TECHNICAL SPECIFICATION

ISO/TS 16843-1

First edition
2016-11-15

Health informatics — Categorial structures for representation of acupuncture —

Part 1: Acupuncture points

Informatique de santé — Structures catégoriques pour la représentation de l'acupuncture —

Partie 1: Points d'acupuncture

Reference number
ISO/TS 16843-1:2016(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

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 Technical Committee ISO/TC 215, *Health informatics*.

A list of all parts in the ISO 16843 series can be found on the ISO website.

Introduction

Acupuncture therapy originated from scrubbing or pressing sensitive areas on the body surface. Wood stick or stone was primarily used as a stimulation tool, then, in the course of improvement, needling was gradually developed. Today, those points or zones are used not only in acupuncture practices but also in other kinds of intervention such as acupressure, moxibustion, cupping, or classic massage. New acupuncture points, such as auricular points and oral acupuncture points, have also been discovered in diverse practice of acupuncture.

The practice of traditional medicine is still the subject of scientific criticism. However, it is well known that there is a certain amount of contemporary scientific papers or reports on the interventions using acupuncture points showing considerable therapeutic effects.

Thus in the last two decades, many clinical trials have been conducted to prove efficacy,[10][11] and a large number of research projects on the mechanism of acupuncture have been undertaken using modern scientific methodology. Among various medical domains and countries/regions, there can be found a lot of synonyms and polysemes[3][4][5] impeding meta-analysis, accurate information exchange, data processing and knowledge acquisition related to the principles and practice of acupuncture.

In order to solve these problems, it is essential to prepare definite concept system[2][3][4][5] for the representation of acupuncture points, with concept harmonization.[2] The resultant categorial structure will support the development of reliable terminological systems, information models and/or mapping among terminological resources.

It is notable that even in the countries with high GDP, only a small portion of the population can receive modern medicine service at will. Also, the WHO Western Pacific Regional Office reports that a high percentage of the population uses traditional medicine in the nations within the region.[23] These are the reasons why the WHO is trying to explore ways of collecting statistical data not only depending on modern medicine concepts but also the concepts of traditional medicines.

As expected, the accuracy of statistics is dependent upon consistent and agreed terms and definitions harmonized with the backbone of a concept system.[1][2][3][4][5]

For these two reasons, there is a strong need for common conceptual model regarding acupuncture points.

There are many different medical domains such as modern medicine, traditional Chinese medicine, Ayurveda and Thai medicine, and their concept systems also vary. If the concepts of each medical domain are represented in different conceptual models, it will be difficult to find the common elements among them. It means **mapping** or **semantic correspondence** among terminological resources will be costly and potentially error prone. In turn, such situation causes obstruction of knowledge management and acquisition.

It has been estimated that between 0,5 and 45 million concepts are needed to be adequately described[5] in acupuncture. There is no intention to specify conceptual models for each as international standards. Instead, the concepts with similarities have been harmonized at a high level in this document.[1][2][3][4][5]

With a categorial structure, the minimum elements for common descriptiveness, exchangeability, accountability, reproducibility, and verification necessary for representation of acupuncture points of various medical domains are defined.

Any specific characteristics needed in a specific medical domain should be specified in the projects of other technical committees and domestic or international organizations, along with their specific values or code systems.

Health informatics — Categorial structures for representation of acupuncture —

Part 1: Acupuncture points

1 Scope

This document specifies the **categorial structure** within the **subject field** of acupuncture by defining a set of **domain constraints** of **sanctioned characteristics** each composed of a **semantic link** and an applicable **characterizing category** in order to represent the **concept** of acupuncture point.

This document describes **sanctioned characteristics** with **semantic links** and **characterizing categories** for representation of acupuncture points. **Concepts** of acupuncture points are used in clinical practices for applying stimulation such as insertion, pricking, scratching, scrubbing, massaging or pressing with various kinds of needles, moxibustion, acupressure and cupping in various medical domains.

The potential uses for this conceptual framework are the following:

— provide a conceptual framework for the generation of **compositional concept representation** of acupuncture point;

— provide a core model to describe the structure of acupuncture point, and facilitate improved **semantic correspondence** with information models;

— facilitate the **mapping** and **semantic correspondence** between different terminological resources by proposing with a core specification of acupuncture point;

— support developers of new terminological systems concerning acupuncture point;

— support developers of new detailed content areas of existing terminological resources concerning acupuncture point to ensure conformance;

— facilitate the representation of acupuncture point in a manner suitable for computer processing;

— provide the monitoring system for adverse events and adverse reactions;

— provide the characterization of clinical research related to acupuncture point.

The target groups for this document are the following:

— developers of terminology systems acupuncture point;

— developers of information systems that require a structured framework of concepts to facilitate implementation and communication;

— informaticians, analysts and epidemiologists who require common models of knowledge to facilitate analysis of current and legacy data from one or more information systems;

— clinicians and coders to provide greater consistency in structure and organization when entering and retrieving data using one or more terminological resources;

— managers and administrative personnel in providing a benchmark by which to judge terminology and information system solutions: as to whether the potential options will deliver compatibility with legacy data and future proofing to emerging terminology products.

Topics considered outside the scope of this document include an exhaustive list of all possible **characterizing concepts** that could be used to describe acupuncture points.

2 Normative references

There are no normative references in this document.

3 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 Additional background terms and definitions from ISO 17115, ISO 1087-1 and ISO 16278 are provided in Annex A, Annex B and Annex C, respectively.

3.1
stimulus
stimuli
something that can elicit or evoke a physiological and/or psychological response(s) in a living thing

EXAMPLE 1 Mechanical, thermal and optical stimuli such as stroke, scrub, press, prick, pinch, strike; warm, heat, cool, ice, flushing.

EXAMPLE 2 Smell, taste, sound, light, vestibular sense, and somatic sense (touch, pressure, pain, and temperature).

Note 1 to entry: Included under the threshold to be recognized.

Note 2 to entry: Can be “noxious” or “invasive”.

3.2
stimulation
application of a *stimulus/stimuli* (3.1) to a targeted *acupuncture point* (3.7) with the intention of medical diagnosis or care

3.3
stimulating tool
medical device or part(s) of the human body of a practitioner used to apply *stimulus* (3.1)

Note 1 to entry: Usually determines modality of sensation.

Note 2 to entry: Some *values* (3.30) for a stimulating tool are described, but not limited to, References [21] to [23].

3.4
acupuncture
acupuncture therapy
remedial procedure of somatic stimulation to *acupuncture point* (3.7)

EXAMPLE 1 A round-pointed needle is used for massaging;a spoon needle is used for pressing.

EXAMPLE 2 Pricking, scratching, scrubbing/massaging, or pressing on a particular area of the body surface with a needle is also called acupuncture.

3.5
acupuncture needle
needle used for *acupuncture* (3.4); as *stimulating tool* (3.3)

EXAMPLE The nine types of classical needles (filiform needle, shear needle, round-pointed needle, spoon needle, lance needle, round-sharp needle, stiletto needle, long needle and big needle), stone needle, round-pointed wood stick.

3.6
anatomical zone
anatomical entity characterized by specific features and/or uses

EXAMPLE 1 Location of the *Hégǔ* (合谷) is the anatomical zone "on the dorsum of the hand, between the first and second metacarpal bones, in the middle of the second metacarpal bone on the radial side" and is palpated with a *detecting technique* (3.12) with the findings such as concavity, tenderness and so on.

EXAMPLE 2 In Nogier's Auricular acupuncture treatment, location of the ovary and testicular points is "slightly above the supratragic notch, on the inside of the ascending helix."[15]

EXAMPLE 3 Location of the Y-point of the large intestine is the anatomical zone "in the angle formed by the temple hairline and the upper edge of the zygomatic arch."[15]

EXAMPLE 4 When an anatomical zone of tenderness is found on the back through palpitating with *detecting technique* (3.12), if it is not a *named point* (3.8), it is an *anonymous point* (3.9).

Note 1 to entry: Not only sensory organ but also other material physical anatomical entity can be an anatomical zone.

