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# ISO/IEC/IEEE 15289

Fourth edition
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# Systems and software engineering — Content of life-cycle information items (documentation)

*Ingénierie des systèmes et du logiciel — Contenu des articles d'information du cycle de vie (documentation)*



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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.

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 rules given in the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. The IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While the IEEE administers the process and establishes rules to promote fairness in the consensus development process, the IEEE does not independently evaluate, test, or verify the accuracy of any of the information contained in its standards.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC 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 of 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 www.iso.org/iso/foreword.html.

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

This fourth edition cancels and replaces the third edition (ISO/IEC/IEEE 15289:2017), which has been technically revised.

The main changes compared to the previous edition are as follows:

— made changes to reflect ISO/IEC/IEEE 12207:2017, which replaces ISO/IEC 12207:2008;

— removed references to ISO/IEC 20000-1:2011 and ISO/IEC 20000-2:2012, which are no longer within the scope of ISO/IEC JTC 1/SC 7 and have been superseded.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these national standards bodies can be found at www.iso.org/members.html.

# Introduction

The purpose of this document 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 document 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 are combined or subdivided as needed for project or organizational purposes.

This document is based on the life-cycle processes specified in ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015. ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015 establish a common framework for system and software life-cycle processes. These standards define an identical process model for the process purposes and outcomes, though their tasks and activities differ. Their process reference model does not represent a particular process implementation approach, nor does it prescribe a system/software life-cycle model, methodology or technique. Their processes are grouped in four categories: agreement, organizational project-enabling, technical management and technical.

ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015 establish a common Information Management process as part of a framework for systems and software life-cycle processes, and identify, recommend or require a number of information items (documentation). ISO/IEC/IEEE 12207:2017 does not always specify when software information items are to be prepared, nor does it identify information item contents. This document is intended to be used in this context. IEEE contributed IEEE 12207.1-1997[1)] as a source for the first edition of this document.



1) *Guide for Information Technology — Software Life Cycle Processes — Life Cycle Data.*

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

## 1 Scope

This document 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, as presented in Clause 10.

This document assumes an organization is performing life-cycle processes, or delivering system or software engineering services, using either or both of the following:

— ISO/IEC/IEEE 12207:2017 software life cycle processes;

— ISO/IEC/IEEE 15288:2015 system life cycle processes.

ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015 define an Information Management process, but do not "detail information items in terms of name, format, explicit content, and recording media" (ISO/IEC/IEEE 12207:2017, 1.4). These standards identify, recommend or require a number of documentation items. This document provides a mapping of processes from the above standards to a set of information items. It provides a consistent approach to meeting the information and documentation requirements of systems and software engineering and engineering service management.

The generic document types defined in this document are used to identify the information necessary to support the processes required by ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015. The generic document types (which can be referred to as information item types) are used to identify the information necessary to support the processes.

For each life-cycle process or service, it would be possible to prepare a policy, 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/IEEE 12207:2017 or ISO/IEC/IEEE 15288:2015. As ISO/IEC/IEEE 15288:2015, 1.4 points out, "The users of this document are responsible for selecting a life cycle model for the project and mapping the processes, activities, and tasks in this document into that model. The parties are also responsible for selecting and applying appropriate methodologies, methods, models and techniques suitable for the project." Thus, information items are combined or subdivided consistent with the life cycle model, as needed for project or organizational purposes, as further defined in Clause 4 and Clause 5.

