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Systems and software engineering — Vocabulary

Ingénierie des systèmes et du logiciel — Vocabulaire

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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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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 document 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).

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For an explanation on the voluntary nature of standards, 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.

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

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This second edition cancels and replaces the first edition (ISO/IEC/IEEE 24765:2010), and has been editorially revised. Revisions in terms and definitions published in this second edition have been previously approved through the vocabulary maintenance procedures of ISO/IEC JTC 1/SC7, in cooperation with the IEEE Computer Society. These revisions have been made available through the online vocabulary database used for this standard, maintained by the ISO/IEC JTC 1/SC7/SWG 22 Vocabulary Validation Team in cooperation with the IEEE Computer Society at www.computer.org/sevocab

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 document 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/IEC JTC 1 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 document 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 system, rather than software, context.

The vocabulary is offered in both print and internet-accessible versions for ease of reference and to encourage use of the source standards for the vocabulary. The online vocabulary database used for this standard is maintained by the ISO/IEC JTC 1/SC7/SWG 22 Vocabulary Validation Team in cooperation with the IEEE Computer Society at www.computer.org/sevocab

Systems and software engineering — Vocabulary

1 Scope

1.1 General

Consistent with ISO vocabulary standards, each technical committee is responsible for standard terminology in its area of specialization. This document provides a common vocabulary applicable to all systems and software engineering work falling within the scope of ISO/IEC JTC 1/SC 7, *Software and systems engineering*, and the IEEE Computer Society Systems and Software Engineering Standards Committee (IEEE-CS S2ESC).

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; and
- terms whose meaning in the information technology (IT) field could be directly inferred from their common English dictionary meaning.

1.2 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/IEEE 24765 is issued periodically as a formal, published document 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.

1.3 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.

Preferred terms are shown in **bold**. Synonyms or admitted terms (terms with the same meaning as the preferred term), are listed under the preferred term in plain text, and can be located by searching.

Terms, definitions, and notes use spelling preferred in the US. 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). Technical terms in English often change form from two words to a hyphenated word to a single word as they become more familiar, e.g., real time to real-time to realtime. Hence, other correct spellings and capitalization of the terms, according to a national standard, an authoritative general dictionary or accepted style guide, can be used with the definitions.

An entry can consist of a single word, such as "software"; a phrase or compound term, such as "test case"; or an abbreviated term, such as "CDR". Phrases are given in their natural order (test plan) rather than in reversed order (plan, test). Abbreviated terms 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 document 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, Fifth Edition. Sources are listed in the Bibliography. Additional sources for definitions drawn from outside the scope of systems and software engineering are in Annex A, List of References. 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 Figures taken from the source standards have been included to clarify selected definitions.

Cross-references are used to show a term's relationship to other terms in the dictionary: *cf.* refers to related terms that are not synonyms.

1.4 PMI Glossary provisions

The Project Management Institute (PMI) Glossary definitions have been included without alteration in accordance with the copyright agreement. Some of these terms and definitions are not worded according to ISO/IEC or IEEE styles. 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.

2 Normative references

There are no normative references in this document.

NOTE The definitions in this document are drawn from normative standards and informative guidance documents, including ISO/IEC Technical Reports (TR). Where terms have multiple definitions, users should consult the source standards for further information on appropriate usage within a specific context.

3 Terms, definitions, and abbreviated terms

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

ISO, IEC and IEEE 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>
- IEEE Standards Dictionary Online: available at <http://dictionary.ieee.org>

A snapshot of the most recently updated content of ISO/IEC/IEEE 24765 is available at www.computer.org/sevocab

Annex A (informative)

List of References

The systems and software engineering standards and publications within the scope of ISO JTC 1/SC7 and the IEEE Computer Society refer to definitions from other standards maintained by other ISO or IEC Technical Committees. These are listed here as references for ISO/IEC/IEEE 24765.

- [1] IEC 61508-4, Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 4: Definitions and abbreviations
- [2] ISO 9000:2015, *Quality management systems — Fundamentals and vocabulary*
- [3] ISO 9241-11:1998, Ergonomic requirements for office work with visual display terminals (VDTs) — Part 11: Guidance on usability
- [4] ISO 9241-110:2006, *Ergonomics of human-system interaction — Part 110: Dialogue principles*
- [5] ISO 9241-171:2008, *Ergonomics of human-system interaction — Part 171: Guidance on software accessibility*
- [6] ISO Guide 73:2009, *Risk management — Vocabulary*
- [7] ISO/IEC Guide 2:2004, *Standardization and related activities — General vocabulary*
- [8] ISO/IEC Guide 51:2014, *Safety aspects — Guidelines for their inclusion in standards*
- [9] ISO/IEC Guide 99:2007, *International vocabulary of metrology — Basic and general concepts and associated terms*