Note 2 to entry: This term is only applied to traditional medicine.

3.7
acupuncture point
anatomical zone (3.6) to which *stimulus* (3.1) is applied with the intention to induce reaction(s) for diagnosis or therapy

EXAMPLE When the location of *Hégǔ* (合谷) is palpated with the finding of concavity, heat stimuli is applied to the surface of the point as acupuncture point.

Note 1 to entry: The acupuncture point is often restricted to be applied only with appropriate *stimulation* (3.2) because of its characteristics.

[SOURCE: ISO 16278:2016]

3.8
named point
named acupuncture point
acupuncture point (3.7) that has a designation or *designation to point* (3.19)

3.9
anonymous point
anonymous acupuncture point
acupuncture point (3.7) that has no designation for it

3.10
anatomical landmark
anatomical landmark for acupuncture
reference location on the body surface used to identify an *acupuncture point* (3.7)

EXAMPLE 1 In auricular acupuncture treatment, anthelix, tragus are often used as anatomical landmark.

EXAMPLE 2 In oral acupuncture treatment, each tooth is used as anatomical landmark.

3.11
measuring system
measuring system for acupuncture
traditional measuring method for somatometry in *acupuncture* (3.4)

EXAMPLE 1 In traditional "Chinese medicine", proportional bone (skeletal) cun, finger cun, and finger breadth.

EXAMPLE 2 In Ayurveda, anguli, or anguli parimana.

3.12
detecting technique
anatomical zone detecting technique
the technique to find an *anatomical zone* (3.6) point which is appropriate for applying *stimulation* (3.2)

EXAMPLE Inspection, palpation, and electric conductivity test.

3.13
related anatomy
anatomical structure near an *acupuncture point* (3.7)

Note 1 to entry: Related anatomy includes both *regional anatomy* (3.14) and *layered anatomy* (3.15).

3.14
regional anatomy
three-dimensional shape of an *anatomical structure* near an *acupuncture point* (3.7)

3.15
layered anatomy
anatomical structure from a certain body surface to stimulation site, with the *value* (3.30) of *spatial* dimension set to "0"

3.16
stereotactic restriction
specification of a body position and/or posture in order to permit an appropriate *approach* (3.17) for keeping away non-targeted material physical anatomical entities

3.17
approach
approach to acupuncture site
appropriate track of *stimulation* (3.2) to reach a stimulation site with *stereotactic restriction* (3.16)

Note 1 to entry: Approach is determined by *stereotactic restriction* (3.16), as well as by the direction and the lean of the *stimulating tool* (3.3) and by the depth of *stimulation* (3.2) for reaching a stimulation site.

3.18
medical domain
specific concept of a generic concept of various medical systems

Note 1 to entry: Modern medicine or biomedicine is also a type of medical domain.

EXAMPLE Modern medicine, Ayurveda, traditional African medicine, traditional Australian (Aboriginal), traditional Canadian, Chinese or traditional Chinese (TCM), traditional Japanese (Kampo), traditional Korean, Mongolian, New Zealand (Maori), Thailand, Tibetan, or Vietnamese, and so on.

3.19
designation of point
term and/or code that denote(s) acupuncture point concept

EXAMPLE 1 The deepest point in the concave of a foot sole is designated by both the term *Yǒngquán* (湧泉) and the code "KI 1" in a *terminological resource* (3.33) of the World Health Organization (WHO).[6] On the other hand, in marma therapy of Ayurveda, the same point/area is designated by the term *Talahridaya* (of foot).[22]

EXAMPLE 2 In Yamamoto New Scalp Acupuncture, the point ventral to the mastoid apex immediately behind the earlobe is designated by the code "G1".[15][24]

EXAMPLE 3 In Ayurveda, the centre of the palm of the hands is designated by the term *Talahridaya* (of hand).[22]

EXAMPLE 4 In Nogier's Auricular acupuncture treatment system, some of the points are named after corresponding organ such as ACTH.[15]

EXAMPLE 5 The point of *Shuǐgōu* (水溝) has an alternative location; different locations are used in Japan and China.

Note 1 to entry: Some points only have either term or code.

Note 2 to entry: In clinical practices, anonymous areas are often used for acupuncture therapy called *Ashi point*<TCM>(阿是穴).

Note 3 to entry: In order to avoid confusion arising from polysemy, the class of designation of point include *medical domain* (3.18) as attribute.

3.20
applicable therapy
applicable therapies for acupuncture points
therapies or types of intervention suitable for application to an *acupuncture point* (3.7)

EXAMPLE 1 Needling, moxibustion, acupressure, oil massage, aromatherapy; asana, meditation.

EXAMPLE 2 *Tàiyuān* (太淵) is applied with its applicable therapy of needling, moxibustion, and acupressure. *Wàihuáijiān* (外踝尖) is usually inhibited from insertion of needle.

Note 1 to entry: Applicable therapy or intervention varies according to *medical domains* (3.18) because of their different theories.

3.21
biomedical specifics
observed biomedical findings and/or driven response by a given *stimulation* (3.2) to a certain *acupuncture point* (3.7)

EXAMPLE Change in blood pressure, brain wave.

3.22
life force specifics
characteristics and features of a *life force* (3.23) at a certain point location

EXAMPLE Life force specifics are described as life force flow, its *channel* (3.24), connection to *life force flow* (3.25), *connection via life force flow* (3.26), *feature in force flow* (3.27) and *viscus and bowel* (3.28).

3.23
life force
basic element that constitutes the universe and produces everything and sustains life activities

Note 1 to entry: One of the fundamental beliefs of traditional philosophies, life force is the basic element and life-sustaining force. The movements or changes or transformations of life force produces everything including the human body, and sustains life activity.

Note 2 to entry: Life force tends to refer to multiple aspects, the element itself, nutritive substances and its functional activities, organs and their functions and activities. In addition, life force can refer to one of its subcategories. In other words, the term that represents life force tends to have polysemes.

EXAMPLE 1 In ancient Chinese medicine, *Qi*: Qi, *Blood*<TCM>, *Fluid*<TCM>.

EXAMPLE 2 In Ayurveda, *Prana*; *Vata*, *Pitta*, *Kapha*.

EXAMPLE 3 In traditional Thai medicine, *Lhom*, or *Lhom Pran*.

EXAMPLE 4 In traditional Tibetan medicine, *rLung*.

Note 3 to entry: In ancient Chinese medicine, *Qi*: *Qi*, *Blood*<TCM>, *Fluid*<TCM>. In this *context* (3.29), both of them are not blood or water in modern medicine/science meaning, rather, they are produced or transformed from *Qi* and have each ideological function. The same can be said in other traditional medicines, in greater or lesser.

3.24
life force flow channel
channel
ideological channels within/around the human body in which the *life force* (3.23) travels

Note 1 to entry: One of the fundamental beliefs of traditional philosophies is that these ideological channels in which a *life force* (3.23) travels within/around the human body forming networks together and can also connect *viscera and bowels* (3.28) in the *context* (3.29) of traditional medicines based on holism.

EXAMPLE 1 In ancient Chinese medicine, *Meridians*<TCM>, *Collaterals*<TCM>, *Vessels*<TCM>, *Divergences*<TCM>. *Cutaneous Regions*<TCM> and *Sinews*<TCM> are occasionally associated with each other, but it is regarded that *Sinews*<TCM> are not connected to *Viscera*<TCM> and *Bowels*<TCM>.

EXAMPLE 2 In Ayurveda, *Nadi*, *Srotas*.

EXAMPLE 3 In traditional Tibetan medicine, *Tsa*.

EXAMPLE 4 In traditional Thai medicine, *Sen*, or *Sen sib* (*Sen sip*).

Note 2 to entry: The terms listed in EXAMPLE 1 designate superordinate concept according to channel, so, there are terms for subordinate concepts, e.g. *Lung Meridian* (*Shǒu Tàiyīn Fèijīng*; 手　太陰　肺経), *Conception Vessel* (*Rènmài*; 任脈) and so on.

Note 3 to entry: Life force flow can be regarded to have normal flow direction along a channel.

