



# Guidelines for Management of Translation of SNOMED CT®

Date 20100326  
Version 2.0

## Document Properties

<b>Filename:</b>	IHTSDO_Guidelines_Management Translation SCT_v2.0_20100326
<b>Title:</b>	Guidelines for Management of Translation of SNOMED CT®
<b>Subject:</b>	IHTSDO, Management of Translation of SNOMED CT®, Guidelines

## Amendment History

Version	Date	Editor	Comments
0.01	20080328	Ulla Gerdin	First draft
0.02 – 1.2	20080401-20091008	Contributing authors: Ulla Gerdin, Knut Bernstein, Anna Staerner Steen, Torben Rügge, Annika Sonne Hansen, Jane Howarth, Palle Gerry Petersen, Alejandro Lopez, Nicolette de Keizer, Karin Ahlzén	Re drafting
1.3	20091008	Annika Sonne Hansen, Palle Gerry Petersen, Alejandro Lopez, Nicolette de Keizer, Karin Ahlzén	Review based on comments from the QAC and the Translation PG
1.4	20100107	Karin Ahlzén	Review based on comments from the QAC. Final document for review by Members Forum and Affiliate Forum.
1.5	20100201	Karin Ahlzén	Review based on comments from the Members Forum.
1.6	20100324	Karin Ahlzén	Review based on comments from the Committees.
2.0	20100326	Karin Ahlzén	Minor updates following QA

## Review Timetable

Review date	Responsible owner	Comments
20120401	Translation SIG	To include feedback



© International Health Terminology Standards Development Organisation 2010. All rights reserved.

SNOMED CT® was originally created by the College of American Pathologists.

This document forms part of the International Release of SNOMED CT® distributed by the International Health Terminology Standards Development Organisation (IHTSDO), and is subject to the IHTSDO's SNOMED CT® Affiliate Licence. Details of the SNOMED CT® Affiliate Licence may be found at <http://www.ihtsdo.org/our-standards/licensing/>.

No part of this document may be reproduced or transmitted in any form or by any means, or stored in any kind of retrieval system, except by an Affiliate of the IHTSDO in accordance with the SNOMED CT® Affiliate Licence. Any modification of this document (including without limitation the removal or modification of this notice) is prohibited without the express written permission of the IHTSDO.

Any copy of this document that is not obtained directly from the IHTSDO [or a Member of the IHTSDO] is not controlled by the IHTSDO, and may have been modified and may be out of date. Any recipient of this document who has received it by other means is encouraged to obtain a copy directly from the IHTSDO [or a Member of the IHTSDO]. Details of the Members of the IHTSDO may be found at <http://www.ihtsdo.org/members/>.

# Table of Contents

1 Introduction.....	6
1.1 Status of this document.....	6
1.2 The purpose of these guidelines.....	6
1.2.1 The question of translation method.....	7
1.2.2 Out of scope.....	7
1.3 Target group.....	7
1.4 Reading guidelines.....	7
2 Planning issues.....	8
2.1 The challenge.....	8
2.1.1 Key considerations for the project manager.....	8
2.2 Establishing the organization.....	9
2.2.1 Establishing a team of specialists.....	9
2.2.2 Establishing the translation process.....	9
2.2.3 Call for tender and contract issues for translation service provider.....	9
2.2.4 Establishing the Editorial Board.....	9
2.3 Establishing an underlying supportive technical infrastructure.....	10
2.3.1 Call for tender for IT tools.....	<b>Fejl! Bogmærke er ikke defineret.</b>
2.4 Establishing linguistic guidelines.....	10
2.5 Identifying quality indicators.....	10
2.6 International cooperation.....	11
2.6.1 Quality of the International Release of SNOMED CT®.....	11
2.7 Education and training of team members.....	11
2.8 Risk management.....	11
3 Translation preparation.....	13
3.1 Translation subset selection.....	13
4 The translation process.....	14
4.1 Translation.....	15
4.2 Translation review.....	15
4.3 Editing.....	15
4.4 Progress monitoring and follow-up.....	15
5 Post-translation issues.....	17
5.1 Validation of the translation in clinical and social care settings.....	17
5.2 Maintenance of linguistic guidelines.....	17
5.3 Maintenance with regard to translation of updated versions of SNOMED CT®.....	18
5.4 Post-editing.....	18
5.5 Translation of national concepts into SNOMED CT®-English.....	18