Bibliography

- [1] *A Guide to the Project Management Body of Knowledge (PMBOK® Guide) — Fifth Edition*
- [2] IEEE 1012-2012, *IEEE Standard for System and Software Verification and Validation*
- [3] IEEE 1016-2009, *IEEE standard for Information Technology-Systems Design-Software Design Descriptions*
- [4] IEEE 1028-2008, *IEEE Standard for Software Reviews and Audits*
- [5] IEEE 1044-2009, *IEEE Standard Classification for Software Anomalies*
- [6] IEEE 1045-1992 (R2002), *IEEE Standard for Software Productivity Metrics*
- [7] IEEE 1061-1998 (R2004), *IEEE Standard for Software Quality Metrics Methodology*
- [8] IEEE 1062-2015, *IEEE Recommended Practice for Software Acquisition*
- [9] IEEE 1074-2006, *IEEE Standard for Developing a Software Project Life Cycle Process*
- [10] IEEE 1175.1-2002 (R2007), *IEEE Guide for CASE Tool Interconnections-Classification and Description*
- [11] IEEE 1175.2-2006, *IEEE Recommended Practice for CASE Tool Interconnection — Characterization of Interconnections*
- [12] IEEE 1175.3-2004, *IEEE Standard for CASE Tool Interconnections - Reference Model for Specifying Software Behavior*
- [13] IEEE 1175.4-2008, *IEEE Standard for CASE Tool Interconnections - Reference Model for Specifying System Behavior*
- [14] IEEE 1228-1994 (R2002), *IEEE Standard for Software Safety Plans*
- [15] IEEE 1320.1-1998, (R2004), *IEEE Standard for Functional Modeling Language - Syntax and Semantics for IDEF0*
- [16] IEEE 1320.2-1998 (R2004), *IEEE Standard for Conceptual Modeling Language Syntax and Semantics for IDEF1X97 (IDEFobject)*
- [17] IEEE 14764-2006, *Software Engineering - Software Life Cycle Processes - Maintenance*
- [18] IEEE 1517-2010, *IEEE Standard for Information Technology — System and software life cycle processes — Reuse processes*
- [19] IEEE 15288.1:2014, *IEEE Standard for Application of Systems Engineering on Defense Programs*
- [20] IEEE 15288.2:2014, *IEEE Standard for Technical Reviews and Audits on Defense Programs*
- [21] IEEE 730-2014, *IEEE Standard for Software Quality Assurance Processes*
- [22] IEEE 828-2012, *IEEE Standard for Configuration Management in Systems and Software Engineering*
- [23] IEEE 982.1-2005, *IEEE Standard Dictionary of Measures of the Software Aspects of Dependability*
- [24] ISO 3535:1977, *Forms design sheet and layout chart*
- [25] ISO 5806:1984, *Information processing — Specification of single-hit decision tables*
- [26] ISO 5807:1985, *Information processing — Documentation symbols and conventions for data, program and system flowcharts, program network charts and system resources charts*
- [27] ISO/IEC 10746-1:1998, *Information technology — Open Distributed Processing — Reference model: Overview*