3.25
connection to life force flow
ideological connection between an *acupuncture point* (3.7) and the corresponding *life force flow channels* (3.24)

Note 1 to entry: One of the fundamental beliefs of traditional philosophies in the *context* (3.29) of traditional medicines based on holism.

EXAMPLE 1 In ancient Chinese medicine, *Tàiyuān* (太淵) connects to *Lung Meridian*<TCM>, then also to *Lung*<TCM> and *Middle Energizer*<TCM>. See also 3.26 and D.1.

EXAMPLE 2 In Ayurveda, *Guda* connects to *Alambusha Nadi*. See D.2.

3.26
correspondent to life force flow
ideological correspondence between an *acupuncture point* (3.7) and *viscera and bowels* (3.28) by life force flow

Note 1 to entry: One of the fundamental beliefs of traditional philosophies in the *context* (3.29) of traditional medicines based on holism.

EXAMPLE 1 In ancient Chinese medicine, the *Lung Meridian*<TCM> has 11 acupuncture points: The first point is the *Zhōngfǔ* (中府), the second one is the *Yúnmén* (雲門), the seventh is *Lièquē* (列缺), the ninth is *Tàiyuān* (太淵), and the eleventh is *Shǎoshāng* (少商). All these connect via the *Meridian*<TCM> to the *Lung*<TCM> and the *Middle Energizer* <TCM>. *Lung Meridian*<TCM> terminates at *Shǎoshāng* (少商) but *Qi* flows to the next *channel* (3.24), the *Large Intestine Meridian*<TCM>. See D.1.

EXAMPLE 2 At *Lièquē* (列缺), the *Lung Median*<TCM> connects to the *Conception Vessel*<TCM>. The life force of the *Vessel*<TCM> converges to the *Tàiyuān* (太淵), which is one of eight influential points.

EXAMPLE 3 In Ayurveda, *Yashasvati Nadi* originates from the *Muladhara* (*Root Chakra*) and goes up to the *Manipura* (*Naval Chakra*) where it diverges to the right hand and foot. The *Nadi* then radiates from the centre of the right hand and right foot to the five fingers and toes, ending in the right thumb and big toe. See D.2.

EXAMPLE 4 *Talahridaya*, *Muladhara*, *Manipura* also connect to *Kshipra*. See D.2.

Note 2 to entry: The correspondent to life force flow is not identified in some acupuncture points, e.g. *extra points*<TCM>.

3.27
feature in life force flow
ideological feature(s) or function(s) of an acupuncture point in the relation with the life force flow(s)

Note 1 to entry: One of the fundamental beliefs of traditional philosophies in the *context* (3.29) of traditional medicines based on holism.

EXAMPLE 1 In ancient Chinese medicine, the *Zhōngfǔ* (中府) is one of the *alarm points*<TCM> (募穴); the *Lièquē* (列缺) is one of the *connecting points*<TCM> (絡穴), and at the same time, one of the *confluence points of the eight vessels*<TCM> (八脈交会穴); the *Tàiyuān* (太淵) is one of the *source points*<TCM> (原穴), *transport points*<TCM> (俞穴), and *eight meeting points*<TCM> (八会穴); the *Shǎoshāng* (少商) is one of the *well points*<TCM> (井穴).

EXAMPLE 2 The *Tàiyuān* (太淵) belongs to the *Lung Meridian*<TCM> of the hand; therefore, the acupuncture to this point is effective to the problems of the *respiratory system*<TCM>. This therapeutic action is called 疏風 解表, which means *dispersing the external Wind Pathogen*<TCM> for relieving the *exterior pattern/syndrome*<TCM>. Therefore, this point, combined with the *Lièquē* (列缺), is used to treat coughing and wheezing.

EXAMPLE 3 The *Tàiyuān* (太淵) is the *influential point*<TCM> on the pulse and the *Vessels*<TCM>; therefore, the acupuncture to this point is effective in addressing problems of the *circulatory system*<TCM>. This therapeutic action is called *replenishing Heart*<TCM> and *freeing Yáng* (益心 通陽), and defusing *Vessels*<TCM> stasis and *relieving Vessels*<TCM> (怯瘀 通脈).

EXAMPLE 4 In Ayurveda, *Nabhi marma* is located in the same position with *Manipura* (*Naval Chakra*) and belong to *Vishvodhara nadi* which controls the *digestive system*<Ayurveda>. Therefore, acupressure to this acupuncture point targets *digestive problems*<Ayurveda>.

EXAMPLE 5 *Vitapa marma* is influential point on the *Shukravaha Srotas* which controls the *reproductive system*<Ayurveda>; therefore, acupuncture to this point addresses *infertility or menstrual problems*<Ayurveda> in females and *sperm deficiency*<Ayurveda> in males.

Note 2 to entry: Feature in life flow characterizes the therapeutic action of the acupuncture point, mainly due to *connection to life force flow* (3.25) and/or *correspondent to life force flow* (3.26).

Note 3 to entry: Many acupuncture points have more than one therapeutic action by itself.

Note 4 to entry: Combination of several acupuncture points accentuate a particular therapeutic action.

Note 5 to entry: Acupuncture points can have harmful action when inappropriate intervention is applied or when intervention is based on inappropriate diagnosis.

3.28
viscus and bowel
viscera and bowels
<traditional medicine> the ideological and functional internal organ(s)

Note 1 to entry: One of the fundamental beliefs of traditional philosophies in the *context* (3.29) of traditional medicines based on holism.

Note 2 to entry: Viscera and bowels have two aspects: one is abstract of the physiological functions which consist of some functions of different organs or body systems in modern medicine and the other is materialistic and anatomical substance.

EXAMPLE In ancient Chinese medicine, **viscus** means the *internal organ*<TCM> where Qi and Qi derivatives are formed and stored. On the other hand, generally speaking, **bowel** means a part of the *digestive organs*<TCM>, but three *bowels*<TCM>, i.e. *Triple Energizers*<TCM> (Sānjiāo; 三焦), do not correspond to any anatomical organ.

3.29
context
related conditions and situations that provide a useful understanding and meaning of a subject

Note 1 to entry: Context illustrates a concept or the use of a designation.

Note 2 to entry: See also ISO 1087-1:2000, 3.6.10.

[SOURCE: ISO/TR 17119:2005, 2.4]

3.30
value
designation of characterizing concept or individual concept within a characterizing generic concept, i.e. characterizing category

3.31
source
source of terminological data
reference
terminological resource (3.32) which contains terminological data or some of it in the subject field

[SOURCE: ISO 10241:1992, 5.1.4 and ISO 1087-1:2000, 3.8.10 (for the French term)]

3.32
terminological resource
<healthcare> controlled set of terms

Note 1 to entry: Usually designed and controlled for use with computers for specific healthcare purpose, such as data entry, aggregation, retrieval and analysis.

Note 2 to entry: It is an inclusive term for *terminological system* (3.33).

[SOURCE: AWI WD 17117–1, 2013, 3.4.1, modified.]

3.33
terminological system
terminology
concept
representation system
<healthcare> structured human and machine-readable representation of healthcare concepts and relationships

Note 1 to entry: Can have associated rules and definitions.

Note 2 to entry: Used directly or indirectly to describe health conditions and healthcare activities, and allow their subsequent retrieval for analysis.

Note 3 to entry: Every terminological system should have term representations of healthcare concepts for human-readability.

[SOURCE: AWI WD 17117–1, 2013, 3.4.2, modified.]

4 Categorial structure

4.1 Outline

Categorial structure is a minimal set of **domain constraints**, which is a set of **sanctioned characteristics** composed of a **semantic link** and the applicable **characterizing category** to which the semantic link refers.[3][4][5]

In the **formal concept representation system** for the **subject field**, acupuncture points has semantic links to the following characterizing categories: **point location** (4.2.1), **clinical findings** (4.2.2) and **efficacy** (4.2.3). Characterizing categories are specified in 4.2 and semantic links are specified in 4.3. These and the **concept system** around them are illustrated in a **concept diagram** in Figure 1.