This document is not a management system standard and does not establish a service management system, quality management system, or asset management system. The scope of this document does not include 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 systems or software life-cycle data, records, information items or documentation, such as electronic publishing systems, content management systems or data repositories;

NOTE ISO/IEC/IEEE 26531 provides requirements for content management and component content management systems. ISO/IEC 26514 provides guidance on formats for user documentation (information for users).

d) detailed content for information items related to general business, contractual, organizational and financial management that is not specific to systems and software engineering and engineering service management, such as business strategies, contract change notices (agreement change report), 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/IEEE 12207:2017 or ISO/IEC/IEEE 15288:2015 subclause, such as ISO/IEC/IEEE 12207:2017, 6.4.10.3 c) 3);

f) any ISO/IEC/IEEE 15288:2015 or ISO/IEC/IEEE 12207:2017 subclause not explicitly or implicitly identifying the recording of information about a process, activity or task, for example, ISO/IEC/IEEE 12207:2017, 6.2.4.3 c);

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

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC/IEEE 12207:2017, *Systems and software engineering — Software life cycle processes*

ISO/IEC/IEEE 15288:2015, *Systems and software engineering — System life cycle processes*

## 3 Terms, definitions and abbreviated terms

### 3.1 Terms and definitions

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

NOTE For additional terms and definitions in the field of systems and software engineering, see ISO/IEC/IEEE 24765, which is published periodically as a "snapshot" of the SEVOCAB (Systems and software Engineering Vocabulary) database and is publicly accessible at www.computer.org/sevocab.

ISO, IEC, and IEEE maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/

— IEC Electropedia: available at http://www.electropedia.org/

— IEEE Standards Dictionary Online: available at http://ieeexplore.ieee.org/xpls/dictionary.jsp

**3.1.1**
**approval**
notification by an authorized representative that a deliverable item appears to satisfy requirements and is *complete* (3.1.3)

Note 1 to entry: Such approval does not shift responsibility from the supplier to meet requirements under a two-party situation.

**3.1.2**
**complaint**
*record* (3.1.21) of perceived non-compliance with a service level agreement or customer dissatisfaction with service

**3.1.3**
**complete**
<documentation> including all *critical information* (3.1.7) and any necessary, relevant information for the intended audience

**3.1.4**
**consistent**
without internal conflicts

**3.1.5**
**Commercial-Off-The-Shelf**
**COTS**
product available for purchase and use without the need to conduct development activities

**3.1.6**
**criteria**
rules on which a judgment or decision can be based, or by which a product, service, result, or *process* (3.1.20) can be evaluated

**3.1.7**
**critical information**
information describing the safe use of the system, the security of the information created with the system, or the protection of the sensitive personal information created by or stored with the system

**3.1.8**
**database**
collection of data organized according to a conceptual structure describing the characteristics of the data and the relationships among their corresponding entities, supporting one or more application areas

**3.1.9**
**description**
*information item* (3.1.12) that represents a planned or actual concept, function, design, or object

**3.1.10**
**document**
uniquely identified unit of information for human use

EXAMPLE A *report* (3.1.22), *specification* (3.1.26), manual or book, in printed or electronic form.

Note 1 to entry: A document can be a single information item or part of a larger information item.

**3.1.11**
**include**
<information> has either the information or a reference to the information

**3.1.12**
**information item**
**information product**
separately identifiable body of information that is produced, stored, and delivered for human use

Note 1 to entry: A *document* (3.1.10) produced to meet information requirements can be an information item, part of an information item, or a combination of several information items.

Note 2 to entry: An information item can be produced in several versions during a project or system life cycle.

**3.1.13**
**information item content**
information included in an *information item* (3.1.12), associated with a system, product or service, to satisfy a requirement or need

**3.1.14**
**information item type**
generic document type
group of i*nformation items* (3.1.12) *consistent* (3.1.4) with a pre-arranged set of generic *criteria* (3.1.6)

EXAMPLE A "plan" is the information item type for all *plans* (3.1.16) and "report" is the information item type for all *reports* (3.1.22).

**3.1.15**
**modifiable**
structured and having a style such that changes can be made completely, consistently, and correctly while retaining the structure

**3.1.16**
**plan**
*information item* (3.1.12), that presents a systematic course of action for achieving a declared purpose, including when, how, and by whom specific activities are to be performed

**3.1.17**
**policy**
clear and measurable statement of preferred direction and behavior to condition the decisions made within an organization

**3.1.18**
**presentable**
retrievable and viewable

**3.1.19**
**procedure**
*information item* (3.1.12) that presents an ordered series of steps to perform a *process* (3.1.20), activity, or task

Note 1 to entry: A procedure defines an established and approved way or mode of conducting business in an organization. It details permissible or recommended methods in order to achieve technical or managerial goals or outcomes.

