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ISO RECOMMENDATION

R 1087

VOCABULARY OF TERMINOLOGY

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BRIEF HISTORY

The ISO Recommendation R 1087, *Vocabulary of terminology*, was drawn up by Technical Committee ISO/TC 37, *Terminology (Principles and co-ordination)*, the Secretariat of which is held by the Österreichisches Normungsinstitut (ON).

Work on this question led to the adoption of a Draft ISO Recommendation.

In March 1965, this Draft ISO Recommendation (No. 781) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Argentina	Greece	Spain
Austria	India	Switzerland
Bulgaria	Iran	Turkey
Chile	Israel	U.A.R.
Czechoslovakia	New Zealand	U.S.A.
France	Portugal	
Germany	Romania	

Five Member Bodies opposed the approval of the Draft :

Ireland	United Kingdom
Italy	U.S.S.R.
Poland	

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council which decided, in June 1969, to accept it as an ISO RECOMMENDATION.

FOREWORD

Cooperation and communication between experts engaged in all branches of science and technology are assuming ever-increasing importance as essential conditions for progress, both within each country and between countries. For this exchange to be successful, technical terms must have the same meaning for everyone who uses them. This goal can only be achieved if there is general agreement on the meaning of these terms. Hence the importance of technical vocabularies, in which concepts and terms, as well as their definitions, are standardized (terminological standards). It is standards such as these that help to ensure mutual understanding.

These vocabularies are prepared by the National Standards Associations and by the Technical Committees of ISO. During the work on terminology carried out by these bodies it quickly became apparent that it was necessary to have directives applicable to any field of knowledge and that it was possible to establish them.

Accordingly, ISO set up a Technical Committee, known as ISO/TC 37, *Terminology (Principles and co-ordination)*, with the mission of finding out and formulating general principles on terminology and terminological lexicography.

The ISO Recommendations prepared by this Technical Committee deal with questions that fall under the following four classes :

1. Vocabulary of terminology.
2. Procedure for preparing national or international standardized vocabularies.
3. National and international standardization of concepts, terms and their definitions : principles for their establishment and criteria of value.
4. Layout of monolingual and multilingual vocabularies, including lexicographical symbols.

The ISO Recommendation included in class 2 deals with guidance in the organization of the work, while the other classes are concerned with technical details.

The following ISO Recommendations have been or will be issued :

Class 1

ISO/R 1087	*Vocabulary of terminology*

Class 2

ISO/R 919	*Guide for the preparation of classified vocabularies (Example of method)*

Class 3

ISO/R 704	*Naming principles*
ISO/R 860	*International unification of concepts and terms*

Class 4

ISO/R 1149	*Layout of multilingual classified vocabularies*
ISO/R . . .	*Layout of monolingual classified vocabularies*
ISO/R . . .[1]	*Lexicographical symbols*
ISO/R 639	*Symbols for languages, countries and authorities*

(1) At present Draft ISO Recommendation No. 1951.

CONTENTS

(1) The sections of this Vocabulary correspond to those of ISO Recommendation R 704, *Naming principles.*

(2) Section 4 of the Vocabulary will be contained in a supplement to this ISO Recommendation.

SYMBOLS USED[1]

;	between terms	Semi-colons separate synonyms. *Example* : **connotation; intension.**
[ ]	enclosing words	Brackets enclose words which may replace preceding words. *Example* : **complex ⌜term [form]** is equivalent to : **complex term; complex form.**
( )	enclosing words	Parentheses enclose words which may be neglected : (1) If they are bold-faced, these words are part of the term. *Example* : **field (of knowledge)** is equivalent to : **field of knowledge; field.** (2) If they are light-faced, the words are an explanatory note only. *Example* : **terminology** [1] (science).
( )	enclosing numbers	Parentheses enclose the number of another entry of the Vocabulary to which reference is made. *Example* : The ⌜field of knowledge (17) treating of . . . (Beginning of definition No. 38). The reference "(17)" refers to entry No. 17, where the term **field of knowledge** is defined.
⌜	before words	Corner brackets limit the scope of the symbol [ ] or of the symbol ( ) enclosing a number. *Examples :* (1) ⌜ **term**, in the example given above for the symbol [ ]. (2) "⌜ field", in the example given above for the symbol ( ) enclosing numbers.