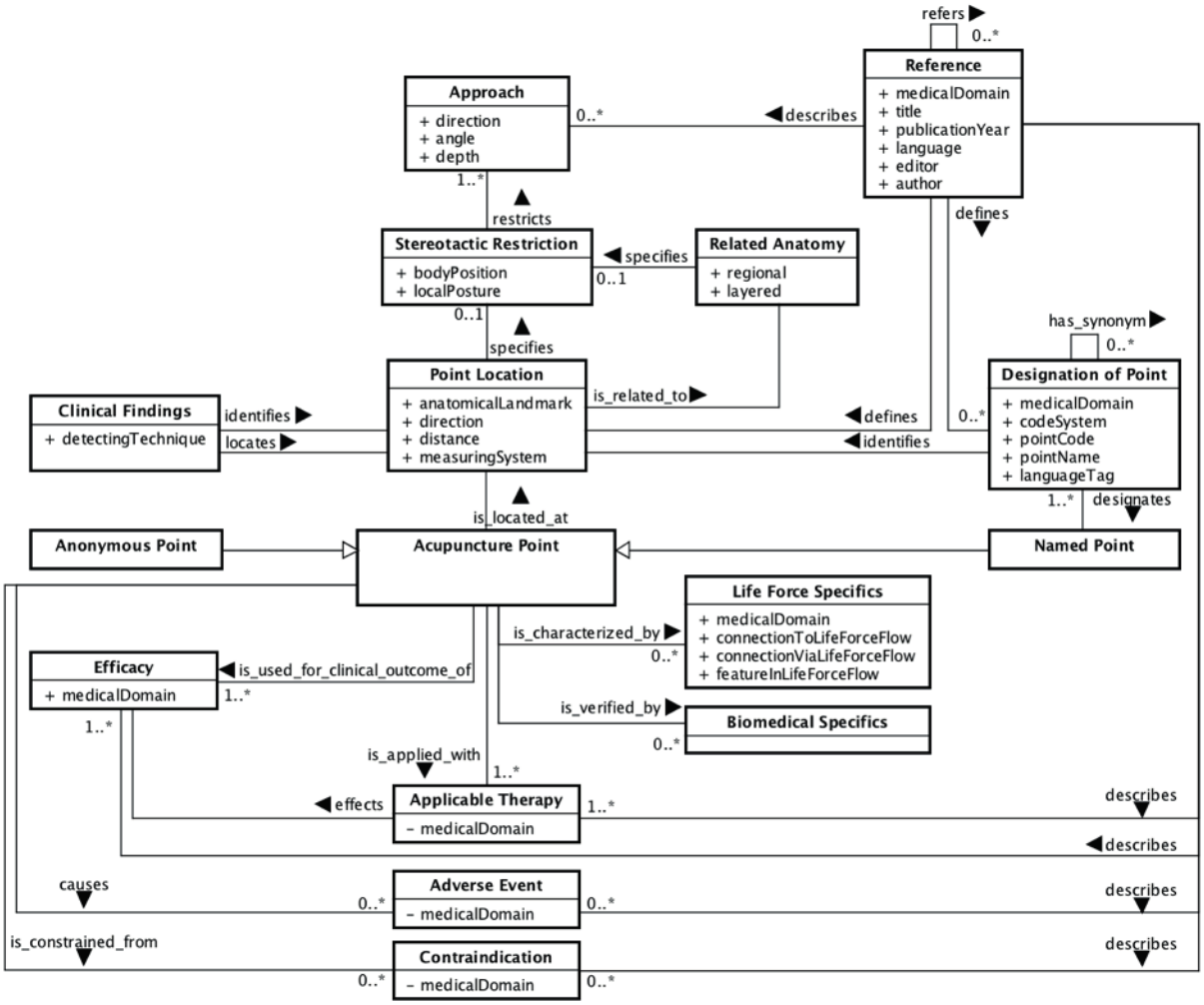

Figure 1 — Concept system around acupuncture point

In this diagram, **essential characteristics** are “point location”, “clinical findings” and “efficacy”, while additional **characterizing concepts** are “stereocratic restriction” and “approach”. “Applicable therapy”, “adverse event” and “contraindication”are aspects in therapeutics, while “reference”, “related anatomy”, life force specific” and “modern medicine specific” represent the rationale for the **causal relation** between **point location** with **clinical findings** and **efficacy**. **Designation** and **reference** are also shown in order for the support to **terminology work**.

4.2 Characterizing categories

4.2.1 Point location

Point location refers to the acupuncture point or the anatomical zone on the body surface which leads to the acupuncture point.

NOTE 1 Point location that is valid for representation of acupuncture point includes {anatomical landmark}, {direction} and {distance} with {measuring system}.

NOTE 2 Values for point location of named points are described in References [12] to [22], but not limited to them.

EXAMPLE 1 *Zhōngfǔ* is_located_at {the same level as the first intercostal space}, {lateral to the infraclavicular fossa}, {6 B-cun lateral to the anterior median line}, {body cun}.

EXAMPLE 2 *Tàiyuān* is_located_at {between the radical styloid process and the scaphoid bone, in the concave ulnar to the abductor pollicis longus tendon}.

EXAMPLE 3 *Lohitaksha leg arma* is_located_at {femoral triangle}, {where the femoral artery passes}, {2 anguli lateral to the symphysis pubis}, {anguli}.

NOTE 3 Point location is_identified_by [reverse of **identifies** (4.3.1)] clinical findings. Point location is_related_to related anatomy. Point location specifies stereotactic restriction.

4.2.2 Clinical findings

Clinical findings refers to unusual findings that appear or are detected at or around the point location before acupuncture.

NOTE 1 Clinical findings during or after acupuncture is called “elicited response.” Adverse effects are called adverse event.

NOTE 2 Clinical findings that are valid for representation of acupuncture point can include {detecting technique}.

NOTE 3 Values for clinical findings are described in References [10], [11], [12], [13], [15], [17], [18], [20] and [21], but not limited to them.

EXAMPLE 1 Referred pain, tenderness, pressure pain, swelling, piriform concaved area, trigger point, electric conductivity.

EXAMPLE 2 Lower electric conductivity area compared around there.

NOTE 4 Clinical findings identifies point location in the context of searching appropriate stimulation site of named points. Clinical findings locates point location in the context of searching appropriate stimulation site of anonymous points. See also 4.3.1 and 4.3.2.

NOTE 5 Clinical findings is not a **delimiting characteristic** but an **essential characteristic**.

4.2.3 Efficacy

Efficacy refers to the potential effect(s) of acupuncture at a certain point locations.

NOTE 1 Efficacy that is valid for representation of acupuncture point includes {medical domain}.

NOTE 2 Values for efficacy are described in References [12] to [22], but not limited to them.

EXAMPLE 1 *Tàiyuān* **is_used_for_clinical_outcome_of** (4.3.4) easing cough and wheeze.

EXAMPLE 2 *Lohitaksha leg marma* **is_used_for_clinical_outcome_of** treating thyroid hypertrophy.

4.3 Semantic links

4.3.1 identifies

identifies is the semantic link that identifies clinical findings in a point location

NOTE 1 **identifies** is used in the context of searching appropriate stimulation site of named points. Point location varies from **designation** because of individual differences.

NOTE 2 Every acupuncture point terminological phrase complying with this document uses either **identifies** or **locates** (4.3.2).

4.3.2 locates

locates is a semantic link that locates clinical findings in a point location

NOTE 1 **locates** is used in the context of searching appropriate stimulation site of anonymous points. When locating anonymous points only by clinical findings, it will specify a point location because an anonymous point does not have an identifier.

NOTE 2 Every acupuncture point terminological phrase complying with this document has either **identifies** or **locates**. See also 4.3.3.

4.3.3 is_located_at

is_located_at is a semantic link between acupuncture point and point location where acupuncture point is located

Every acupuncture point terminological phrase complying with this document shall have this semantic link.

EXAMPLE See 4.2.1.