6 Glossary of terms .....	19
7 Supporting documents .....	20
7.1 IHTSDO documents .....	20
7.2 National documents .....	20
7.3 ISO/CEN standards.....	20

# 1 Introduction

SNOMED Clinical Terms® (SNOMED CT® – Systematized Nomenclature of Medicine Clinical Terms) is a comprehensive healthcare terminology which provides the core general terminology for the electronic health record (EHR). With more than 311,000 active concepts with unique meanings and formal logic-based definitions organized into hierarchies, the terminology is used to code, retrieve, and analyze health data. When implemented in software applications, SNOMED CT® can be used to represent clinically relevant information consistently, reliably and comprehensively as an integral part of producing electronic health records. Information systems can use the concepts, hierarchies and relationships as a common reference point. The terminology can also facilitate functions such as decision support, statistical reporting, outcomes measurement, public health surveillance, health research, and cost analysis.

The global dissemination of SNOMED CT® increases the need to provide the terminology in many different languages. SNOMED CT® has a built-in framework to manage different languages and dialects. Today SNOMED CT® is available in US English, UK English and Spanish. Translations to several other languages are currently taking place.

The basic objective of any SNOMED CT® translation is to provide accurate representations of SNOMED CT® concepts in such a way that they are understandable, usable and safe: a principle of *concept based translation* must be born in mind. Because of the inevitably normative nature of a translated version of SNOMED CT®, defining a set of linguistic guidelines, including syntactical, morphological, and orthographic rules, is crucial.

Since SNOMED CT® is meant to be applied in numerous and various settings by users from the most heterogeneous backgrounds, realms and languages, the communicational aspect of concept definition becomes an issue of paramount importance. A qualitative translation of SNOMED CT® is a standardization of a country's special language for health and social care.

## 1.1 Status of this document

These guidelines constitute a part of the IHTSDO quality control system for content and are based upon experiences from countries that have translated or are translating SNOMED CT®.

The document is provided by the Translation Standard Processes Project Group.

## 1.2 The purpose of these guidelines

Within the scope of translation of SNOMED CT®, these guidelines comprise recommendations regarding management of a translation project. New Members of IHTSDO will be able to find advice

and documented experience to support their translation efforts. The purpose is also to help avoid mistakes and enable building on existing experiences.

The guidelines identify critical steps of the translation project and bring forward best practices both from a qualitative and a cost effective perspective. The guidelines are not prescriptive regarding the detailed sequence of the steps in the translation process, since some steps are dependent on how the project is organized locally.

### **1.2.1 The question of translation method**

The management of back translation is not part of these guidelines. None of the IHTSDO Members has chosen back translation as method for quality control. The process described later on in this document provides a quality review by translators as well as by clinicians. A third level of quality control is described in 5.1, validation of the translation in clinical and social care settings.

### **1.2.2 Out of scope**

These guidelines do not include project management in general.

This document does not include linguistic guidelines for the translation itself – guidelines can be found in a separate IHTSDO document [1].

## **1.3 Target group**

The primary target group of this document comprises the translation project owner (the Members of IHTSDO), directors of health and social care and project managers in charge of translating SNOMED CT®.

## **1.4 Reading guidelines**

Key activities and actors in the translation process per se are described in section 4. This is distinguished from the project planning activities (described in section 2), the translation preparation (described in section 3), and the post translation activities (described in section 5).

A brief list of terms and definitions specific for this document can be found in section 6, and a reference list in section 7.

## 2 Planning issues

### 2.1 The challenge

The translation of SNOMED CT® must at the same time be faithful to terminological and linguistic principles and be able to produce national terminologies useful for clinicians in their daily work. An experienced terminology consultant puts it this way:

“The basic approach of the translation project is pragmatic-functionalist: the aim of the project, i.e. establishing a terminology functioning as a background system for the electronic health record, is constantly kept in mind, and an effort is made to provide terms which reflect the underlying concepts and are understandable and psychologically acceptable to the clinician.