Note 2 to entry: According to ISO 9000, procedures can be documented or not.

**3.1.20**
**process**
set of interrelated or interacting activities which transforms inputs into outputs

**3.1.21**
**record**
set of related data items treated as a unit

**3.1.22**
**report**
*information item* (3.1.12) that describes the results of activities such as investigations, observations, assessments, or tests

**3.1.23**
**request**
*information item* (3.1.12), that initiates a defined course of action or change to fulfil a need

**3.1.24**
**service request**
*request* (3.1.23) for information or for a routine change or *procedure* (3.1.19) with previously evaluated risk

EXAMPLE A request to provide access to a controlled application, a request to move hardware.

**3.1.25**
**software item**
identifiable part of a software product

EXAMPLE Identification and *descriptions* (3.1.9) of the software product, source code, software life-cycle data, archive and release data, and instructions for building the executable object code.

**3.1.26**
**specification**
*information item* (3.1.12), that identifies, in a *complete* (3.1.3) precise, and *verifiable* (3.1.29) manner, the requirements, design, behavior, or other expected characteristics of a system, service, or *process* (3.1.20)

**3.1.27**
**traceable**
having components whose origin can be determined

**3.1.28**
**unambiguous**
described in terms that allow only a single interpretation, aided, if necessary, by a definition

**3.1.29**
**verifiable**
can be checked for correctness by a person or tool

## 3.2 Abbreviated terms

| | |
|---|---|
| CFP | call for proposals |
| CM | configuration management |
| CONOPS | concept of operations |
| COOP | continuity of operations plan |
| ITT | invitation to tender |
| OPSCON | operational concept |
| RFP | request for proposal |
| SLA | service level agreement |

# 4 Applicability

## 4.1 Purpose

The purpose of this document is to provide requirements for users of ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015 for identifying and planning the specific information items (information products) to be developed and revised during systems and software life cycles and service management. This document is intended for use as follows:

a) to address the technical information needed by those involved in ISO/IEC/IEEE 15288:2015 and ISO/IEC/IEEE 12207:2017 processes;

b) to specify information in an agreement process or two-party situation as described in ISO/IEC/IEEE 15288:2015 or ISO/IEC/IEEE 12207:2017. 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 33001, and to guide process improvement activities; and

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

## 4.2 Intended users of this document

This document is applicable for use by the following:

a) project managers responsible for the Information Management process of ISO/IEC/IEEE 12207:2017, 6.3.6 and ISO/IEC/IEEE 15288:2015, 6.3.6 during a system life cycle (including software systems);

b) project managers responsible for identifying information item requirements and document contents when using ISO/IEC/IEEE 12207:2017, or any other software engineering life-cycle process, to help determine what should be documented, when the documentation should be developed, and what the contents of the documents should be;

c) acquirers responsible for determining what information items are needed to help 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/IEEE 12207:2017 or ISO/IEC/IEEE 15288:2015, and

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

## 4.3 Applicability to work efforts

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

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; and

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

## 4.4 Applicability to information item audiences

Users of this document should determine the relationship of the requirements in this document to the requirements and needs of their audience (customers or users of information), or project and organizational procedures. The type of decision to be made, or the 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 document accurately and economically, since some information items are designed for various purposes and user groups:

a) to provide information to specialized types of users who may not be a part of a particular project;

b) to address the same type of user but in environments not normally coexisting in the same effort; and

c) to aid both users who are expected to understand technical concepts and terminology, and users who may not have this background.

# 5 Conformance

## 5.1 Definition of conformance

This document may be used as a conformance or a guidance document for projects and organizations claiming conformance to ISO/IEC/IEEE 15288:2015 or ISO/IEC/IEEE 12207:2017.