4.3.4 is_used_for_clinical_outcome_of

is_used_for_clinical_outcome_of is a semantic link between acupuncture point and efficacy for which clinical outcome for acupuncture is used

Every acupuncture point terminological phrase complying with this document shall have this semantic link.

NOTE 1 All the acupuncture points subject to acupuncture intervention are expected to have some therapeutic effect.

EXAMPLE See 4.2.3.

4.4 Additional links

4.4.1 is_characterized_by — semantic link between life force specifics and point location of acupuncture point whose function is characterized by

NOTE 1 Characteristics of life force specifics and applying of applicable therapy causes the efficacy of acupuncture therapy in the context of traditional medicines.

NOTE 2 Characteristics of life force specifics is recognized in the context of traditional medicines that the imbalance or disorder of viscus and bowel reflects on the clinical findings of point location.

4.4.2 is_verified_by — semantic link between biomedical specifics and the stimulation to point location of acupuncture point eliciting physiological response is verified by

NOTE Biomedical specifics can verify the efficacy of acupuncture therapy in the context of modern medicines.

5 Conformance

5.1 Conformance principles

To be conformant with EN 12264:2005 and ISO 17115, any categorial structures for representation of acupuncture points in a system shall be provided the following:

— **categories** that organize healthcare **object**s for representation of acupuncture point and subdividing their representation in the **domain**;

— a list of **semantic link**s authorized by **domain constraints**;

— the goal for which the **categorial structure** is set;

— a list of minimal **domain constraints** required by the goal of the **categorial structure**.

5.2 Conformity to this document

The categorial structure representing acupuncture point claiming conformance to this document shall provide the information described in 5.1 and 5.2 and shall be conformant to the following minimum rules:

— **sanctioned characteristics** for acupuncture point shall consist of a **point location** (4.2.1) and **efficacy** (4.2.3) accompanied with **is_located_at** (4.3.3) and **is_used_for_clinical_outcome_of** (4.3.4);

— **sanctioned characteristics** for acupuncture point shall consist of **clinical findings** (4.2.2) with **locates** (4.3.2) in addition to the above, in the context of detection and usage of anonymous point.

5.3 Supplemental recommendation

If acupuncture point is specific in a certain medical domain, it should be identified with a **subject label**, especially in **clinical terminology**. In addition, **country identifier** and **language identifier** should be included, if needed.

Annex A
(normative)

Selected terms and definitions from ISO 17115:2007

The following terms and definitions are selected from ISO 17115:2007, Clause 2. They are included here as background information to key terms and definitions in Clause 3. The numbering in this annex follows the numbering in ISO 17115:2007, Clause 2 for consistency.

2.1 Specialization

2.1.4

generic concept
category

concept in a **generic relation** having the narrower **intension** [and the wider **extension**]

2.2 Formal representation of characteristics

2.2.1

composite characteristic
qualifier

representation of a **characteristic**

EXAMPLE hasCause Bacteria; Location = LeftUpperLobeOfLung.

Note 1 to entry: Typically expressed by a **semantic link** and a **characterizing concept**.

Note 2 to entry: Can be compared to an attribute-value pair in a **compositional system**.

Note 3 to entry: A qualifier often denotes **characteristic**s with a small simple **characterizing generic concept**, such as laterality (left or right), or severity (low, moderate, high).

2.2.2

characterizing concept

concept that is referenced by a **semantic link** in a **composite characteristic**

EXAMPLES "Bacterium" in the construct "Disease that hasCause Bacterium"; "Yellow" in the construct "SkinLesion that hasColor Yellow".

2.2.3

semantic link

formal representation of a directed **associative relation** or **partitive relation** between two **concept**s

EXAMPLES hasLocation (with inverse isLocationOf); isCauseOf (with inverse hasCause)

Note 1 to entry: This includes all relations except the **generic relation** .

Note 2 to entry: A semantic link always has an inverse, i.e. another semantic link with the opposite direction.

Note 3 to entry: A semantic link can be part of a **composite characteristic** where it describes the role of the **characterizing concept.** Similarly, it defines the role of a **characterizing generic concept** in a **sanctioned characteristic**.

2.3 Sanctioned specialization

2.3.1

sanctioned characteristic

formal representation of a **type of characteristic**

EXAMPLE 1 performedUsing <INSTRUMENT>; hasLocation <BodyPartOrImplantedDevice>.

EXAMPLE 2 “CauseOfInflammation canBe set{bacteria, virus, parasite, autoimmune, chemical, physical}”, where “canBe” is the **semantic link**, and “set {bacteria, virus, parasite, autoimmune, chemical, physical}” is the **characterizing generic concept**.

Note 1 to entry: A sanctioned characteristic is typically made up of a combination of a semantic link and a characterizing generic concept, and can be used in **domain constraint**s.

2.3.2

domain constraint

sanction rule prescribing the set of **sanctioned characteristics** that are valid to **specialize** a **concept** in a certain **subject field**

EXAMPLE “Infection possibly hasLocation SkeletalStructure” describes that an infection in a certain context can be located in a structure that is a kind of skeletal structure.

Note 1 to entry: The rule describes the set of sanctioned **characteristics** by combining the **semantic link** and the **characterizing generic concept** it links to, possibly by enumeration of the concepts in the characterizing generic concept.

Note 2 to entry: Different levels of sanctioning are possible (e.g. conceivable, sensible, normal, usuallyInTheContextOf, necessary).

2.3.3

characterizing generic concept
characterizing category
value domain

formal category whose specialization by a **domain constraint** is allowed to be used as **characterizing concept** in a particular context

EXAMPLE <INFECTIOUS_ORGANISM> = {bacterium, virus, parasite}, in the context of “Infection that hasCause INFECTIOUS_ORGANISM”.

Note 1 to entry: The context includes a **superordinate concept** and a **semantic link**.

2.4 Formal concept representation

2.4.1

compositional concept representation

intensional definition of a **concept** using as **delimiting characteristic**s one or more **composite characteristic**s

Note 1 to entry: This allows inference and subsumption within a **compositional system**. It is usually expressed in a formalism, such as description logic.

2.4.2

axiomatic concept representation

axiom concept representation present in a **formal system** without a **formal definition**

EXAMPLES Liver; Incision act; Pain.

Note 1 to entry: This often represents a "natural kind" from the perspective of a particular terminology system; i.e. something that "just exists". It may have a definition or description outside the system but by choice, this is not represented in the system.

2.4.3

formal definition

definition within a **formal system**

Note 1 to entry: This can be done by a **compositional concept representation** or a formal **extensional definition**.

Note 2 to entry: It is usually automatically processable and governed by explicit rules.

2.4.4

concept name
canonical expression

term which uniquely designates a **concept** within a **concept system**

EXAMPLE 1 Machine readable: <Inflammation that <hasCause Bacteria hasLocation Lung>> (with compositional characteristics sorted alphabetically after semantic link) instead of <pulmonaryInfection that hasCause Bacteria>.

EXAMPLE 2 General language: Inflammation that has cause bacteria and has location lung (with compositional characteristics sorted alphabetically after semantic link) instead of pulmonary infection that has cause bacteria.

Note 1 to entry: It is preferred expression to represent a **concept** in a given terminology system.

Note 2 to entry: It is unique within the system unambiguous.

2.4.5

categorial structure

minimal set of **domain constraint**s for representing **concepts system**s in a **subject field**

2.4.6

precoordinated concept representation

compositional concept representation within a **formal system**, with an equivalent single unique identifier

EXAMPLE Problem = Fracture that hasLocation Femur. This is an example of how a precoordinated concept is represented.

Note 1 to entry: The identifier (code, term, etc.) may be within or outside the terminology system in question.

2.4.7

post-coordinated concept representation

compositional concept representation using more than one **concept** from one or many **formal system**s, combined using mechanisms within or outside the formal systems

EXAMPLE Problem.Main = Fracture, Problem.Location = Femur within a template for a problem description.

Note 1 to entry: Combining concepts from disparate terminologies can cause problems with overlapping and/or conflicting concepts. Typically, the mechanisms for making **compositional concept representation**s are specified in an information model (e.g. as templates for a certain type of concept).

