SÜSTEEMI- JA TARKVARATEHNIKA
Elutsükli infosaaduste (dokumentatsiooni) sisu

Systems and software engineering
Content of life-cycle information products (documentation)
(ISO/IEC/IEEE 15289:2011)

EVS

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

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NATIONAL FOREWORD

See Eesti standard EVS-ISO/IEC/IEEE 15289:2013 „Süsteemi- ja tarkvaratehnika. Elutsükli infosaaduste (dokumentatsiooni) sisu“ sisaldab rahvusvahelise standardi ISO/IEC/IEEE 15289:2011 „Systems and software engineering -- Content of life-cycle information products (documentation)“ identset ingliskeelset teksti.	This Estonian Standard EVS-ISO/IEC/IEEE 15289:2013 consists of the identical English text of the International Standard ISO/IEC/IEEE 15289:2011 „Systems and software engineering -- Content of life-cycle information products (documentation)“.
Ettepaneku rahvusvahelise standardi ümbertrüki meetodil ülevõtuks on esitanud EVS/TK 4, standardi avaldamist on korraldanud Eesti Standardikeskus.	Proposal to adopt the International Standard by reprint method has been presented by EVS/TK 4, the Estonian standard has been published by the Estonian Centre for Standardisation.
Standard EVS-ISO/IEC/IEEE 15289:2013 on jõustunud sellekohase teate avaldamisega EVS Teataja 2013. aasta detsembrikuu numbris.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Käsitlusala

See standard spetsifitseerib süsteemide ja tarkvara elutsükli kõigi piiritletud infoüksuste ning infotehnoloogiliste teenuste halduseks vajalike infoüksuste (dokumentatsiooni) otstarbe ja sisu. Infoüksuste sisu määratletakse vastavalt üldistuslikele dokumenditüüpidele, mis on esitatud peatükis 7, ja dokumendi konkreetsele otstarbele (peatükk 10).

See standard eeldab, et organisatsioon rakendab elutsükli protsesse vastavalt standardile ISO/IEC 15288:2008 (IEEE Std 15288-2008) „Systems and software engineering — System life cycle processes“ või ISO/IEC 12207:2008 (IEEE Std 12207-2008) „Systems and software engineering — Software life cycle processes, või sooritab teenusehaldust vastavalt standarditele ISO/IEC 20000-1:2005. Information technology — Service management — Part 1: Specification“ ja ISO/IEC 20000-2:2005 „Information technology — Service management — Part 2: Code of practice“. ISO/IEC 12207:2008 (IEEE Std 12207-2008) ja ISO/IEC 15288:2008 (IEEE Std 15288-2008) määratlevad ühe protsessikogumi, millega hallata ja sooritada süsteemi elutsükli järke. Need määratlevad teabehalduse protsessi, kuid nad ei „detailiseeri dokumentatsiooni selle nimetuste, vormingu, otsese sisu ja talletava infokandja mõttes“ [ISO/IEC 15288:2008 (IEEE Std 15288-2008), 1.4)]. ISO/IEC 12207:2008 (IEEE Std 12207-2008) rajab elutsükli protsessidele ühe ühise karkassi ning piiritleb seejuures rea dokumentatsiooniüksusi või nõuab neid. Protsessi etalonmudel ei esinda mingit kindlat lähenemisviisi protsessi teostamisele ega kirjuta ette mingit süsteemi või tarkvara elutsükli mudelit, metoodikat ega meetodit. ISO/IEC 20000-1:2005 kehtestab üldised nõuded dokumentidele ja andmikele (3.2). ISO/IEC 12207:2008 (IEEE Std 12207-2008) ei täpsusta alati, millal tuleb koostada tarkvara infoüksused ega piiritle infoüksuste sisu. See standard seab ISO/IEC 15288:2008 (IEEE Std 15288-2008) ja ISO/IEC 12207:2008 (IEEE Std 12207-2008) jaotised vastavusse ühe infoüksuste kogumiga.

