
**Health informatics — Development
of terms and definitions for health
informatics glossaries**

*Informatique de santé — Développement des termes et définitions
pour les glossaires d'informatique de santé*

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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 WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 215, *Health informatics*.

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Introduction

General Introduction

Health Informatics is serviced by multiple Standards Development Organizations, each with their own need for consistent definitions of the terms they use. The evolution of glossaries across these organizations has resulted in standards products where, increasingly, terms are defined and/or used in different ways. This situation leads to a lack of clarity in the use and meaning of health informatics around the world.

There are many national and international efforts to write and use clear standards to support the development of electronic health care initiatives. There are many standards and terms defined, however, finding the relevant standard, recording suggested improvements, and encouraging the use of standard terms is an ongoing issue to all involved in the development of these documents and in their use. This Technical Specification provides details of the metadata and requirements for inclusion and construction of quality terms and definitions in health informatics glossaries. In the context of the recognised requirement for a single international health informatics glossary, the following are the purposes of this Technical Specification:

- to collate relevant standards and guidance for the development of quality terms and definitions;
- to provide procedural standards for the introduction and management of terms in health informatics standards products in order to rationalize the use of these terms;
- to reduce the effort required for standards development to create and decide upon terms and definitions used in the documents produced by health informatics standards organizations;
- to support the development of international e-health initiatives through a consistent approach to development and use of terms and definitions.

Quality definitions and term specification includes the following:

- consistent structure of terms, synonyms, and acronyms to support lookup;
- representation of definitions in a manner which is clear and fulfills the purpose of a definition;
- consistent provision and structure of metadata to explain further, provide examples and links to standards documents and standards processes to support maintenance of terms and definitions in an ongoing improvement environment.

The shared online tool of the Joint Initiative Council of Health Informatics Standards Development Organization's (JIC) which uses these metadata is the Standards Knowledge Management Tool Glossary (www.skmtglossary.org). The Standards Knowledge Management Tool (SKMT) is an Internet-based tool designed to assist in finding and managing standards documents, products, terms, and definitions. Each term and associated definition can be linked back to the document/s within which it is used (even if that link is simply to an organizations glossary). This Technical Specification provides metadata which supports the SKMT or any other similar functional need in the body of the document, while details of emerging procedures of the SKMT Governance Committee of the JIC are in [Annex A](#), [Annex B](#), and [Annex C](#).

Business Need

When a new standard is developed, the terms used in that standard are defined and explained. Over time, there have been an increasing number of terms used with a variety of definitions. There are single terms with multiple definitions and different terms with synonymous definitions. The rapid evolution of health informatics is demonstrated by the emergence of terms and increasing confusion over their meaning and use. There is a need to clearly define the terms and where these terms are used in a specific context. When there is a specific context to identify how that context represents a meaning which is different to the more general use of the term. This Technical Specification describes a consistent approach to term usage and structure and defines the mechanism for ongoing management.

The availability of a readily accessible tool to identify accepted definitions will make standards development an easier process and provide a resource to the health informatics community that will assist communication and understanding of the complex issues of health informatics. Such a tool will equally assist the ongoing management of the glossary and the standards in which the terms are used.

This Technical Specification

- provides a standardized metadata construct for the representation of glossary information for health informatics,
- provides procedural standards for the introduction and management of terms in health informatics standards publications in order to rationalize the use of these terms,
- supports a consistent approach to the use of terms and definitions in health informatics standards,
- reduces the effort required in standards development by providing a document available to all who develop terms and definitions for health informatics projects, and
- supports the development of international e-health initiatives through a consistent approach to development and use of terms and definitions.

This work stems from the following three needs:

- a) to improve communication and understanding within the international health informatics community, within and outside the standards environment. Consistent and clear use of terms and understanding of the definitions of these terms can significantly enhance the ability for health informatics programs around the world to deliver their required outcomes. Open availability of this information in a quick and simple manner can reduce confusion and encourage both the use of standards and the appropriate use of language within the community, thereby increasing re-usability and information sharing;
- b) to improve and simplify the standards development process by giving access to existing definitions, thereby encouraging harmonization (or the movement towards a single definition or the clear statement of the context within which a specific alternative definition applies). There is also a need to be able to identify the terms in a given document and to update them to agreed definitions over time;
- c) to enhance the standing of the standards community by providing clear guidance on terms to be used. This represents leadership of the community through provision of a public good, as well as a tool to assist their own operations.

Health informatics — Development of terms and definitions for health informatics glossaries

1 Scope

This Technical Specification provides details of the metadata and requirements for quality terms and definitions in health informatics for inclusion in health informatics glossaries.

This Technical Specification does not cover specification of terminological content in systems, such as that represented in terminological resources, such as SNOMED, CT, or, ICD. It is limited to terms and definitions included in standards documents.

This Technical Specification is applicable to the following groups:

- Health informatics standards developers and standards development organizations.

Standards developers and organizations are direct beneficiaries of this work as standardized representation of terms and definitions readily available through the SKMT can make standards development faster and more consistent. The metadata also support maintenance functions for review and update of standards publications.