2.5 Terminology and information models, concept systems

2.5.1

formal [concept representation] system

set of machine processable definitions in a **subject field**

2.5.2

compositional system

system that supports the creation of **compositional concept representations**

2.5.3

formal category

generic concept represented by a **formal definition**

Note 1 to entry: This implies that the generic concept's **extension** can be determined algorithmically and includes extensionally defined **concepts** and formal **intensional definitions**.

2.6 Specified concepts

2.6.1

mapping

assigning an element in one set to an element in another set through **semantic correspondence**

Note 1 to entry: It is the relation with the best semantic correspondence between an element in one set and an element in another set.

2.6.2

semantic correspondence

measure of similarity between two concepts

Note 1 to entry: The opposite semantic distance.

2.6.3

instance of a concept

member of the **extension** of a **concept**

2.6.4

focus concept representation

specified representation of the **concept** of interest within a **formal system**

EXAMPLE "Moderately severe inflammation caused by pneumococci located in the upper lobe of the left lung, ascertained by plain film pulmonary X-ray and sputum culture" in the context of a diagnosis with confirmatory evidence.

Note 1 to entry: It includes context information, enabling independent use.

2.6.5

generic relation
subtype relation

relation between two **concept**s where the **intension** of one of the concepts includes that of the other concept and at least one additional **delimiting characteristic**

[SOURCE: ISO 1087-1:2000, A.3.2.21]

Note 1 to entry: All individuals in the **extension** of the second are included in the extension of the first.

EXAMPLE A generic relation exists between the concepts "internal organ" and "heart", "surgical deed" and "appendectomy", "inflammatory disease" and "pericarditis".

2.7 Terminological systems

2.7.1

classification

exhaustive set of mutually exclusive **categories** to aggregate data at a pre-prescribed **level of specialization** for a specific purpose

EXAMPLE IC D 10

2.7.2

coding scheme

collection of rules that maps the elements in one set, the “coded set” onto the elements in a second set “the code set”

[SOURCE: ISO/IEC 2382-4]

Note 1 to entry: The two sets are not part of the coding scheme.

2.7.3

coding system

combination of a set of **concept**s [coded concepts], a set of code values, and at least one **coding scheme** mapping code values to coded concepts

Note 1 to entry: Coded concepts are typically represented by **terms**, but can have other representation. Code values are typically numeric or alphanumeric.

2.7.4

reference terminology

set of atomic level designations structured to support representations of both simple and compositional concepts independent of human language (within machine)

Note 1 to entry: Reference terminology is designed to uniquely represent **concepts**.

Note 2 to entry: The terminology lists the concepts and specifies their structure, relationships and, if present, their systematic and **formal definitions**.

2.7.5

clinical terminology

terminology required directly or indirectly to describe health conditions and healthcare activities

Note 1 to entry: Health conditions include symptoms, complaints, illness, diseases, disorders, etc.

Note 2 to entry: It is used in, for example, medical records, clinical communication, and medical science.

Annex B
(normative)

Selected terms and definitions from ISO 1087-1:2000

The following terms and definitions are selected from ISO 1087-1:2000, Clause 3. They are included here as background information to key terms and definitions in Clause 3. The numbering in this annex follows the numbering in ISO 1087-1:2000, Clause 3 for consistency.

3.1 Language and reality

3.1.1

object

anything perceivable or conceivable

Note 1 to entry: Objects may be material (e.g. an engine, a sheet of paper, a diamond), immaterial (e.g. conversion ratio, a project plan) or imagined (e.g. a unicorn).

3.1.2

subject field
domain

field of special knowledge

Note 1 to entry: The borderlines of a subject field are defined from a purpose-related point of view.

3.2 Concept

3.2.1

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.

3.2.2

individual concept

concept which corresponds to only one **object**

Note 1 to entry: Examples of individual concepts are “Saturn”, “the Eiffel Tower”.

Note 2 to entry: Individual concepts are usually represented by **appellations**.

3.2.3

general concept

concept which corresponds to two or more **objects** which form a group by reason of common properties

Note 1 to entry: Examples of general concepts are “planet”, “tower”.

3.2.4

characteristic

abstraction of a property of an **object** or of a set of objects

Note 1 to entry: Characteristics are used for describing **concepts**.

3.2.5

type of characteristics

category of **characteristics** which serves as the criterion of subdivision when establishing **concept systems**

Note 1 to entry: The type of characteristics colour embraces **characteristics** (3.2.4) being red, blue, green, etc. The type of characteristics material embraces characteristics made of wood, metal, etc.

3.2.6

essential characteristic

characteristic which is indispensable to understanding a **concept**

3.2.7

delimiting characteristic

essential characteristic used for distinguishing a **concept** from related concepts

Note 1 to entry: The delimiting characteristic support for the back may be used for distinguishing the **concepts** "stool" and "chair".

3.2.8

extension

totality of **objects** to which a **concept** corresponds

3.2.9

intension

set of **characteristics** which makes up the **concept**

3.2.10

concept field

unstructured set of thematically related **concepts**

Note 1 to entry: Concept fields may be used as a starting point for establishing **concept systems**.

3.2.11

concept system
system of concepts

set of **concepts** structured according to the relations among them

3.2.12

concept diagram

graphic representation of a **concept system**

3.2.13

superordinate concept
broader concept

concept which is either a **generic concept** or a **comprehensive concept**

3.2.14

subordinate concept
narrower concept

concept which is either a **specific concept** or a **partitive concept**

3.2.15

generic concept

concept in a **generic relation** having the narrower **intension**

3.2.16

specific concept

concept in a **generic relation** having the broader **intension**

3.2.17

comprehensive concept

concept in a **partitive relation** viewed as the whole

3.2.18

partitive concept

concept in a **partitive relation** viewed as one of the parts making up the whole

3.2.19

coordinate concept

subordinate concept having the same nearest **superordinate concept** and same criterion of subdivision as some other **concept** in a given **concept system**

3.2.20

hierarchical relation

relation between two **concepts** which may be either a **generic relation** or a **partitive relation**

3.2.21

generic relation
genus-species relation

relation between two **concepts** where the **intension** of one of the concepts includes that of the other concept and at least one additional **delimiting characteristic**

Note 1 to entry: A generic relation exists between the **concepts** “word” and “pronoun”, “vehicle” and “car”, “person” and “child”.

3.2.22

partitive relation
part-whole relation

relation between two **concepts** where one of the concepts constitutes the whole and the other concept a part of that whole

Note 1 to entry: A partitive relation exists between the **concepts** “week” and “day”, “molecule” and “atom”.

3.2.23

associative relation
pragmatic relation

relation between two **concepts** having a nonhierarchical thematic connection by virtue of experience

Note 1 to entry: An associative relation exists between the **concepts** “education” and “teaching”, “baking” and “oven”.

3.2.24

sequential relation

associative relation based on spatial or temporal proximity

Note 1 to entry: A sequential relation exists between the **concepts** “production” and “consumption”, etc.

3.2.25

temporal relation

sequential relation involving events in time

Note 1 to entry: A temporal relation exists between the **concepts** “spring” and “summer”, “autumn” and “winter”.

3.2.26

causal relation

associative relation involving cause and its effect

Note 1 to entry: A causal relation exists between the **concepts** “action” and “reaction”, “nuclear explosion” and “fall-out”.

3.3 Definitions

3.3.1

definition

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

3.3.2

intensional definition

definition which describes the **intension** of a **concept** by stating the **superordinate concept** and the **delimiting characteristics**

Note 1 to entry: The following is an example of an intensional definition for the **concept** “incandescent lamp”:

incandescent lamp

electric lamp in which a filament is heated by an electric current in such a way that it emits light.

3.3.3

extensional definition

description of a **concept** by enumerating all of its **subordinate concepts** under one criterion of subdivision

EXAMPLES

Family 18 in the Periodic Table

helium, neon, argon, crypton, xenon and radon

noble gas

helium, neon, argon, crypton, xenon, or radon.