Üldistuslikke dokumenditüüpe (mida võib nimetada infoüksuste tüüpideks) tuleb kasutada sellise teabe piiritlemiseks, mida vajatakse ISO/IEC 15288:2008 (IEEE Std 15288-2008) leppe-, ettevõtte-, projekti- ja tehniliste protsesside, ISO/IEC 12207:2008 (IEEE Std 12207-2008) primaar-, abi- ja organisatsiooniliste elutsükliprotsesside või ISO/IEC 20000-1:2005 teenusehalduse protsesside toetuseks.

See standard piiritleb andmikud ja infoüksused ISO/IEC 15288:2008 (IEEE Std 15288-2008), ISO/IEC 12207:2008 (IEEE Std 12207-2008), ISO/IEC 20000-1:2005 ja ISO/IEC 20000-2:2005 viidete analüüsi põhjal; mõnedel juhtudel pakuvad need viited konkreetsete dokumentide sisu täielikke või osalisi visandeid. Nõuded elutsükli protsessidele ei sõnasta aga üheselt ja ühemõtteliselt nõudeid infoüksuse sisule ega teabele, mida vajab infoüksuse kasutaja. Peale selle võib elutsükli protsessidest pärit teave osaliselt kattuda või see võidakse luua ja läbi vaadata eri aegadel. Ühesõnaga ei anna analüüsitud viited tulemuseks infoüksuste loogiliselt täielikku loetelu.

Eesti

Elutsükli iga protsessi puhul oleks võimalik koostada plaani, protseduure ja aruandeid, samuti rohkeid andmikke, taotlusi, kirjeldusi ja spetsifikatsioone. Niisugune dokumentatsiooniskeemi detailiseering oleks rangem sellest, mida spetsifitseerib ISO/IEC 15288:2008 (IEEE Std 15288-2008) või ISO/IEC 12207:2008 (IEEE Std 12207-2008). Nagu rõhutab ISO/IEC 15288:2008 (IEEE Std 15288-2008) (jaotis 1.4): „See standard ei detailiseeri elutsükli protsesse neile esitatavate nõuete rahuldamiseks ja tulemite saavutamiseks vajalike meetodite ega protseduuride mõttes.“ Niisiis võib infoüksusi vastavalt projekti või organisatsiooni eesmärkidest tulenevatele vajadustele ühendada või tükeldada; lähemalt on seda käsitletud peatükis 2 („Rakendatavus“) ja peatükis 3 („Vastavus“).

Selle standardi käsitlusalasse ei kuulu:

a) soovitatavate lähteandmete või lähte-infoüksuste vorming või sisu, välja arvatud niisuguste lähteüksuste sisu, mis on ühtlasi tulem-infoüksused;

b) loomult sarnaste infoüksuste ja nende sisu ühendamise või tükeldamise juhised;

c) süsteemi ja tarkvara elutsükli andmete, andmike, infoüksuste või dokumentatsiooni sobiva esitusvormingu, väljastuskandja ja hooldustehnoloogia, näiteks elektroonilise kirjastamise süsteemide, sisuhalduse süsteemide või andmehoidlate valimise juhised;

d) äritegevuse, organisatsiooni ja rahanduse üldise haldusega seotud infoüksuste detailne sisu, mis ei ole spetsiifiline süsteemi- ja tarkvaratehnikale ega infotehnoloogia teenusehaldusele, näiteks äristrateegiad, inimressursi- ja investeerimispoliitikad, personali valimise kriteeriumid, eelarvestuse ja rahalise arvestuse poliitikad ja protseduurid, kuluaruanded või palgaandmed;

e) infoüksused, mis tõendavad ainult ISO/IEC 12207:2008 (IEEE Std 12207-2008) ühe sätte, näiteks ISO/IEC 12207:2008 (IEEE Std 12207-2008), sätte 6.1.2.3.4.5 järgimist;

f) ükski ISO/IEC 15288:2008 (IEEE Std 15288-2008) või ISO/IEC 12207:2008 (IEEE Std 12207-2008) säte, mis ei määra otseselt ega kaudselt teabe jäädvustamist mingi tegevuse või töö kohta, näiteks ISO/IEC 12207:2008 (IEEE Std 12207-2008) säte 6.4.4;

g) töösaadused, mudelid, tarkvara ning muud elutsükli saaduste ja teenuste tehised, mis ei ole infoüksused ega infoüksustes kasutatavad andmikud.