- [28] ISO/IEC 10746-2:2009, *Information technology — Open Distributed Processing — Reference Model: Foundations*
- [29] ISO/IEC 10746-3:2009, *Information technology — Open Distributed Processing — Reference Model: Architecture*
- [30] ISO/IEC 11411:1995, *Information technology — Representation for human communication of state transition of software*
- [31] ISO/IEC 12207:2008, *Systems and software engineering — Software life cycle processes*
- [32] ISO/IEC 13235-3:1998, *Information technology — Open Distributed Processing — Trading Function — Part 3: Provision of Trading Function using OSI Directory service*
- [33] ISO/IEC 14102:2008, *Information Technology — Guideline for the evaluation and selection of CASE tools*
- [34] ISO/IEC 14143-1:2007, *Information technology — Software measurement — Functional size measurement; Part 1: Definition of concepts*
- [35] ISO/IEC 14143-2:2011, *Information technology — Software measurement — Functional size measurement — Part 2: Conformity evaluation of software size measurement methods to ISO/IEC 14143-1*
- [36] ISO/IEC 14143-6:2012, *Information technology — Software measurement — Functional size measurement — Part 6: Guide for use of ISO/IEC 14143 series and related International Standards*
- [37] ISO/IEC 14568:1997, *Information technology — DXL: Diagram eXchange Language for tree-structured charts*
- [38] ISO/IEC 14598-5:1998, *Information technology — Software product evaluation — Part 5: Process for evaluators*
- [39] ISO/IEC 14752:2000, *Information technology — Open Distributed Processing — Protocol support for computational interactions*
- [40] ISO/IEC 14753:1999, *Information technology — Open Distributed Processing — Interface references and binding*
- [41] ISO/IEC 14756:1999, *Information technology — Measurement and rating of performance of computer-based software systems*
- [42] ISO/IEC 14769:2001, *Information technology — Open Distributed Processing — Type Repository Function*
- [43] ISO/IEC 14771:1999, *Information technology — Open Distributed Processing — Naming framework*
- [44] ISO/IEC 15026-1:2013, *Systems and software engineering — Systems and software assurance — Part 1: Concepts and vocabulary*
- [45] ISO/IEC 15026-3:2015, *Systems and software engineering — Systems and software assurance — Part 3: System integrity levels*
- [46] ISO/IEC 15414:2015, *Information technology — Open distributed processing — Reference model — Enterprise language*
- [47] ISO/IEC 15474-1:2002, *Information technology — CDIF framework — Part 1: Overview*
- [48] ISO/IEC 15474-2:2002, *Information technology — CDIF framework — Part 2: Modelling and extensibility*
- [49] ISO/IEC 15475-2:2002, *Information technology — CDIF transfer format — Part 2: Syntax SYNTAX.1*
- [50] ISO/IEC 15475-3:2002, *Information technology — CDIF transfer format — Part 3: Encoding ENCODING.1*
- [51] ISO/IEC 15476-4:2005, *Information technology — CDIF semantic metamodel — Part 4: Data models*
- [52] ISO/IEC 15909-1:2004, *Software and system engineering — High-level Petri nets — Part 1: Concepts, definitions and graphical notation*
- [53] ISO/IEC 15909-2:2011, *Software and system engineering — High-level Petri nets — Part 2: Transfer format*

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- [54] ISO/IEC 15940:2013, *Systems and software engineering — Software Engineering Environment Services*
- [55] ISO/IEC 16085:2006, *Systems and software engineering — Life cycle processes — Risk management*
- [56] ISO/IEC 16350:2015, *Information technology — Systems and software engineering — Application management*
- [57] ISO/IEC 19500-1:2012, *Information technology — Object Management Group — Common Object Request Broker Architecture (CORBA) — Part 1: Interfaces*
- [58] ISO/IEC 19500-2:2012, *Information technology — Object Management Group — Common Object Request Broker Architecture (CORBA) — Part 2: Interoperability*
- [59] ISO/IEC 19500-3:2012, *Information technology — Object Management Group — Common Architecture Request Broker Architecture (CORBA) — Part 3: Components*
- [60] ISO/IEC 19506:2012, *Information technology — Object Management Group Architecture-Driven Modernization (ADM) — Knowledge Discovery Meta-Model (KDM)*
- [61] ISO/IEC 19761:2011, *Software engineering — COSMIC: a functional size measurement method*
- [62] ISO/IEC 19770-1:2012, *Information technology — Software asset management — Part 1: Processes and tiered assessment of conformance*
- [63] ISO/IEC 19770-2:2015, *Information technology — Software asset management — Part 2: Software identification tag*
- [64] ISO/IEC 19770-3:2016, *Information technology — IT asset management — Part 3: Entitlement schema*
- [65] ISO/IEC 19770-5:2015, *Information technology — IT asset management — Part 5: Overview and vocabulary*
- [66] ISO/IEC 19793:2015, *Information technology — Open Distributed Processing — Use of UML for ODP system specifications*
- [67] ISO/IEC 20926:2009, *Software and systems engineering — Software measurement — IFPUG functional size measurement method 2009*
- [68] ISO/IEC 20968:2002, *Software engineering — Mk II Function Point Analysis — Counting Practices Manual*
- [69] ISO/IEC 2382:2015, *Information technology — Vocabulary*
- [70] ISO/IEC 24570:2005, *Software engineering — NESMA functional size measurement method version 2.1 — Definitions and counting guidelines for the application of Function Point Analysis*
- [71] ISO/IEC 24744:2014, *Software Engineering — Metamodel for development methodologies*
- [72] ISO/IEC 24773:2008, *Software engineering — Certification of software engineering professionals — Comparison framework*
- [73] ISO/IEC 25000:2014, *Systems and software Engineering — Systems and software product Quality Requirements and Evaluation (SQuaRE) — Guide to SQuaRE*
- [74] ISO/IEC 25001:2014, *Systems and software engineering — Systems and software product Quality Requirements and Evaluation (SQuaRE) — Planning and management*
- [75] ISO/IEC 25010:2011, *Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — System and software quality models*
- [76] ISO/IEC 25020:2007, *Software engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Measurement reference model and guide*
- [77] ISO/IEC 25021:2012, *Software engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Quality measure elements*

