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Systems and software engineering — Vocabulary

Ingénierie des systèmes et du logiciel — Vocabulaire



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Contents

Page

Foreword	v
Introduction.....	vi
1 Scope	1
1.1 Relationship of the print and internet-accessible versions	1
1.2 Vocabulary structure.....	1
1.3 PMI Glossary provisions.....	2
2 Conformance	2
3 Terms and definitions	2
Annex A (informative) List of Source Standards	404
Annex B (informative) List of References.....	409

List of Figures

	Page
Figure 1 — Activity.....	9
Figure 2 — Block Diagram.....	35
Figure 3 — Box diagram.....	38
Figure 4 — Bubble chart.....	39
Figure 5 — Call graph.....	42
Figure 6 — Case construct.....	45
Figure 7 — Categorization of software.....	46
Figure 8 — Data flow diagram.....	90
Figure 9 — Data structure diagram.....	92
Figure 10 — Directed graph.....	110
Figure 11 — Documentation tree.....	113
Figure 12 — Flowchart.....	145
Figure 13 — Graph.....	158
Figure 14 — If-then-else construct.....	168
Figure 15 — Input-process-output chart.....	178
Figure 16 — Modification request.....	222
Figure 17 — Structure chart.....	349
Figure 18 — UNTIL.....	387
Figure 19 — Web site.....	399
Figure 20 — WHILE.....	400

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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

The main task of ISO/IEC JTC 1 is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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ISO/IEC/IEEE 24765 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*, in cooperation with the Software & Systems Engineering Standards Committee of the IEEE Computer Society of the IEEE, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

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Introduction

The systems and software engineering disciplines are continuing to mature while information technology advances. New terms are being generated and new meanings are being adopted for existing terms. This International Standard was prepared to collect and standardize terminology. Its purpose is to identify terms currently in use in the field and standard definitions for these terms. It is intended to serve as a useful reference for those in the Information Technology field, and to encourage the use of systems and software engineering standards prepared by ISO and liaison organizations IEEE Computer Society and Project Management Institute (PMI). It provides definitions that are rigorous, uncomplicated, and understandable by all concerned.

While it is useful to find the meaning of a term, no word stands in isolation. This International Standard makes it possible to search for related concepts and to view how a term is used in definitions of other terms.

Every effort has been made to use definitions from established systems and software engineering standards of ISO JTC 1/SC 7 and its liaison organizations IEEE Computer Society and the PMI. When existing standards were found to be incomplete, unclear or inconsistent with other entries in the vocabulary, however, new, revised, or composite definitions have been developed. Some definitions have been recast in a systems, rather than software, context.

This International Standard replaces IEEE Std 610.12-1990, IEEE Standard Glossary of Software Engineering Terminology, which was contributed by the IEEE as a source document. The approach and lexical exactitude of IEEE Std 610.12-1990 served as a model for this International Standard. Nevertheless, approximately two-thirds of the definitions in this International Standard are new since IEEE Std 610.12 was last updated in 1990, a reflection of the continued evolution in the field.

The vocabulary is offered in both print and internet-accessible versions for ease of reference.

Systems and software engineering — Vocabulary

1 Scope

Consistent with ISO vocabulary standards, each technical committee is responsible for standard terminology in its area of specialization. This International Standard provides a common vocabulary applicable to all systems and software engineering work falling within the scope of ISO JTC 1/SC 7.

The scope of each concept defined has been chosen to provide a definition that is suitable for general application. In those circumstances where a restricted application is concerned, a more specific definition might be needed.

Terms have been excluded if they were

- considered to be parochial to one group or organization;
- company proprietary or trademarked;
- multi-word terms whose meaning could be inferred from the definitions of the component words;
- terms whose meaning in the information technology (IT) field could be directly inferred from their common English meaning.

1.1 Relationship of the print and internet-accessible versions

The primary tool for maintaining this vocabulary is a database that is modified in a controlled fashion. Hosted by the IEEE Computer Society, the SEVOCAB (systems and software engineering vocabulary) database is publicly accessible at www.computer.org/sevocab. ISO/IEC 24765 is issued periodically as a formal, published International Standard reflecting a "snapshot" of the database.

The copyright notice provided with the database permits users to copy definitions from the database as long as the source of the definition is cited. Permitting public use of the definitions in the database is intended to encourage the use of other ISO/IEC JTC 1 and IEEE systems and software engineering standards.

1.2 Vocabulary structure

Entries in the vocabulary are arranged alphabetically. Blanks precede all other characters in alphabetizing. Hyphens and slashes (- and /) follow all other characters in alphabetizing.

An entry can consist of a single word, such as "software"; a phrase, such as "test case"; or an acronym, such as "CDR". Phrases are given in their natural order (test plan) rather than in reversed order (plan, test). Acronyms can be listed separately as well as in parentheses following the source term. Terms that are verbs are shown without the infinitive marker "to".

After each term, numbered definitions are listed in order of preference, or from the most general to the more specific usages. The different definitions can show the use of a term as a noun, verb and adjective.

This International Standard includes references to the active source standards for each definition, so that the use of the term can be further explored. The sources of most of the definitions are ISO JTC 1/SC 7 or IEEE Computer Society standards and the PMI Glossary, Fourth Edition. Sources are listed in Annex A. In some

cases, the same definition can also be found in other active or withdrawn standards. No source is shown if the original source standard has been withdrawn or archived and the definition has been retained in this vocabulary.

Notes (comments), Examples, and illustrations taken from the source standards have been included to clarify selected definitions.

The following cross-references are used to show a term's relationship to other terms in the dictionary.

- *Syn* refers to a synonym: a term with the same meaning. Synonyms are listed under the preferred term and can be located by searching.
- *cf.* refers to related terms that are not synonyms.

1.3 PMI Glossary provisions

The Project Management Institute (PMI) Glossary definitions have been included without alteration in accordance with the copyright agreement. Many of these definitions include explanatory material. For other terms and other definitions that have ISO/IEC and IEEE standards as their source, explanatory matter is shown in the Notes and Examples.

Many of the definitions from the PMI Glossary begin with a word or phrase in brackets, such as [Process], [Output/Input], [Technique]. These bracketed entries refer to the schema of the Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK®¹ Guide)* – Fourth Edition, which provides further explanation.

2 Conformance

The definitions in this International Standard are drawn from normative standards and informative guidance documents, including ISO Technical Reports (TR). This International Standard may be used as a normative document for projects and organizations claiming conformance to the normative source standards. Where terms have multiple definitions, users should consult the source standards for further information on appropriate usage within a specific context. Annex B lists other references.

Terms, definitions, and notes use spelling preferred in the USA. The use of capital letters has been minimized and generally limited to proper names and acronyms. In some cases the source standard uses another correct spelling (such as *behaviour* rather than *behavior*, *on-line* rather than *online*). Other correct spellings and capitalization of the terms, according to a national standard, an authoritative general dictionary or accepted style guide may be used with the definitions.

3 Terms and definitions

- ### 3.1 <Viewpoint> language
1. definitions of concepts and rules for the specification of an ODP system from the <viewpoint> viewpoint. ISO/IEC 10746-3:1996 Information technology — Open Distributed Processing — Reference Model: Architecture.4.2.1.1

NOTE Thus, engineering language is defined as "definitions of concepts and rules for the specification of an ODP system from the engineering viewpoint".

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