MÄRKUS 1 Tarkvara kasutajadokumentatsiooni vormingute kohta annab juhiseid ISO/IEC 26514:2008 „Systems and software engineering — Requirements for designers and developers of user documentation“.

MÄRKUS 2 Töösaaduste ja infoüksuste sisu detailiseerib ISO/IEC TR 15504-5:1999 „Information technology — Software Process Assessment — Part 5: An assessment model and indicator guidance“. Selle juhised kirjeldavad infoüksuste (dokumentide) kogumit, millega hindajal tuleb võib-olla tegemist teha. Nendes juhistes nimetatud infoüksusi võidakse luua selles standardis nõutavaid infoüksusi ühendades ja tükeldades.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 35.080

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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 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 15289 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, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

This first edition of ISO/IEC/IEEE 15289 cancels and replaces ISO/IEC 15289:2006, which has been technically revised.

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Introduction

The purpose of this International Standard is to provide requirements for identifying and planning the specific information items (information products) to be developed and revised during systems and software life cycles and service processes. This International Standard specifies the purpose and content of all identified systems and software life-cycle information items, as well as information items for information technology service management. The information item contents are defined according to generic document types and the specific purpose of the document. Information items may be combined or subdivided as needed for project or organizational purposes.

This International Standard is based on the life-cycle processes specified in ISO/IEC 12207:2008 (IEEE Std 12207-2008), *Systems and software engineering — Software life cycle processes*; ISO/IEC 15288:2008 (IEEE Std 15288-2008), *Systems and software engineering — System life cycle processes*; and the service management processes specified in ISO/IEC 20000-1:2005, *Information technology — Service management — Part 1: Specification*; and ISO/IEC 20000-2:2005, *Information technology — Service management — Part 2: Code of practice.*

IEEE contributed IEEE 12207.1-1997, *Industry Implementation of International Standard ISO/IEC 12207:1995. (ISO/IEC 12207) Standard for Information Technology — Software life cycle processes — Life cycle data*, as a source for this International Standard.

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Systems and software engineering — Content of life-cycle information products (documentation)

1 Scope

This International Standard specifies the purpose and content of all identified systems and software life-cycle and service management information items (documentation). The information item contents are defined according to generic document types, as presented in Clause 7, and the specific purpose of the document (Clause 10).

This International Standard assumes an organization is implementing life-cycle processes in conformance with ISO/IEC 15288:2008 (IEEE Std 15288-2008), *Systems and software engineering — System life cycle processes*, or ISO/IEC 12207:2008 (IEEE Std 12207-2008), *Systems and software engineering — Software life cycle processes*, or practising service management in conformance with ISO/IEC 20000-1:2005, *Information technology — Service management — Part 1: Specification*, and ISO/IEC 20000-2:2005, *Information technology — Service management — Part 2: Code of practice.* ISO/IEC 12207:2008 (IEEE Std 12207-2008) and ISO/IEC 15288:2008 (IEEE Std 15288-2008) define a set of processes for managing and performing the stages of a systems life cycle. They define an Information Management process, but they do "not detail documentation in terms of name, format, explicit content, and recording media" [ISO/IEC 15288:2008 (IEEE Std 15288-2008), 1.4)]. ISO/IEC 12207:2008 (IEEE Std 12207-2008) establishes a common framework for software life-cycle processes and in passing identifies or requires a number of documentation items. The Process Reference Model does not represent a particular process implementation approach, nor does it prescribe a system/software life-cycle model, methodology, or technique. ISO/IEC 20000-1:2005 establishes general requirements for documents and records (3.2). ISO/IEC 12207:2008 (IEEE Std 12207-2008) does not always specify when software information items are to be prepared, nor does it identify information item contents. This International Standard provides a mapping of ISO/IEC 15288:2008 (IEEE Std 15288-2008) and ISO/IEC 12207:2008 (IEEE Std 12207-2008) clauses with a set of information items.