The overall approach has been one of close collaboration between specialists within medicine and/or informatics, and linguists/terminologists. As pointed out by numerous professionals and terminologists, interdisciplinary collaboration is crucial in terminology work (Infoterm 2005). On the one hand, a translation based solely on linguistic, morphological-syntactical analysis might result in a seemingly correct term which would not after all represent the concept in question, or which would not be used by professionals. On the other hand, for pedagogical (and normative) reasons, a certain compliance with linguistic, systematic, and orthographic principles is necessary in order to avoid confusion and ensure practical applicability of the terminology. In practice, this means that a set of basic principles to secure consistency are followed, but in case of serious conflicts with daily clinical language the clinical use prevails.” [2]

#### 2.1.1 Key considerations for the project manager

In the initial phase of the translation project, a number of vital decisions have to be made. Based on experiences from previous projects, the following major questions have to be considered:

- who has solid theoretical knowledge of SNOMED CT®?
- who should take responsibility for the actual translation work, from source language to target language?
- which types of IT tools are needed to support translation and process administration?
- which access rights are needed to data during the translation process?
- who should write the linguistic guidelines?
- what type of education and training is needed – to whom and when?
- what should be the selection strategy for the sequence of subsets that are to be translated?
- how should the translation process be organized to guarantee the quality of the translation products?

In the sections below, these questions will be addressed.



## 2.2 Establishing the organization

### 2.2.1 Establishing a team of specialists

A number of specialists must be engaged to run the different parts of the process. The following competencies/experiences have been identified:

- health and social care professionals
- medical translators, e.g.:
  - translators of brochures in the medical area
  - translators of research papers
  - interpreters
- terminologists
- knowledge of present use of health and social care terminology, classification and health informatics
- knowledge of semantics and concept based translation
- knowledge of the structure and content of SNOMED CT®.

### 2.2.2 Establishing the translation process

The translation can be done in-house or by an external translation service provider. In both cases it is important to specify prerequisites and expectations on the process and products. Below follow examples from such specifications based on experience from previous projects.

- emphasis on the concept based translation
- assurance of delivery on time
- contracts with the translators
- an agreed number of translated concepts per given time
- maximum allowed error rate
- maximum allowed number of concepts submitted to the editorial board
- use of subject matter experts
- agreement on the point of time when a concept has concluded its translation
- agreement on which translation tools should be used.

Please also see section 2.8 Risk management.

### 2.2.3 Call for tender and contract issues for translation service provider

Based on the specification of the translation process and products, a procurement process should be initiated and a contract made with the translation service provider. Since such call for tenders and contracts are dependent on national legislation, they are not described further in these guidelines.

### 2.2.4 Establishing the Editorial Board

Parts of the translation project need to be coordinated by an editorial board. The board's major tasks are to support the translation process (see further section 4), manage the linguistic guidelines, continuously take decisions on linguistic principles and follow up on translation quality.

The editorial board should be interdisciplinary and be comprised of professionals with educational and empirical backgrounds within areas like health and social care terminologies, linguistics and terminology, health informatics and a knowledge and understanding of the International Release of SNOMED CT®.

## 2.3 Establishing an underlying supportive technical infrastructure

The translation process and its administration need IT tools with high and reliable performance. The tools must be able to:

- distribute the overall concept system
- be a base for terminological services
- support the translation process and its team members in every step of the process
- control access to the information being processed
- produce statistics from ongoing and finished processes
- show the current status of each individual concept's 'life cycle' throughout the entire translation process
- show the level of activity for all project participants.

## 2.4 Establishing linguistic guidelines

The target language version of SNOMED CT® should reflect the national linguistic rules, and health and social care staff should recognize the preferred terms from their daily activities. Well maintained linguistic guidelines are the prerequisite for a high quality translation, and the use of linguistic guidelines are therefore prescriptive for everyone in the translation process. The first version of the linguistic guidelines should be ready well in time for the first education session for translators, reviewers and editors. The framework and the content of the linguistic guidelines are described in the Guidelines for translation of SNOMED CT® [1].