D	German	F	French	R	Russian	Sv	Swedish
E	English	I	Italian	S	Spanish		

(1) See ISO Recommendation R . . . , *Lexicographical symbols* (at present Draft ISO Recommendation No. 1951) and ISO Recommendation R 639, *Symbols for languages, countries and authorities.*

ISO Recommendation R 1087 June 1969

VOCABULARY OF TERMINOLOGY

INTRODUCTION

This ISO Recommendation contains the Vocabulary of Terminology, included in class 1 of the Recommendations prepared by ISO/TC 37, *Terminology (Principles and co-ordination)*.

The purpose of the Vocabulary is to provide a certain number of basic terms used in terminology and lexicography.

Its use is recommended for all terminological work in the field of standardization.

The Vocabulary contains the technical terms used in the ISO Recommendations enumerated in the Foreword. The Vocabulary is therefore fundamental for the use of all these documents.

The majority of the terms, however, found in the Vocabulary, correspond to the ISO Recommendation R 704, *Naming principles*. This document provides a great number of examples for the application of terms.

1. THE UNIVERSE (No. 1)

1

Individual object; particular object; individual : Any phenomenon of the outer or inner world which is observed (or can be observed) by a man at a given moment.

Examples : Socrates as a living person capable of being touched; this tree in our garden; a given spot on this tree; the fall of this tree; that physical or psychic pain which I feel at the moment; this perception or mental image.

2. CONCEPTS AND DEFINITIONS (No. 2 to 30)

2.1 Concepts and concepts systems (No. 2 to 26)

2.1.1 *Concepts (No. 2 to 8)*

2

concept : Any unit of thought, generally expressed by a term (31), a ⌜letter symbol (48) or by any other symbol.

Concepts may be the mental representation not only of beings or things (as expressed by nouns), but, in a wider sense, also of qualities (as expressed by adjectives or nouns), of actions (as expressed by verbs or nouns), and even of locations, situations or relations (as expressed by adverbs, prepositions, conjunctions or nouns).

A concept may represent only one ⌜individual object (1) or – by "abstraction" – comprise all individuals having certain characteristics (3) in common.

Furthermore a concept may arise from the combination of other concepts, even without regard to reality. The number of concepts (represented by terms) which may be combined to form a new concept (term) is limited by the fact that in a proposition a concept can only be either subject or predicate, but not comprise both.

Examples : The concepts expressed by the terms *Socrates, Greece*; *man, hammer, cross-pane hammer; round, roundness, magnetic permeability*; *to revolve, revolution, number of revolutions per unit of time*; *space, force, square root*; *above, in front of, while*; *centaur, Neptune* (the planet, as already known by calculation before its discovery), *ekasilicon* (i.e. the chemical element predicted by Mendeleef in his periodic classification, afterwards named *Germanium*).

3

characteristic (of a concept) : Any of the properties that constitute a concept (2).

Example : Among the characteristics of the concept "tree" are reproductiveness, a woody trunk, and ramification at a certain height.

Some types of characteristics, especially characteristics relating to material objects, are enumerated under 21 to 25.

4

connotation; intension (of a concept) : The aggregate of all characteristics (3) which constitute a concept (2).

5

genus (of . . .) : Concept **a** is a "genus" of a concept **b**, if **b** possesses the same characteristics (3) as **a**, and one or more additional characteristics.

Example : The concept "tree" is a genus of the concept "apple-tree".

6

species (of . . .) : Concept **b** is a species of concept **a** if **a** is a genus of **b**.

Example : The concept "apple-tree" is a species of the concept "tree".

7

extension[1] (by resemblance); **denotation** : The aggregate of all imaginable species (6) of a concept (2), considered separately. Also the aggregate of all ⌜individual objects (1) ever covered by that concept.

The species considered must all have the same degree of abstraction (see 13).

Example : The extension of the plant genus "fir-tree" comprises (in the light of the present knowledge) 30 species, among them e.g. "silver fir", the "Nordmann fir" (of the Caucasus) and the "balsam fir" (of Canada).

8

extension[2] (by composition) : The aggregate of all parts of a whole, considered separately.

Example : All wheels of a gear, even when the latter is taken to pieces.

2.1.2 *Systems of concepts* (*No. 9 to 20*)

9

system of concepts : A group of concepts (2) connected by logical or ontological relations. Such a system is constituted by ⌜horizontal or ⌜vertical series of concepts (see 13), or at least by one such series.

L o g i c a l relations are based on resemblance of the concepts. They produce typically a ⌜genus-species system (10).