The generic document types (which may be referred to as information item types) are to be used to identify the information necessary to support the ISO/IEC 15288:2008 (IEEE Std 15288-2008) agreement, enterprise, project, and technical processes; the ISO/IEC 12207:2008 (IEEE Std 12207-2008), primary, supporting, and organizational life-cycle processes; or the ISO/IEC 20000-1:2005 service management processes.

This International Standard identifies records and information items based on analysis of references in ISO/IEC 15288:2008 (IEEE Std 15288-2008), ISO/IEC 12207:2008 (IEEE Std 12207-2008), ISO/IEC 20000-1:2005 and ISO/IEC 20000-2:2005, which in some cases provide partial or complete outlines for the content of specific documents. However, the requirements for the life-cycle processes do not uniquely and unambiguously state the requirements for the information item contents or the information needed by a user of an information item. Moreover, the information from the life-cycle processes may overlap or may be created and revised at different times. In short, the analysed references do not result in a logically complete list of information items.

For each life-cycle process, it would be possible to prepare a plan, procedures, and reports, as well as numerous records, requests, descriptions and specifications. Such an elaboration of the documentation schema would be more rigorous than specified by ISO/IEC 15288:2008 (IEEE Std 15288-2008) or ISO/IEC 12207:2008 (IEEE Std 12207-2008). As ISO/IEC 15288:2008 (IEEE Std 15288-2008) points out (1.4), "This International Standard does not detail the life-cycle processes in terms of methods or procedures required to meet the requirements and outcomes of a process." Thus, information items may be combined or subdivided as needed for project or organizational purposes, as further defined in Clause 2, Applicability, and Clause 3, Conformance.

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Not included in the scope of this International Standard are the following:

a) the format or content of recommended input data or input information items, except for the content of those input items that are also output information items;

b) instructions on combining or subdividing information items and information item contents of a similar nature;

c) guidance on selecting an appropriate presentation format, delivery media, and maintenance technology for system and software life-cycle data, records, information items, or documentation, such as electronic publishing systems, content management systems, or data repositories;

d) detailed content for information items related to general business, organizational, and financial management that is not specific to systems and software engineering and information technology service management, such as business strategies, human resources and investment policies, personnel selection criteria, financial budgeting and accounting policies and procedures, cost reports, or payroll data;

e) information items showing only approval of an ISO/IEC 12207:2008 (IEEE Std 12207-2008) subclause, such as ISO/IEC 12207:2008 (IEEE Std 12207-2008), 6.1.2.3.4.5;

f) any ISO/IEC 15288:2008 (IEEE Std 15288-2008) or ISO/IEC 12207:2008 (IEEE Std 12207-2008) subclause not explicitly or implicitly identifying the recording of information about an activity or task, for example, ISO/IEC 12207:2008 (IEEE Std 12207-2008), 6.4.4;

g) work products, models, software, and other artifacts of the life-cycle products and services that are not information items or records used in information items.

NOTE 1 ISO/IEC 26514:2008, *Systems and software engineering — Requirements for designers and developers of user documentation*, provides guidance on formats for software user documentation.

NOTE 2 ISO/IEC TR 15504-5:1999, *Information technology — Software Process Assessment — Part 5: An assessment model and indicator guidance*, details the content of work products as well as information items. Its guidance includes descriptions of a set of information items (documents) that an assessor may encounter. The information items in its guidance may be produced by combinations and subdivisions of the required information items in this International Standard.