## 2.5 Identifying quality indicators

The effort of creating the quality indicators based on the IHTSDO Quality Assurance Framework will be undertaken by the IHTSDO Translation Quality Assessment Project Group (TQAPG), and not in this Guideline. The TQAPG has been established to define quality indicators of structure, process and outcome. Examples of expected quality indicators are:

- the number of approved translated concepts
- the number of unresolved problem concepts sent to the editorial board
- the number of errors made by the translation service provider
- health and social care professionals can find the concepts they need and agree that the preferred term reflects the intended concept.
- information exchange with other health and social care organizations can take place without loss of conceptual content. This is valid for both national and international information exchange.
- compliance between the translation and the linguistic guidelines.

- consistency between translation and language corpora and concordances of respected medical journals and other possible sources.

## 2.6 International cooperation

### 2.6.1 Quality of the International Release of SNOMED CT®

It is known that errors and inconsistencies do occur in the International Release of SNOMED CT® on the system level as well as on the term level. Participants in the translation process will undoubtedly identify a number of these.

The translation project should provide a mechanism to document these errors or inconsistencies during the translation process and to clarify the methods and tools for reporting back to the IHTSDO. The IHTSDO request submission system should be used for reporting. These guidelines recommend the use of the template for request submission to report on inconsistencies in the International Release of SNOMED CT®.

## 2.7 Education and training of team members

The translation team members will need education and training regarding the structure and content of SNOMED CT®, the translation process and the documents and tools supporting it. The following examples of areas of education and training are based on previous project experiences from Denmark and Sweden:

- SNOMED CT® overview – an introduction to SNOMED CT® should be provided for everyone involved in the translation process.
- subset administration training – this training should be given to selected members of the team involved in how to plan, identify and administer the selection of subsets of SNOMED CT® that are going to be translated.
- education in linguistic guidelines and training in how to use them – this should be provided for translators, reviewers and editors.
- translation tools training – depending on roles and responsibilities all translation team members need specifically focused training in how to use the supporting translation tools.

## 2.8 Risk management

It is essential to introduce methods and routines for progress monitoring and quality control at the project initiation. Indicators should be defined and shared within the project in order to monitor progress and quality. Risk factors should be managed, and the indicators should be able to reflect project status within high-risk areas. Based on previous project experiences, the following examples of important risk factors which could lead to deficient or insufficient implementation or quality of the translation project have been identified:

- insufficient financing to undertake the project as outlined in plans
- deficient contracts between the translation service provider and the owner of the translation process

- failure of the translation agency to deliver
- insufficient translation with respect to the country's special language
- insufficient organization of the review process
- deficient quality assurance of translations
- insufficient IT tools to support translation and validation
- insufficient training in use of tools
- insufficient professional and clinical knowledge available
- insufficient training in the conceptual principles for translation
- insufficient project management
- ambiguities and defects in the source language
- source language terms with only relevance for certain countries.

## 3 Translation preparation

The planning issues described in section 2 are common for the entire translation project. However, for practical reasons all concepts cannot be translated simultaneously. The translation preparation therefore includes the selection of subsets.

### 3.1 Translation subset selection

The main aim for subset selection is to provide translators and reviewers with the best possible prerequisites for their work. The translator might for example want to work with concepts within the same subject field, e.g. heart conditions including body structures, disorders and procedures.

The choice of order of areas to be translated can be vital for other parts of the process of introducing SNOMED CT® to health and social care. Different approaches for identifying the initial subsets can be chosen depending on local need. For example, one could give:

- priority to concepts which recur, link, qualify and confer meaning to other concepts in different contexts, e.g. body structures and qualifier values
- priority to concepts which are to be part of pilot projects in a given health or social care context
- priority to concepts which are to be part of a specific research project.