- Developers, implementers, and managers of health information systems, clinical information systems, and clinical decision support systems.

This audience is a beneficiary of this work through more consistent terminology in standards documents, making them clearer and easier to implement.

- All users of health information systems, clinical data, such as health statisticians, researchers, public health agencies, health insurance providers, health risk organizations, data analysts, and data managers.

2 Normative References

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

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

ISO/IEC 2382-1:1993, *Information technology — Vocabulary — Part 1: Fundamental terms*

3 Terms and Definitions

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

NOTE Where there are terms used in this Technical Specification that are not defined in this section, they are considered to be generic to the English language and not specific to this Technical Specification. Additional definitions and terms can be found at the international health informatics Standards Knowledge Management Tool and Glossary website www.skmtglossary.org.

**3.1
abbreviation**

designation formed by omitting words or letters from a longer form and designating the same concept

[SOURCE: ISO 1087-1:2000]

EXAMPLE HL7 is an abbreviation of Health Level Seven.

Note 1 to entry: An abbreviation does not define the meaning of the word it replaces; it functions as a specific type of synonym.

**3.2
acronym**

abbreviation made up of the initial letters of the components of the full form of the designation or from syllables of the full form and pronounced syllabically

[SOURCE: ISO 1087-1:2000]

EXAMPLE UNICEF - United Nations Children's Fund

**3.3
concept**

unit of knowledge created by a unique combination of characteristics

[SOURCE: ISO 1087-1:2000]

Note 1 to entry: A concept can be represented using one or more terms, pictures, icons, or sounds.

Note 2 to entry: Informally, the term "concept" is often used when what is meant is "concept representation". However, this leads to confusion when precise meanings are required. Concepts arise out of human individual and social conceptualizations of the world around them. Concept representations are artefacts constructed of symbols. [SOURCE: ISO 17115].

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Note 3 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]

Note 4 to entry: For the purposes of health informatics glossaries, a term (in a given language and context) is considered to represent a concept uniquely and therefore, term and concept are synonymous in their intent. These words are not synonyms in a terminological resource context.

**3.4
context**

text which defines the use case, situation, or environment of a specific definition for a term

EXAMPLE Noun, verb, country (e.g. UK), area of healthcare (e.g. Pharmacy), or organization (e.g. HL7).

Note 1 to entry: This definition differs from ISO 1087-1:2000 as there is a business need in the environment of standards development organizations sharing health informatics glossary content to make context explicit and to move towards having a single definition for a term in a specified context.

**3.5
definition**

representation of a concept by a descriptive statement which services to differentiate it from related concepts

[SOURCE: ISO 1087-1:2000]

**3.6
designation**

representation of a concept by a sign which denotes it

[SOURCE: ISO 1087-1:2000]

3.7**synonym**

one or more words of the same language that have the same meaning in some or all senses

Note 1 to entry: A synonym replaces a word in a sentence and is of similar size to that word. It does not necessarily explain the meaning intended. A synonym is not a shortened form of the original word, such as an abbreviation.

Note 2 to entry: Taken from Webster's Dictionary, modified.

3.8**synonymy**

relation between or among terms in a given language representing the same concept

[SOURCE: ISO 1087-1:2000]

Note 1 to entry: Appendectomy and appendectomy.

Note 2 to entry: Terms which are interchangeable in all contexts are called synonyms; if they are interchangeable only in some contexts, they are called quasi-synonyms.

3.9**term entry**

linguistic representation of a concept being defined in the glossary

Note 1 to entry: In this Technical Specification, the word "term" is used to indicate term entry.

Note 2 to entry: A term can contain symbols and have variants, e.g. different forms of spelling.

3.10**term and definition harmonization**

activity leading to the establishment of a correspondence between two or more closely related or overlapping concepts

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Note 1 to entry: The purpose of concept harmonization is to improve communication. Concept harmonization occurs where a term has professional, technical, scientific, social, economic, linguistic, cultural, or other differences, in order to eliminate or reduce minor differences between them. (See ISO 860:2007.)

3.11**term family**

group of defined terms that are related in that each assists in the definition of other members of the group

EXAMPLE Health record, healthcare record, electronic health record. The health record could be considered the least specific, healthcare records relate not to health in any context, but to the care provided in relation to health and could be considered a synonym of medical record, while electronic health record implies a format or functionality of the health record. Once health record is defined, it is easier to define healthcare record and electronic health record, as it is not necessary to define the base from which the definition begins.

Note 1 to entry: Guidance is provided later in this Technical Specification on what terms are appropriate to a family. It is acknowledged that further testing of this process will be required through the implementation of this Technical Specification.

4 Principles, rules, and content**4.1 Overview**

A term can occur many times, each time with different identifying characteristics/metadata. These characteristics include: the definition of the term (4.3), the description of context in which that definition applies (4.4), the original source of the definition (4.5), examples and comments on the use of the term (4.6).

To support harmonization, definitions in health informatics glossaries should be linked to the documents in which they occur (4.8). Metadata requirements to support glossary maintenance include categories for the status of the definition (4.9) and rationale for modifications made (4.12).