NOTE 1 Service providers can refer to ISO/IEC 20000-1 and ISO/IEC 20000-3 regarding claims of conformance for a defined certification scope, for example, organizational units, services, location.

If the selected systems or software life-cycle processes have been tailored in conformance with ISO/IEC/IEEE 15288 or ISO/IEC/IEEE 12207, to claim conformance to this document, the user of this document shall prepare the information items identified in this document applicable to the selected and tailored processes of ISO/IEC/IEEE 15288:2015 or ISO/IEC/IEEE 12207:2017.

The generic and specific record and information item titles and contents in Clauses 7, 9, and 10 may be tailored to satisfy requirements of an organization, its projects or agreements based on the tailored conformance to ISO/IEC/IEEE 15288:2015 or ISO/IEC/IEEE 12207:2017. In tailoring, information items provided in this document may be modified (added to, combined or retitled). The contents of the information items shall correspond to the selected and tailored processes.

NOTE 2 ISO/IEC/IEEE 15288:2015, Annex A, and ISO/IEC/IEEE 12207:2017, Annex A provide requirements for the Tailoring process.

In this document, 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 document.

Throughout this document, “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 document.

The verb “include” used in this document indicates that either

a) the information is present, or

b) a reference to the information is given.

## 5.2 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 produce a document declaring its tailoring of the records and information items, and its interpretation of any clauses of this document 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 this document 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 this document that reference “the contract.”

d) When conformance is claimed for an information item, the item shall contain the generic contents required in Clause 7 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 will 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, an organization or a project or a multi-supplier program can 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 a), b) or c) listed above.

### 5.3 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 ISO/IEC/IEEE 12207:2017, Annex A or ISO/IEC/IEEE 15288:2015, Annex A.

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.

Absolute conformance may be claimed for selected processes or information items even if absolute conformance with all requirements of this document is not claimed.

## 6 Life-cycle data and information items

### 6.1 Life-cycle data characteristics

This document specifies how life-cycle data is managed in information items. The required data from the life-cycle or service process shall be organized into records and presented in one or more information items, and consistent with an information item generic type. An information item shall include its generic information item contents (Clause 7).

Each set of records and each information item produced as a document described in this document shall support the following life-cycle data characteristics:

a) unambiguous;

b) complete;

c) verifiable;

d) consistent;

e) modifiable;

f) traceable; and

g) presentable.

### 6.2 Records compared to information items (documents)

A record is a special type of documented information containing a set of structured data treated as a unit. Table 3 in Clause 9 identifies records. Consistent with ISO 9000, the purpose of a record is to state results achieved or to provide evidence of activities performed. However, this document distinguishes between records of data and documents (information items).

Data records gain their value from being combined with other records in a set, typically by inclusion in structured databases, registers, or repositories where the individual records are available for retrieval and analysis. Records hold the factual data (evidence) for the other generic information types. Data can be aggregated into records, and these records may be included in a report which is already defined as a particular information item (e.g., test report), or they may exist separately for other uses defined by the project. A single record, a selection of records, or a complete listing of the repository's contents is not suitable for issuance as a complete communication product as are the information items (documents) such as a plan or procedure. The information items (documents) are produced and communicated for human use and contain formal elements (such as purpose, scope, and summary), intended to make them usable by their intended audience.

## 6.3 Management of life-cycle data (records)

Life-cycle data results from the execution of the process or service management system activities and tasks. Data can be a work product or an element in other information items. Many of the clauses in ISO/IEC/IEEE 15288:2015 and ISO/IEC/IEEE 12207:2017 require life-cycle data to be produced or recorded. However, the clauses of ISO/IEC/IEEE 15288:2015 and ISO/IEC/IEEE 12207:2017 do not dictate the content, location, format, or media to be used to record and maintain the data. When choosing appropriate data to be recorded, record managers should also determine where in the organization or project's record-keeping systems the data should be recorded. Records may be maintained in databases, registers, repositories, archives, or other data management systems. Organizations or projects shall establish record retention policies in consideration of system life-cycle and organizational or service management needs for the data. Clause 9 defines the content of generic records and recommends content for specific records.