O n t o l o g i c a l relations are based on the contiguity, i.e. on the contact – in space or time – of the individuals (1) representing the concepts. The types of ontological systems most important in technology are the ⌜whole-and-part system (11) and the development system (e.g. the genealogical table of an individual animal, of a product or of a language).

Example : See 10, 11, 12, 13.

10

genus-species system : A ⌜system of concepts (9) connected by a logical relation (see 9), viz. by the genus-species relation (see 5, 6).

Example : The flora of the world or of a region, analysed with regard to the relationship of the plants. See also 13.

11

whole-and-part system : A ⌜system of concepts (9) connected by one of the ontological relations (see 9), namely by the whole-and-part relation.

Examples : The flora of the world or of a region, analysed with regard to the geographical distribution of the plants; the aggregate of the concepts corresponding to the parts of a machine, or to the countries, provinces and districts of a continent. See also 13.

12

mixed system of concepts : A ⌜system of concepts (9) connected by more than one type of relation at once (see 9), particularly the combination of ⌜genus-species systems (10) and whole-and-part systems (11).

Example : The concepts grouped in the Universal Decimal Classification (UDC).

13

series of concepts : A sequence of related (see 9) concepts (2) in which every concept has only one immediate predecessor and one immediate follower. One or more series of concepts constitute a ⌜system of concepts (9). A series is a linear system.

In a "horizontal series" the concepts are coordinated, i.e. they have the same degree of abstraction or division. Such a series is established by variation of a characteristic (3). In a "vertical series" the concepts are subordinated to each other.

Examples of a l o g i c a l series (1) :

(1.1) Horizontal : all species of a genus of plants; the degrees of military rank or of temperature, different sizes, etc.

(1.2) Vertical : the species, the genus, the family and the class to which belongs a given plant.

Examples of an o n t o l o g i c a l series (2) :

(2.1) Horizontal : the head, the collar, the shank and the end of a bolt.

(2.2) Vertical : the table of the geological ages; the series of the (male) ancestors of a man.

14

classified system of concepts; classification : A ⌜system of concepts (9) the structure of which is specified.

Examples : The scientific system of classification of plants; the Universal Decimal Classification (UDC).

15

graphical representation of a classification : A table of the concepts (2) constituting a ⌜system of concepts (9) in which the interrelations between the concepts are shown by a pyramid-like arrangement (= by a family tree).

16

schedule of concepts : A list of such concepts (2) as constitute a ⌜system of concepts (9) in which the interrelations between the concepts are shown by linear sequence combined with an arrangement in steps, with the use of various typographic founts or with a system of notation.

17

field (of knowledge); subject (field) : A specialized sphere of the activity of human mind.

Examples : A branch of science; the technique of a particular profession.

18

specific concept (in a given field) : A concept (2) pertaining primarily to a given field (17).

Examples : In automobile engineering, the concepts "automobile" and "limousine".

19

borrowed concept : A concept (2) frequently used in a given field (17) but belonging primarily to another field.

Examples : In automobile engineering the concepts "lubricating oil", "fuel", and "shaft".

20

concept exceeding the given field : A concept (2) belonging to a larger field (17) of which the given field forms a part.

Examples : In automobile engineering, the concept "wheel".

2.1.3 *Types of characteristics (No. 21 to 25)*

21

intrinsic [inherent] characteristic : A characteristic (3) referring to an object in itself, not in its relation to another.

Examples : Shape; size; material; colour.

22

extrinsic characteristic : A characteristic (3) belonging to an object only in its relations to another.

Frequently occurring types of extrinsic characteristics are the ⌜characteristics of origin (23) and of purpose (24).

Examples : See 23, 24.

23

characteristic of origin : An ⌜extrinsic characteristic (22) indicating where, through whom or how an object comes into existence or use, or becomes known.

Examples : The discoverer, inventor or describer of an object, its producer or supplier, the place of its production (town, country), its mode of manufacture.

24

characteristic of purpose : An ⌜extrinsic characteristic (22) indicating the purpose which an object serves.

Examples : Mode of employment; the field of application; the assembly location or position.

25

equivalent characteristics : Different characteristics (3) which, nevertheless, may be substituted for each other in a given intension (4) without modifying the expression (7).

The interchangeability of characteristics is caused by an accidental ⌜ontological connexion (see 9), not by logical equivalence.

Examples : The characteristics "equilateral" (= having all the sides equal) and "equiangular" (= having all the angles equal) in the concept "equilateral [equiangular] triangle"; "convex lens" = "converging lens".