3.4 Designations

3.4.1

designation
designator

representation of a **concept** by a sign which denotes it

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

3.4.2

appellation
name

verbal **designation** of an **individual concept**

3.4.3

term

verbal **designation** of a **general concept** in a specific **subject field**

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

3.4.15

preferred term

term rated according to the scale of the term **acceptability rating** as the primary term for a given **concept**

3.4.19

synonymy

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

Note 1 to entry: The relation of synonymy exists, for example, between deuterium and heavy hydrogen.

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 *quasisynonyms*.

3.4.20

antonymy

relation between two **terms** in a given language representing opposite **concepts**

Note 1 to entry: The relation of antonymy exists, for example, between encoding and decoding, positive and negative.

Note 2 to entry: The **terms** in the relation of antonymy are called *antonyms*.

3.4.21

equivalence

relation between **designations** in different languages representing the same **concept**

3.4.22

mononymy

relation between **designations** and **concepts** in a given language in which one concept has only one designation

Note 1 to entry: The **designations** in the relation of mononymy are called mononyms.

3.4.23

monosemy

relation between **designations** and **concepts** in a given language in which one designation only relates to one concept

Note 1 to entry: The **designations** in the relation of monosemy are called *monosemes*.

3.4.24

polysemy

relation between **designations** and **concepts** in a given language in which one designation represents two or more concepts sharing certain **characteristics**

Note 1 to entry: An example of polysemy is:

bridge

1 “structure to carry traffic over a gap”

2 “part of a string instrument”

3 “dental plate”

Note 2 to entry: The **designations** in the relation of polysemy are called *polysemes*.

3.4.25

homonymy

relation between **designations** and **concepts** 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*.

3.6 Aspects of terminology work

3.6.1

terminology work

work concerned with the systemic collection, description, processing and presentation of **concept** and their **designation**

3.6.10

context

text which illustrates a **concept** or the use of a **designation**

3.8 Terminological data

3.8.1

terminological data

data related to **concepts** or their **designations**

Note 1 to entry: The more common terminological data include **entry term**, **definition**, **note**, **grammatical label**, **subject label**, **language identifier**, **country identifier** and **source identifier**.

3.8.2

terminological entry

part of a terminological data collection (ISO 1087-2:2000, 2.21) which contains the **terminological data** related to one **concept**

Note 1 to entry: Adapted from ISO 1087-2:2000.

3.8.4

entry term

term which heads a **terminological entry**

Note 1 to entry: The entry term usually corresponds to the **preferred term**.

3.8.7

subject label

information in a **terminological entry** which indicates the **subject field**

3.8.8

language identifier

information in a **terminological entry** which indicates the name of a language

3.8.9

country identifier

information in a **terminological entry** which indicates the name of a geographical region where the **designation** is used

3.8.10

source identifier

information in a **terminological entry** which indicates the source documenting the **terminological data**

Annex C
(normative)

Selected terms and definitions from ISO 16278:2016

The following terms and definitions are selected from ISO 16278:2016, Clause 2 and 3.2, which originated from EN 15521:2007. They are included here as background information to key terms and definitions in Clause 3. The numbering in this annex follows the numbering in ISO 16278:2016, Clause 2 and 3.2 for consistency.

2 Terms and definitions

2.1

human anatomy

biological science that concerns the discovery, analysis and representation of the structural organization of the human body

Note 1 to entry: Human anatomy thus defined encompasses the material objects from the granularity level of the whole human body to that of cell parts, portions of body substances, and non-material entities such as surfaces, spaces, lines and points, that form the phenotypic organization of the human body. Although encompassed by the definition of anatomical structure (4.2.9), biological macromolecules do not come under the purview of the science human anatomy.

2.2

anatomical entity

entity that constitutes the structural organization of a human body

2.3

spatial dimension

number of dimensions of the entity in space

EXAMPLE 1 Entities with spatial dimension of value 3 are organs, cells and body cavity.

EXAMPLE 2 Entities with spatial dimension of value 2: the plane of the esophagogastric junction and the surface of the parietal part of the head.

EXAMPLE 3 Entities with spatial dimension of value 1: pectinate line, linea aspera and superior nuchal line.

EXAMPLE 4 Entities with spatial dimension of value 0: the apex of petrous part of temporal bone, apex of the orbit and the apex of the sacrum.

2.4

three-dimensional shape

shape of an **anatomical entity** of spatial dimension with value 3

EXAMPLE Hollow cylinder.

3.2 Anatomical categories

3.2.1

physical anatomical entity

anatomical entity that has a **spatial dimension**

EXAMPLE Organ, surface, apex of the orbit.

3.2.3

anatomical space

immaterial physical anatomical entity which has a **spatial dimension** of value 3

EXAMPLE Thoracic cavity.

3.2.4

anatomical surface

immaterial physical anatomical entity which has a **spatial dimension** of value 2

EXAMPLE Diaphragmatic surface of heart.

3.2.5

anatomical line

immaterial physical anatomical entity which has a **spatial dimension** of value 1

EXAMPLE Inferior margin of liver.

3.2.6

anatomical point

immaterial physical anatomical entity which has a **spatial dimension** of value 0

EXAMPLE Apex of this heart.

3.2.7

material physical anatomical entity

physical anatomical entity that has a mass

EXAMPLE Liver, cell nucleus, portion of blood.

3.2.9

anatomical structure

material physical anatomical entity that has an inherent (**three-dimensional**) **shape** and is generated by a coordinated expression of the organism's own structural genes

EXAMPLE Thorax, tibia, hepatocyte.

Note 1 to entry: Post surgical anatomy (e.g. surgically created stomas, stumps, vascular and intestinal anastomoses) is not an anatomical structure. When useful, it is defined in the categorical structure needing it, e.g. for surgical procedures.

3.2.11

organ

anatomical structure that consists of a maximal collection of **cardinal organ part**s so connected to one another that together they constitute a self-contained unit of macroscopic anatomy, morphologically distinct from other such units

EXAMPLE Heart, tibia, urinary bladder.

3.2.12

cardinal organ part

anatomical structure that consists of two or more portions of tissue, spatially related to one another in patterns determined by coordinated gene expression; together with other contiguous **cardinal organ part**s it constitutes an **organ**

EXAMPLE Upper lobe of right lung, shaft of humerus, left ventricle, head of pancreas.

3.2.13

portion of tissue

anatomical structure that consists of a directly connected collection of similarly specialized cells and intercellular matrix, aggregated according to genetically determined spatial relationships

EXAMPLE Portion of smooth muscle, portion of endothelium.

3.2.14

cardinal body part

anatomical structure that has as its parts the most complete set of diverse subclasses of **organ** and **cardinal organ part**s spatially associated with either the skull, a segment of the vertebral column or a complete set of bones of the appendicular skeleton; it is partially surrounded by skin and forms a distinct morphological subdivision of the body; together all cardinal body parts constitute the body

EXAMPLE Head, neck, trunk, upper limb.

3.2.15

body region

sub volume of a **cardinal body part** (3.2.14) demarcated by at least one fiat boundary

EXAMPLE Epigastrium, femoral triangle.

3.2.17

anatomical cluster

anatomical structure that consists of a heterogeneous set of organ parts grouped together in a predetermined manner, but which do not constitute the whole or a subdivision of either a body part or an organ system

EXAMPLE Joint, adnexa of the uterus, root of the lung, renal pedicle, back.

Note 1 to entry: Such clusters can be composed of cells (e.g. splenic cord consists of erythrocytes, reticular cells, lymphocytes, monocytes, and plasma cells), cardinal organ parts (e.g. tendon sheath consists of the fused tendons of several muscles), as well as of organs (e.g. lacrimal apparatus consists of a lacrimal gland, lacrimal sac, and nasolacrimal duct, each of which is an organ).

3.2.18

anatomical set

material anatomical entity that consists of the maximum number of discontinuous members of the same class

EXAMPLE Set of cranial nerves, ventral branches of aorta, set of mammary arteries, thoracic viscera, dental arcade.

Note 1 to entry: Anatomical sets have members, rather than parts (e.g. each instance of oculomotor nerve is a member of some instance of set of cranial nerves).