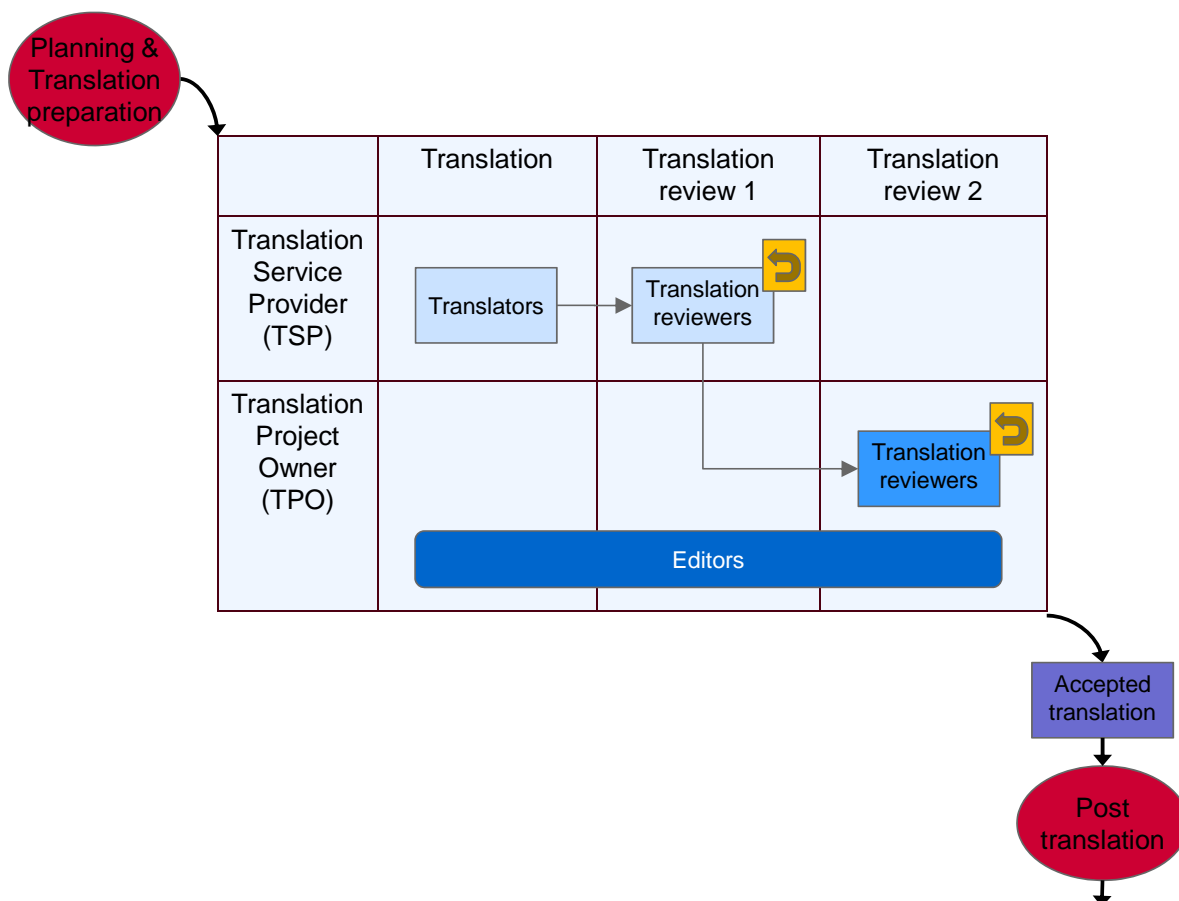
Selection of subsets is preferably managed by a team including specialists in health and social care, terminologists and experts on SNOMED CT®.

## 4 The translation process

The translation process per se is distinguished from the planning activities (section 2), the translation preparation (section 3), and the post translation activities (section 5).

These guidelines identify two major parties involved in the translation process: the translation project owner and the translation service provider. Furthermore, three major steps in the translation process are identified (Figure 1):

- translation
- translation review by the translation service provider (review 1)
- translation review by the translation project owner (review 2).



**Figure 1 - overview of the translation process and the parties involved**

The aim of the translation process is to provide a high-quality translation, even in the narrowest specialist fields. The three steps are found crucial to achieve the anticipated quality of the translation – particularly the two-step review process. The steps are depicted in the figure above and described in

the sections below. Details on the linguistic steps in the translation process can be found in “Guidelines for Translation of SNOMED CT®” [1].