- [78] ISO/IEC 25023:2016, *Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Measurement of system and software product quality*
- [79] ISO/IEC 25024:2015, *Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Measurement of data*
- [80] ISO/IEC 25040:2011, *Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Evaluation process*
- [81] ISO/IEC 25041:2012, *Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Evaluation guide for developers, acquirers and independent evaluators*
- [82] ISO/IEC 25045:2010, *Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Evaluation module for recoverability*
- [83] ISO/IEC 25051:2014, *Software engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Requirements for quality of Ready to Use Software Product (RUSP) and instructions for testing*
- [84] ISO/IEC 25062:2006, *Software engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Common Industry Format (CIF) for usability test reports*
- [85] ISO/IEC 25063:2014, *Systems and software engineering — Systems and software product Quality Requirements and Evaluation (SQuaRE) Common Industry Format (CIF) for usability: Context of use description*
- [86] ISO/IEC 25064:2013, *Systems and software engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Common Industry Format (CIF) for usability: User needs report*
- [87] ISO/IEC 25066:2016, *Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Common Industry Format (CIF) for Usability — Evaluation Report*
- [88] ISO/IEC 26513:2009, *Systems and software engineering — Requirements for testers and reviewers of user documentation*
- [89] ISO/IEC 26514:2008, *Systems and software engineering — requirements for designers and developers of user documentation*
- [90] ISO/IEC 26550:2015, *Software and systems engineering — Reference model for product line engineering and management*
- [91] ISO/IEC 26551:2016, *Software and systems engineering — Tools and methods for product line requirements engineering*
- [92] ISO/IEC 26555:2015, *Software and systems engineering — Tools and methods for product line technical management*
- [93] ISO/IEC 29110-2-1:2015, *Software engineering — Lifecycle profiles for Very Small Entities (VSEs) — Part 2-1: Framework and taxonomy*
- [94] ISO/IEC 29155-1:2011, *Systems and software engineering — Information technology project performance benchmarking framework — Part 1: Concepts and definitions*
- [95] ISO/IEC 29155-2:2013, *Systems and software engineering — Information technology project performance benchmarking framework — Part 2: Requirements for benchmarking*
- [96] ISO/IEC 29155-3:2015, *Systems and software engineering — Information technology project performance benchmarking framework — Part 3: Guidance for reporting*
- [97] ISO/IEC 29881:2010, *Information technology — Software and systems engineering — FiSMA 1.1 functional size measurement method*
- [98] ISO/IEC 30103:2015, *Software and Systems Engineering — Lifecycle Processes — Framework for Product Quality Achievement*
- [99] ISO/IEC 30130:2016, *Software engineering — Capabilities of software testing tools*