No organization or standard “owns” a term. Definitions are linked to documents which are owned, or created by standards development organizations. In the SKMT Glossary tool, organizations can determine their definitions and create their own glossary by searching by organization for terms linked to their documents. The processes of the SKMT Glossary are not defined here, as they are provided in detail in the User Guide.

The process for harmonization of terms/definitions in each individual standards development organization is different. Procedures are currently in trail and administered by the SKMT Governance Committee of the Joint Initiative Council of the Health Informatics Standards Development Organizations.

4.2 Term entry

The term is the word or group of words being defined in the glossary. An organizational health informatics glossary should include an entry for any term that would normally be included in terms and definitions or glossary section/s of a document or product. More extensive explanations of the principles and processes for development of quality definitions are provided in ISO 704:2009. A summary of these requirements is provided in this Technical Specification. ISO/IEC 2382-1:1993 provides guidance on abbreviations, definitions, and representation, and though this relates more specifically to terminologies in general, these principles apply through this Technical Specification. This Technical Specification supports but does not override the requirements specified in ISO 10241-1:2011 but it does encourage consistency, which will support database application of term/definition content which is not a primary objective of this Technical Specification.

A term/definition cannot be recorded without a term. A term entry is therefore a required element and should include any term that would normally be included in a terms and definitions or glossary section of a document or product.

A term is mandatory and should be

- a word or group of words,
- written in full,
- singular,
- in sentence case (leading capital then lower case throughout), and
- positive rather than negative, though negative concepts may be included if essential to clear meaning.

For example,

- Policy - not policies, and
- Electronic health record – not EHR.

Reference: ISO 11179-4

An entry of the name of an organization shall be written in full and the definition shall be a description of that organization, while the abbreviation or acronym of the organization should be listed as a synonym of the full name.

Terms can be defined in different languages. Where required, alternative forms of English can be indicated as specific languages (e.g. US English is not the same as English).

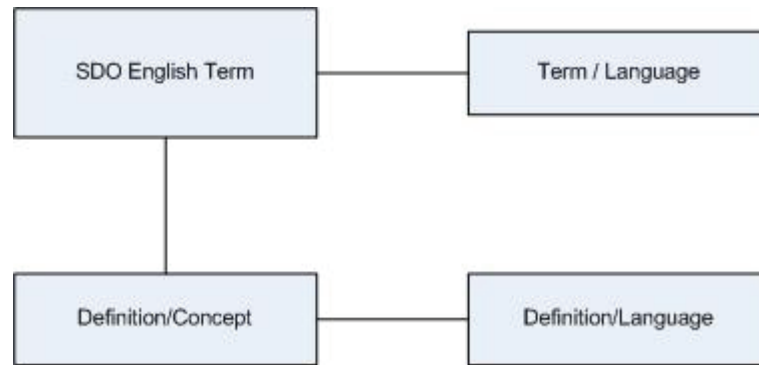


Figure 1 — The relationship between the “core term” and terms/definitions in other languages.

The term is the preferred term in the language being used. Synonyms, related terms, and abbreviates can also be included but are not the “core” term.

4.3 Term definition

Each term entry may have many definitions, but there should be just one definition for a term in any given context. The definition is a textual description of the meaning of the term. Images may be included to more clearly describe what is intended.

Where a term is to be defined, this shall be done in consideration of not only this term but other terms to which this term relates (other terms in the family of terms). For example, do not define electronic health record alone. To accurately define this concept, it is necessary to understand the “family” to which it belongs. The electronic health record family of terms could include health record, healthcare record, medical record, and personal health record. The “term family” should be defined as a group rather than individually, as the understanding and consistent definition of the whole significantly improves the understanding and utility of the individual members of the family.

The definition shall (extracted and summaries from ISO 704:2009)

- a) Establish difference between existing concepts.

For example, what is the difference between terminological system and code system or classification system? The logical difference is that a code system is not necessarily human readable, i.e. a code system does not have to contain terms, while a classification is a terminological system but has additional characteristics for specific purposes in healthcare. These additional differentiating elements should be included and clear in the definition.

- b) The definition shall define the concept, while the Usage Comment should give examples, and describe in more detail what is meant. Definitions shall not include long rambling examples or inclusions. Inclusion of examples and comments will make harmonization more difficult
- c) Not include the term or its synonym/s or abbreviations or other forms (noun instead of verb) in the definition
- d) Use dictionary style. Phrases such as “Word means” or “This describes a situation” in which definition development can begin with full sentences or explanations, but these additional words shall be edited out of your final definition.
- e) Use correct grammar. For example, write the definition to match the part of speech. If the term is a verb, the definition will probably begin with “to” while nouns are likely to begin with “a” or “the”.
- f) Use simple language. For example, “use” rather than “utilize”. Also consider where there is a highly complex definition used by a specialist area of the community, this should be given the context – Formal (as in formal definition), while the simple, plain language version of the definition should be the one used as the “core definition”, the one used across all contexts not declared.