## 4.1 Translation

Ideally, the translation should be carried out by professional translators with a health or social care background and/or health or social care personnel with a professional linguistic background. However, it may be difficult to find a sufficient number of people possessing all these qualifications.

Alternative models could include having the translation carried out either by authorized translators who have current access to consultants with a health or social care background (i.e. subject matter experts), or health and social care professionals who have been specially trained for the task and who may turn to professional translators for advice.

## 4.2 Translation review

Experience from existing translation projects indicates that a two-step review improves the quality of the translation. The first review is a kind of internal quality check performed by the translation service provider. The second review is an external review arranged by the translation project owner.

The competencies of the reviewers may vary, but they are often professional translators or health or social care professionals. All translated terms should at some point be reviewed by a health or social care professional who has been introduced to the structure of SNOMED CT® as well as to the rules of the linguistic guidelines applied in the target language. Ideally there should be a possibility for reviewers to address questions to subject matter experts.

The overall purpose of the reviews is to make sure that the preferred term reflects the underlying concept of the source language, that the term is relevant to the health and social care domain, and that the translation complies with the established linguistic guidelines of the target language.

The reviewers should also identify matters of principle to be presented for the editorial board.

## 4.3 Editing

Whatever the details of the translation workflow, an editorial board (or similar expert group) should play a part in the overall process and workflow. The editorial board should be interdisciplinary.

The board’s major task is to issue and maintain the linguistic guidelines and to resolve “difficult cases” and matters of principle based on the linguistic guidelines. The editorial board is responsible for the translation quality and issues the “accepted” terms. This means that the editorial board should check if the linguistic guidelines actually have been followed, and – if not – implement the corrections.

## 4.4 Progress monitoring and follow-up

The following issues related to the translation process should be monitored and considered:

- adjustment of the linguistic guidelines
- adjustment of the resources in the translation processes in order to continuously optimize the process
- workflow statistics
- correction of translations that do not comply with the linguistic guidelines.

The following issues of project progress should be monitored:

- follow-up on quantity, e.g. the number of approved translated concepts, the number of unresolved problem concepts sent to the editorial board, the number of errors made by the translators
- follow-up on quality, e.g. how well the translation complies with the linguistic guidelines, how well the translation complies with language corpora and concordances of respected medical journals and other relevant sources
- follow-up on costs
- follow-up on deviations from goals
- follow-up on translation service provider issues
- follow-up on performance of IT tools.



## 5 Post-translation issues

This section is describing important activities that will take place after the translation has been approved by the project owner. Many of these activities will take place in relation to a release of the terminology – either an international or a national release. This section does not include practical or technical issues related to the release itself or distribution of the terminology.

### 5.1 Validation of the translation in clinical and social care settings

After the translation, it is important that the terminology is validated by health and care providers to ensure that the translation is useful in clinical and social care settings.

Results of this “clinical validation” may be:

- a concept is considered useful in the clinical context and the preferred term is considered adequate
- synonyms are proposed
- a change to the preferred term is proposed
- a new concept is proposed
- a concept is not used in practice or should not be used.

Verification can take place in different ways; e.g. as a workshop with health and social care professionals working together on a selected subset of SNOMED CT®, professionals working separately using collaborative IT tools etc. The main purposes of the validation process are to:

- check translation against documentation, guidelines, running systems – possibly with a multidisciplinary focus
- check translation against language corpora, i.e. medical journals – possibly with (semi)automatic validation
- check translation against attribute names and values in information models, i.e. archetypes
- establish on-going feedback from clinical practice with the addition of synonyms.

### 5.2 Maintenance of linguistic guidelines

As mentioned in section 4, the linguistic guidelines must be applied and should be maintained during the translation process. However, the use and implementation of the terminology may provide new insight that requires additional updates of the linguistic guidelines. As a part of the post-translation process there is a need for:

- maintenance of the linguistic guidelines
- extension of the editorial board assignment to handle the maintenance (or assignment of the task to a maintenance organization).