2 Applicability

2.1 Purpose

The purpose of this International Standard is to provide requirements for users of ISO/IEC 12207:2008 (IEEE Std 12207-2008), ISO/IEC 15288:2008 (IEEE Std 15288-2008) and ISO/IEC 20000-1:2005 for identifying and planning the specific information items (information products) to be developed and revised during systems and software life cycles and service processes. This International Standard is intended for use as follows.

a) To address the technical information needed by those involved in ISO/IEC 15288:2008 (IEEE Std 15288-2008) and ISO/IEC 12207:2008 (IEEE Std 12207-2008) processes.

b) To specify information in an agreement process as described in ISO/IEC 15288:2008 (IEEE Std 15288-2008) or a two-party situation as described in ISO/IEC 12207:2008 (IEEE Std 12207-2008), ISO/IEC 20000-1:2005 and ISO/IEC 20000-2:2005. The two-party situation may range from an informal agreement within an organization to a legally binding contract between organizations.

c) To develop information items that provide evidence for process assessment performed with respect to ISO/IEC 15504, and to guide process improvement activities.

d) To guide a single party in self-imposed tasks.

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2.2 Intended users of this International Standard

This International Standard is applicable for use by:

a) project managers responsible for the Information Management process of ISO/IEC 15288:2008 (IEEE Std 15288-2008) (5.4.8) during a system life cycle;

b) project managers responsible for identifying information item requirements and document contents when using ISO/IEC 12207:2008 (IEEE Std 12207-2008), or any other software engineering life-cycle process, to help determine what should be documented, when the documentation should occur, and what the contents of the documents should be;

c) acquirers responsible for determining what information items are needed to ensure the quality of the project, or delivered system, product or service;

d) individuals who write or support the design and development of service, systems and software information items;

e) individuals responsible for identifying information items required to claim conformance with ISO/IEC 12207:2008 (IEEE Std 12207-2008), ISO/IEC 15288:2008 (IEEE Std 15288-2008), or ISO/IEC 20000-1:2005;

f) individuals undertaking service, system or software process improvement in their organizations.

2.3 Applicability to work efforts

Use of this International Standard is not limited by size, complexity or criticality of the project. It may be applied to:

a) any type of project and life-cycle process;

b) any of the activities and tasks of a project and system or software product or service life cycle;

c) all forms of information items, information item content and document delivery media;

d) documentation in Commercial-Off-The-Shelf (COTS) products when the COTS product is specified as a deliverable under a two-party situation.

NOTE See ISO/IEC 12207:2008 (IEEE Std 12207-2008), 1.2.

2.4 Applicability to information item audiences

Users should map this International Standard to the requirements and needs of their agreements, or project and organizational procedures. The type of decision to be made, or work to be performed, by users of the information should be considered before an information item is prepared. Reviewing and understanding the requirements, needs, and background of users and stakeholders are essential to applying this International Standard accurately and economically, since some information items are designed for various purposes and user groups:

- To provide information to specialized types of users who may not be a part of a particular project.
- To address the same type of user but in environments not normally coexisting in the same effort.
- To aid both users who are expected to be computer-literate and understand technical terminology, and users who may not have this background.

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3 Conformance

3.1 Definition of conformance

This International Standard may be used as a conformance or a guidance document for projects and organizations claiming conformance to ISO/IEC 15288:2008 (IEEE Std 15288-2008), ISO/IEC 12207:2008 (IEEE Std 12207-2008), or ISO/IEC 20000-1:2005.

NOTE 1 Service providers should refer to ISO/IEC 20000-1:2005 and ISO/IEC TR 20000-5:2010 regarding claims of conformance for a defined certification scope, for example, organizational units, services, location.

To claim conformance to this International Standard, having tailored the selected system or software life-cycle processes, the users of this International Standard shall prepare the information items identified in this International Standard applicable to the selected and tailored ISO/IEC 15288:2008 (IEEE Std 15288-2008), ISO/IEC 12207:2008 (IEEE Std 12207-2008), or ISO/IEC 20000-1:2005 processes.

The generic and specific record and information item contents in Clauses 7, 9, and 10 of this International Standard may be tailored to satisfy requirements of an organization, its projects, or agreements based on the tailored conformance to ISO/IEC 15288:2008 (IEEE Std 15288-2008) or ISO/IEC 12207:2008 (IEEE Std 12207-2008). In tailoring, information item titles and contents provided in this International Standard may be modified (added to, combined or retitled). The contents of the information items shall correspond to the selected and tailored processes.

