminological entries, but one terminological entry can only have one origination date.

3.4 Applications

3.4.1

language planning

deliberate efforts to influence human behaviour with respect to the acquisition, structure, or functional allocation of language

EXAMPLE Language planning can include the standardization of spelling and grammatical rules, the specification of official national languages, efforts to create viable neologisms designed to increase the capacity of a language as a vehicle for scientific and commercial communication, and measures designed to protect the language from foreign influences.

3.4.2

descriptive terminology

approach for managing terminology that documents the way that **terms** (3.1.13) are used in contexts without indicating preferred usage

3.4.3

prescriptive terminology

approach for managing terminology that indicates preferred usage

3.4.4

normative terminology

approach for managing terminology that is used in standards work or governmental regulation

3.4.5

translation editor

software that supports the process of creating and revising translations

3.4.6

controlled authoring

authoring that uses limited vocabulary and textual complexity to produce clear documents

3.4.7

localization

I10n

process of taking a product and making it linguistically and culturally appropriate to the target locale (country/region and language) where it will be used and sold

[Localization Industry Standards Association]

4 Terminology management system (TMS)

4.1 General description

A TMS is a software tool specifically designed to collect, maintain, and access terminological data. It is used by translators, terminologists, technical writers, and various other users. TMSs shall be based on the principles for terminology work set down in ISO 704, which means that the terminological resources that are created by using a TMS contain terminological entries designed to document concepts and all the terms (synonyms and equivalents in other languages) that denote those concepts.

TMSs are typically used to elaborate, maintain and disseminate TDCs in a variety of organizational environments, including national bodies, government agencies, interest groups, companies, and individuals. Depending on the organizational framework, the TMS will need to support a variety of necessary features, different tasks and potential users.

When planning a software application for terminology management, it is important to consider the different possible types or categories of TMS.