## 5.3 Maintenance with regard to translation of updated versions of SNOMED CT®

New international versions of SNOMED CT® are released two times year. The National Release Centre has 14 weeks to prepare a national release. For each new version of SNOMED CT® it is necessary to:

- translate preferred terms for new concepts
- handle revision of concepts or re-activation of concepts
- assess if changes in SNOMED CT® require changes in existing (national) subsets.

## 5.4 Post-editing

After the translation has been approved by the project owner there might still be a need for editing previously translated preferred terms. The translation of concepts in subsequent, newer releases of SNOMED CT® and the ongoing updates of the linguistic guidelines may have an impact on older translations. Post-editing issues should be managed by an editorial board, as described in 4.3.

## 5.5 Translation of national concepts into SNOMED CT®-English

The clinical validation and the use of SNOMED CT® are likely to result in proposals for national concepts and synonyms to be part of the International Release or national extensions. A feed-back to IHTSDO should be established for these concepts and terms to be considered for inclusion in the International Release.

Work includes:

- identification of new concepts to SNOMED CT®
- identification of terms/synonyms
- local modelling, i.e. adding relations to the concepts.

## 6 Glossary of terms

Term	Description	Source
concept	a clinical idea to which a unique numeric identifier (ConceptID) has been assigned in SNOMED CT®  (ISO 1087-1:2000) unit of knowledge created by a unique combination of characteristics	SNOMED CT® User Guide, July 2009
definition	representation of a concept by a descriptive statement which serve to differentiate it from related concepts	ISO 1087-1:2000
description	the human-readable phrases or names associated with SNOMED CT® concepts	SNOMED CT® User Guide, July 2009
linguistic guidelines	set of rules of grammar or terminology to be observed for the type of concept in question	
realm	A sphere of authority, expertise, or preference that influences the range of Components required, or the frequency with which they are used. A Realm may be a nation, an organization, a professional discipline, a specialty, or an individual user.	SNOMED CT® User Guide, July 2009
relationship	an association between two concepts	SNOMED CT® User Guide, July 2009
review	examine a target text for its suitability for the agreed purpose and respect for the conventions of the domain to which it belongs and recommend corrective measures	CEN EN 15038
revise	examine a translation for its suitability for the agreed purpose, compare the source and target texts and recommend corrective measures	CEN EN 15038
source language	language in which the source text is written	CEN EN 15038
target language	language into which the source text is rendered	CEN EN 15038
term	designation of a general concept in a specific subject field	ISO 1087-1:2000
translate	render information in the source language into the target language in written form	CEN EN 15038
translation service provider (TSP)	person or organization supplying translation services	CEN EN 15038

## 7 Supporting documents

### 7.1 IHTSDO documents

[1] **Guidelines for Translation of SNOMED CT®**, version 1.00, published 20090501, IHTSDO. (It should be noted that an updated version is due for release May 2010)

### 7.2 National documents

[2] **Coming to terms with SNOMED CT® terms**: linguistic and terminological issues related to the translation into Danish; Asta Høy, Authorized Translator, PhD, Consultant of the National Board of Health.

**Principles in connection with the translation of SNOMED CT® terms**; compiled by Asta Høy, MA in Translation and Interpretation, PhD, consultant to the Danish National Board of Health, February 2007.

**SNOMED CT® Translator's handbook** Concept Designation and Vocabulary Maintenance Guide, © [2007](#) Conceptum Medical Terminology Center, Vuelta de Obligado 2596 5<sup>a</sup>, (1428) Buenos Aires, Argentina [www.conceptum.org](http://www.conceptum.org)

**Translation of SNOMED CT® to Swedish**, [2008](#),

### 7.3 ISO/CEN standards

ISO 704:2000 Terminology work – Principles and methods

ISO 860:1996 Terminology work – Harmonization of concepts and terms

ISO 1087-1:2000 Terminology work – Vocabulary – Part 1: Theory and application

ISO 10 241:1993 International terminology standards – Preparation and layout

ISO/FDIS 15188:2001 Project management guidelines for terminology standardization

CEN EN 15038 Translation service–Service requirements