NOTE 2 Annex A of ISO/IEC 15288:2008 (IEEE Std 15288-2008) and ISO/IEC 12207:2008 (IEEE Std 12207-2008) provide requirements for the Tailoring Process.

In this International Standard, for simplicity of reference, each information item is described as if it were published as a separate document. However, information items shall be considered as conforming if they are unpublished but available in a repository for reference, divided into separate documents or volumes, or combined with other information items into one document. Use of the nomenclature of the specific records in Clause 9 or the information item titles in Clause 10 is not required to claim conformance with this International Standard.

Throughout this International Standard, “shall” is used to express a provision that is normative, “should” to express a recommendation among other possibilities, and “may” to indicate a course of action permissible within the limits of this International Standard.

The verb “include” used in this International Standard indicates that either (1) the information is present or (2) a reference to the information is listed.

3.2 Conformance situations

Conformance may be claimed for organizations, projects, multi-supplier projects, services, and information items, as identified in the claim of conformance:

a) When conformance is claimed for an organization or a service provider, the organization or service provider shall make public a document declaring its tailoring of the records and information items, and its interpretation of any clauses of the standard that reference “the contract”.

b) When conformance is claimed for a project (or program), the project plans or the contract shall document the tailoring of the records and information items, and the interpretation of any clauses of the standard that reference “the contract”.

c) When conformance is claimed for multi-supplier projects, it may be the case that no individual project can claim conformance because no single contract calls for all the required records and information items. Nevertheless, the projects, as a whole, may claim conformance if each of the required records and information items is produced by an identified party. The program plans shall document the tailoring of the records and information items, and their assignment to the various parties, as well as the interpretation of any clauses of the standard that reference “the contract”.

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d) When conformance is claimed for an information item, the item shall contain the generic contents required in Clause 7 of this International Standard and the specific content required in Clause 10.

NOTE 1 One possible way for an organization to deal with clauses that cite “the contract” is to specify that they shall be interpreted in the project plans for any particular project. A project’s claim of conformance is typically specified with respect to the organization’s claim of conformance.

NOTE 2 In accordance with ISO/IEC 17000:2004, *Conformity assessment — Vocabulary and general principles,* an organization or a project or a multi-supplier program may be said to comply with this document when its products (the information items) fulfil the requirements, but the organization, project or program has not met the specific requirements for conformance stated in items (a), (b) or (c) above.

3.3 Type of conformance

One of the following types of conformance shall be asserted. The selected type shall be identified in the claim of conformance:

a) Tailored: The minimum set of required information items is determined by tailoring of processes and activities in accordance with Annex A of ISO/IEC 12207:2008 (IEEE Std 12207-2008) or Annex A of ISO/IEC 15288:2008 (IEEE Std 15288-2008).

b) Absolute: The minimum set of required information items is all of those specified as normative (that is, clauses containing “shall”) in the text of the normative reference standards.

NOTE Absolute conformance may be claimed for selected processes or information items even if absolute conformance with the entire standard is not claimed.

4 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies.

ISO/IEC 12207:2008 (IEEE Std 12207-2008), *Systems and software engineering — Software life cycle processes*

ISO/IEC 15288:2008 (IEEE Std 15288-2008), *Systems and software engineering — System life cycle processes*

ISO/IEC 20000-1:2005, *Information technology — Service management — Part 1: Specification*

ISO/IEC/IEEE 24765:2010, *Systems and software engineering — Vocabulary*

5 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 12207:2008 (IEEE Std 12207-2008), ISO/IEC/IEEE 24765:2010 and the following apply.

5.1
approval
written notification, by an authorized representative, that a deliverable item appears to satisfy requirements and is complete

NOTE Such approval does not shift responsibility from the supplier to meet requirements under a two-party situation.

5.2
complete [documentation]
including all critical information and any necessary, relevant information for the intended audience

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