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- [100] ISO/IEC 33001:2015, *Information technology — Process assessment — Concepts and terminology*
- [101] ISO/IEC 33003:2015, *Information technology — Process assessment — Requirements for process measurement frameworks*
- [102] ISO/IEC 33020:2015, *Information technology — Process assessment — Process measurement framework for assessment of process capability*
- [103] ISO/IEC 8631:1989, *Information technology — Program constructs and conventions for their representation*
- [104] ISO/IEC 90003:2014, *Software engineering — Guidelines for the application of ISO 9001:2008 to computer software*
- [105] ISO/IEC TR 12182:2015, *Systems and software engineering — Framework for categorization of IT systems and software, and guide for applying it*
- [106] ISO/IEC TR 14143-3:2003, *Information technology — Software measurement — Functional size measurement — Part 3: Verification of functional size measurement methods*
- [107] ISO/IEC TR 14143-4:2002, *Information technology — Software measurement — Functional size measurement — Part 4: Reference model*
- [108] ISO/IEC TR 14143-5:2004, *Information technology — Software measurement — Functional size measurement — Part 5: Determination of functional domains for use with functional size measurement*
- [109] ISO/IEC TR 14471:2007, *Information technology — Software engineering — Guidelines for the adoption of CASE tools*
- [110] ISO/IEC TR 14759:1999, *Software engineering — Mock up and prototype — A categorization of software mock up and prototype models and their use*
- [111] ISO/IEC TR 15846:1998, *Information technology — Software life cycle processes — Configuration Management*
- [112] ISO/IEC TR 18018:2010, *Information technology — Systems and software engineering — Guide for configuration management tool capabilities*
- [113] ISO/IEC TR 19759:2016, *Software Engineering — Guide to the Software Engineering Body of Knowledge (SWEBOK)*
- [114] ISO/IEC TR 24766:2009, *Information technology — Systems and software engineering — Guide for requirements engineering tool capabilities*
- [115] ISO/IEC TR 25060:2010, *Systems and software engineering — Systems and software product Quality Requirements and Evaluation (SQuARE) — Common Industry Format (CIF) for usability: General framework for usability-related information*
- [116] ISO/IEC TR 29110-1:2016, *Software engineering — Lifecycle profiles for Very Small Entities (VSEs) — Part 1: Overview*
- [117] ISO/IEC TR 29110-2-2:2011, *Systems and software engineering — Lifecycle profiles for Very Small Entities (VSEs) — Part 2-2: Guide for the development of domain-specific profiles*
- [118] ISO/IEC TR 29110-3-1:2015, *Systems and software engineering — Lifecycle profiles for Very Small Entities (VSEs) — Part 3-1: Assessment Guide*
- [119] ISO/IEC TR 29110-3-4:2015, *Systems and software engineering — Lifecycle profiles for Very Small Entities (VSEs) — Part 3-4: Autonomy-based improvement method*
- [120] ISO/IEC TR 29110-5-6-2:2014, *Systems and software engineering — Lifecycle profiles for Very Small Entities (VSEs) — Part 5-6-2: Systems engineering — Management and engineering guide: Generic profile group: Basic profile*
- [121] ISO/IEC TR 29154:2013, *Software engineering — Guide for the application of ISO/IEC 24773:2008 (Certification of software engineering professionals — Comparison framework)*
- [122] ISO/IEC TR 33014:2013, *Information technology — Process assessment — Guide for process improvement*

- [123] ISO/IEC TR 90005:2008, *Systems engineering — Guidelines for the application of ISO 9001 to system life cycle processes*
- [124] ISO/IEC TS 15504-10:2011, *Information technology — Process assessment — Part 10: Safety extension*
- [125] ISO/IEC TS 24748-1:2016, *Systems and software engineering — Life cycle management — Part 1: Guide for life cycle management*
- [126] ISO/IEC/IEEE 15288:2015, *Systems and software engineering — System life cycle processes*
- [127] ISO/IEC/IEEE 15289:2015, *Systems and software engineering — Content of life-cycle information products (documentation)*
- [128] ISO/IEC/IEEE 15939:2017, *Systems and software engineering — Measurement process*
- [129] ISO/IEC/IEEE 16326:2009, *Systems and software engineering — Life cycle processes — Project management*
- [130] ISO/IEC/IEEE 23026:2015, *Systems and software engineering — Engineering and management of websites for systems, software, and services information*
- [131] ISO/IEC/IEEE 24748-4:2016, *Systems and software engineering — Life cycle management-Part 4: Systems engineering planning*
- [132] ISO/IEC/IEEE 26511:2011, *Systems and software engineering — Requirements for managers of user documentation*
- [133] ISO/IEC/IEEE 26512:2011, *Systems and software engineering — Requirements for acquirers and suppliers of user documentation*
- [134] ISO/IEC/IEEE 26515:2011, *Systems and software engineering: Developing user documentation in an agile environment*
- [135] ISO/IEC/IEEE 29119-1:2013, *Software and systems engineering — Software testing — Part 1: Concepts and definitions*
- [136] ISO/IEC/IEEE 29119-2:2013, *Software and systems engineering — Software testing — Part 2: Test processes*
- [137] ISO/IEC/IEEE 29119-3:2013, *Software and systems engineering — Software testing — Part 3: Test documentation*
- [138] ISO/IEC/IEEE 29119-4:2015, *Software and systems engineering — Software testing — Part 4: Test techniques*
- [139] ISO/IEC/IEEE 29148:2011, *Systems and software engineering — Life cycle processes — Requirements engineering*
- [140] ISO/IEC/IEEE 42010:2011, *Systems and software engineering — Architecture description*
- [141] Project Management Institute (PMI) and IEEE Computer Society. *Software Extension to the PMBOK® Guide Fifth Edition*

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Abstract: This document provides a common vocabulary applicable to all systems and software engineering work. It was prepared to collect and standardize terminology. This document 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. This document includes references to the active source standards for definitions so that systems and software engineering concepts and requirements can be further explored.

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