NOTE Requirements and guidance for records management are found in ISO 16175-1.

## 6.4 Management of information items (documents)

### 6.4.1 General

The management of information items shall be performed by applying the Information Management process of ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015. The Information Management process should support the needs of a project and the related product or service. It should include procedures for preparing, collecting, identifying, classifying, distributing, storing, updating, archiving, and retrieving information.

NOTE The knowledge management activities of ISO/IEC/IEEE 12207:2017, 6.2.4 and ISO/IEC/IEEE 15288:2015, 6.2.4 can also be useful.

Annex A provides a summary procedure for identifying and planning for information items and their contents. Information items should be defined to be applicable to multiple related processes used by a project or organization, or to related services (such as incident and problem management). Information items may be combined or subdivided consistent with the project, service, or system processes, phases, and stakeholder needs.

The information management process shall produce these outcomes:

a) Information to be managed is identified.

b) Information representations are defined.

c) Information is obtained, developed, transformed, stored, validated, presented, and disposed of.

d) The status of information is identified.

e) Information is available to designated stakeholders.

### 6.4.2 Developing the information management plan

The tasks to be performed in the Information Management process shall be identified in an Information Management Plan. More detailed plans should be prepared for extensive information management efforts. When developing this plan, consideration should be given to policies and procedures of the acquirer and supplier. The Information Management process for each project should be considered as part of a repeatable process for the acquirer and supplier. An Information Management plan may be created for an entire organization or for multiple projects and services that reuse information content.

### 6.4.3 Managing and controlling information items

Projects, organizations, and services may include their record descriptions and tailored information item descriptions in a data dictionary or work breakdown structure. This practice helps the document management, development, and maintenance activities. An established hierarchy of information items should be prescribed and a mechanism developed for resolving conflicts between items. For example, there should be one master schedule for the entire suite of plans relating to a single project, and schedule information given in specific plans should relate to this master schedule.

Commercial or other existing information items may be substituted for all or part of an information item if they contain the desired information, meet applicable quality characteristics, and are properly referenced. When existing information items are readily available to users, organizations should consider providing a reference to these information items rather than reproducing the information.

## 7 Generic types of information items

### 7.1 Use of generic types

The use of generic types simplifies the application of consistent structure, content, and formats for similar information items (records and documents), to support usability. This document defines the life-cycle data of ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015, by relating tasks and activities to the following generic types of information items:

a) description;

b) plan;

c) policy;

d) procedure;

e) report;

f) request; and

g) specification.

NOTE Clause 9 identifies the generic content of data records.

The generic information item contents shall be included in each applicable information item. Generic information item (document) contents are mapped to the identified output information items shown in column 3 of Tables 1 and 2.

The lists of contents of generic types of information items do not specify a normative sequence, structure of parts, or list of section titles.

## 7.2 Description — Generic content

Purpose: Represent a planned or actual function, design, service, item, product, or context of use.

NOTE A description of something that is required is a specification. The level of detail involved and the presentation for human use or for data storage determine whether information is presented as a description or as a preformatted record.

A description shall include the following elements:

a) date of issue and status;

b) scope;

c) issuing organization;

d) references;

e) context;

f) notation for description;

g) body;

h) summary;

i) glossary; and

j) change history.

Identified information items are as follows:

— concept of operations;

— database design description;

— design description

— interface description;

— operational concept;

— process description

— proposal;

— service catalog;

— system architecture description (or software architecture description); and

— system (software) element (or unit) description.

## 7.3 Plan — Generic content

Purpose: Define when, how, and by whom specific processes or activities are to be performed.