Note 2 to entry: Membership in an anatomical set is often regarded as a kind of part relation. In anatomy, the distinction between part and membership relations is that there is direct continuity of a part with its respective whole, whereas no direct continuity exits exist between members of an anatomical set.

Note 3 to entry: In an anatomical set the meaning of set is different from the meaning of a set in mathematics.

Annex D
(informative)

Sample diagrams of life force flow channel and acupuncture points

D.1 Ancient Chinese

Figure D.1 illustrates the Lung Meridian (Shǒu Tàiyīn Fèijīng; 手太陰肺経) and acupuncture points on it. The figure is copied from the classic text *Elucidation of the Fourteen Meridians and Their Function*, 1341.

Figure D.1 — Lung Meridian

D.2 Indian Ayurveda

Figure D.2 illustrates Nadi.

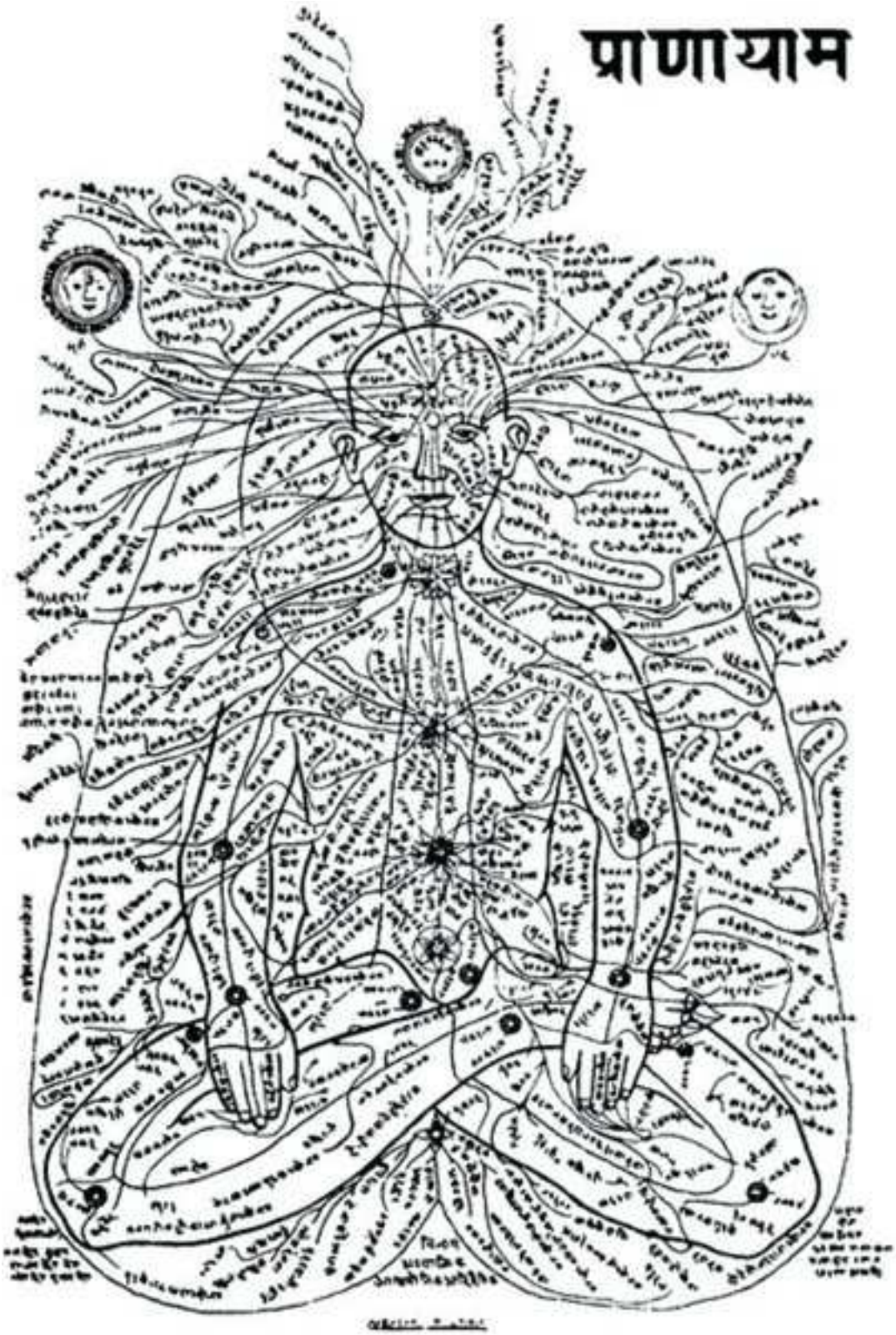

Figure D.2 — Nadi

Bibliography

[1] ISO 10241:1992[1)], *International terminology standards — Preparation and Layout*

[2] ISO 860, *Terminology work — Harmonization of concepts and terms*

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

[4] EN 12264:2005, *Health informatics — Categorial structure for systems of concepts*

[5] ISO 17115:2007, *Health informatics — Vocabulary of compositional terminological systems*

[6] ISO 16278:2016, *Health informatics — Categorial structure for terminologies systems of human anatomy*

[7] ISO/TR 17119:2005, *Health informatics — Health informatics profiling framework*

[8] World Health Organisation. Standard Acupuncture Nomenclature. WHO Region Office for the Western Pacific, Manila, Second Edition, 1993

[9] World Health Organisation. International standard terminology for traditional medicine in Western Pacific Region. WHO Region Office for the Western Pacific, Manila, 2007

[10] McPherson H., Richard H., George L. Acupuncture research — Strategies for Establishing an Evidence Base. Churchill Livingstone, 2007

[11] STRICTA Group. *Standards for Reporting Interventions in Clinical Trials of Acupuncture*. http://www.stricta.info/ [Last accessed 23rd October 2010]

[12] World Health Organisation. International standard for acupuncture point location in Western Pacific Region. WHO Region Office for the Western Pacific, Manila, 2008

[13] Liu G., & Hyodo A. eds. Shuji Goto, Dai Ximeng, Donald P.Lauda, Supervisors. Acupoints & Meridians: a Complement Work of Present Acupuncture and Moxibustion. Huaxia Publishing House, 1998

[14] Liu G., & Hyodo A. eds. Shuji Goto, Zhang Boli, Supervisors. Fundamentals of Acupuncture & Moxibustion. Huaxia Publishing House, 2006

[15] Oleson T. Auriculotherapy Manual: Chinese and Western Systems of Ear Acupuncture. Churchill Livingstone, Third Edition, 2002

[16] Baldry P.E., & John W. Thompson. Acupuncture — Trigger Points and Musculoskeletal Pain. Churchill Livingstone, Third Edition, 2005

[17] Hecker H.U., Steveling A., Peuker E. Microsystems Acupuncture: The Complete Guide: Ear — Scalp — Mouth — Hand. Thieme Medical Publishers, 2006

[18] Aung S.K.H., & Chen W.P.D. Clinical Introduction to Medical Acupuncture. Thieme Medical Publishers, 2006

[19] White A. ed. An introduction to Western medical acupuncture. Churchill Livingstone, 2008

[20] Landgren K. Ear Acupuncture — A practical Guide. Churchill Livingstone, 2008

[21] Cross J.R. Acupuncture and the Chakra Energy System. North Atlantic Books, 2008

[22] Frawley D., Ranade S., Lele A. Ayurveda and Marma Therapy. Twin Lakes, 2009

1) Withdrawn.

[23] World Health Organization Western Pacific Regional Office. The Regional Strategy of Traditional Medicine in Western Pacific (2011-2020). World Health Organization, 2012

[24] Feely R.A. Yamamoto New Scalp Acupuncture: Principles and practice. Thieme Medical Publishers, 2010

[25] *Elucidation of the Fourteen Meridians and Their Function*, 1341

[26] ISO/IEC 2382–4, *Information technology — Vocabulary — Part 4: Organization of data*

ICS 35.240.80

Price based on 33 pages