A plan shall include the following elements:

a) date of issue and status;

b) scope;

c) issuing organization;

d) references (applicable policies, laws, standards, contracts, requirements, and other plans and procedures);

e) approval authority;

f) introduction, containing the purpose and audience for the plan, and the purpose of the effort;

g) planned processes, activities and tasks;

h) identification of tools, methods, and techniques;

i) schedules;

j) budgets and cost estimates;

k) resources and their allocation, including human resources, technical resources (infrastructure), and tools;

l) responsibilities and authority, including the senior responsible owner and immediate process or service owner;

m) interfaces among parties involved and relation to related efforts;

n) risks and risk identification, assessment and mitigation activities;

o) quality assurance, including assurance of customer satisfaction, and performance measures;

p) environment, infrastructure, security, and safety;

q) training;

r) approach for technical and management review and reporting to stakeholders;

s) other plans (plans or task descriptions that expand on the details of a plan);

t) glossary;

u) change procedures and history; and

v) termination process.

Identified information items are as follows:

— acceptance plan;

— acquisition plan;

— capacity plan;

— configuration management plan;

— development plan;

— improvement plan (process improvement plan, service improvement plan);

— information management plan;

— information security plan;

— integration plan (implementation plan);

— maintenance plan;

— project management plan;

— quality management plan (quality assurance plan);

— release plan (deployment plan);

— risk management plan;

— service continuity and availability plan;

— training plan;

— transition plan;

— validation plan; and

— verification plan.

## 7.4 Policy — Generic content

Purpose: Establish an organization's high-level intention and approach to achieve objectives for, and ensuring effective control of, a service, process, or management system.

A policy shall include the following elements:

a) date of issue, effective date, and status;

b) scope;

c) issuing organization;

d) approval authority and identification of those accountable for enforcing the policy;

e) authoritative references for compliance or conformance (such as policies, laws and regulations, standards, contracts, requirements and vision or mission statements);

f) body, including objectives;

g) glossary; and

h) change history.

Policies may be communicated in various media or included in plans, procedures, specifications, or other documents. Policies are implemented through Plans and Procedures. Policies may be defined for any life-cycle process or service process.

Identified information items are as follows:

— life-cycle policy;

— quality management policy (quality assurance policy).

## 7.5 Procedure — Generic content

The references are ISO/IEC/IEEE 12207:2017, 6.3.3.3 c) and ISO/IEC/IEEE 15288:2015, 5.5.1.

The purpose is to define in detail when and how to perform certain processes, activities or tasks, including tools needed.

A procedure shall include the following elements:

a) date of issue and status;

b) scope;

c) issuing organization;

d) approval authority;

e) relationship to plans and other procedures;

f) authoritative references;

g) inputs and outputs;

h) ordered description of steps to be taken by each participant;

i) error and problem resolution;

j) glossary; and

k) change history.

Identified information items are as follows:

— complaint procedure;

— configuration management procedure (asset management procedure, change management procedure, release and deployment procedure);

— implementation procedure;

— incident management procedure;

— information management procedure;

— life-cycle procedure;

— maintenance procedure;

— measurement procedure;

— problem management procedure;

— quality management procedure;

— supplier management procedure;

— test procedure;

— training documentation;

— transition procedure;

— user documentation (information for users, information for use);

— validation procedure; and

— verification procedure.



## 7.6 Report — Generic content

The references are ISO/IEC/IEEE 12207:2017, 6.3.3.3 c) and ISO/IEC/IEEE 15288:2015, 6.3.3.3 c).

The purpose is to describe the results of activities such as investigations, assessments, and tests. A report communicates decisions.

A report shall include the following elements:

a) date of issue and status;

b) scope;

c) issuing organization;

d) contributors;

e) summary;

f) introduction, including the purpose, audience and scope of the report;

g) context (assumptions);

h) body (including methods of obtaining results);

i) conclusions and recommendations;

j) references;

k) bibliography;

l) glossary; and

m) change history.

Identified information items are as follows:

— acceptance report;

— configuration status report;

— evaluation report;

— incident report;

— installation report;

— integration and test report (software unit test report);

— monitoring and control report;

— problem report;

— process improvement report;

— product need assessment;

— progress report;

— review minutes;

— service report;

— test report;

— user notification;

— validation report; and

— verification report.

## 7.7 Request — Generic content

Purpose: Record information needed to solicit a response.

A request shall include the following elements:

a) date of initiation;

b) scope;

c) subject;

d) originator of request;

e) identification of requested item, service, or response;

f) detailed description of requested item, service or response, including due date;

g) justifications.

NOTE The identification of the requested item can be a specification.

Identified information items are as follows:

— change request;

— customer satisfaction survey;

— request for proposal (RFP);

— resource request;

— risk action request; and

— service request (record).

## 7.8 Specification — Generic content

Purpose: provide requirements for a required service, product, or process.

Specifications should use a well-defined syntax. Specifications should be internally consistent in terminology, definitions, and constraints. Unique specifications should be defined once to prevent inconsistent updates. A specification shall include the following elements:

a) date of issue and status;

b) scope;

c) issuing organization;

d) references;

e) approval authority;

f) body;

g) assurance requirements;

h) conditions, constraints and characteristics;

i) glossary; and

j) change history.

Identified information items are as follows:

— contract;

— service level agreement (SLA); and

— system requirements specification (or software requirements specification or service requirements).

# 8 Mapping of information items to the life cycle processes

## 8.1 The process model

ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015 have identical process models for the names, purpose, and outcomes of the processes. There is a slight variation in the name of the Requirements Definition process, as listed below. The two base standards differ in the tasks and activities required for the life cycle of software systems (ISO/IEC/IEEE 12207:2017) and systems in general (ISO/IEC/IEEE 15288:2015). There are two Agreement processes, six Organizational Project-Enabling processes, eight Technical Management processes, and fourteen Technical processes, in addition to the Tailoring process.

The Agreement processes are as follows:

1) Acquisition; and

2) Supply.

The Organizational Project-Enabling processes are as follows:

1) Life Cycle Model Management;

2) Infrastructure Management;

3) Portfolio Management;

4) Human Resource Management;

5) Quality Management; and

6) Knowledge Management.

The Technical Management processes are as follows:

1) Project Planning;

2) Project Assessment and Control;

3) Decision Management;

4) Risk Management;

5) Configuration Management;

6) Information Management;

7) Measurement; and

8) Quality Assurance.

The Technical processes are as follows:

1) Business or Mission Analysis;

2) Stakeholder Needs and Requirements Definition;

3) System Requirements Definition (ISO/IEC/IEEE 15288:2015);
System/Software Requirements Definition (ISO/IEC/IEEE 12207:2017);

4) Architecture Definition;

5) Design Definition;

6) System Analysis;

7) Implementation;

8) Integration;

9) Verification;

10) Transition;

11) Validation;

12) Operation;

13) Maintenance;

14) Disposal; and

15) Tailoring Process.

## 8.2 Mapping Considerations

In this clause information items are identified and mapped to the process where they are identified as output in ISO/IEC/IEEE 15288:2015 or ISO/IEC/IEEE 12207:2017. These references may be normative requirements, recommended output, informative material, examples, or notes. This document identifies information items that are not explicitly specified by title in the base standards. In these cases, the base standards explicitly call out information to be documented, described, planned, specified, reported, recorded, requested or specified. Annex B, Table B.1, compares information items by source.

Tables 1 and 2 also list recommended input information items (source documents and data) in column 1 to help produce the output information items. Tables 1 and 2 do not show all the possible inputs, nor all the required outputs for a process. They show the recommended input information items for each output information item developed or revised during the process. This document does not specify the format or content of recommended input data or input information items, except for the content of those items that are also output information items.

Tables 1 and 2 also show the specific reference citations from the base standards for each specified information item, not all references for a process.

In numerous clauses, the base standards indicate that something (for example, a strategy) is to be "defined." However, definition does not in itself indicate that a specific information item is produced. Similarly, clauses in the base standards indicating that "communication is maintained" do not necessarily mean that an information item (a document) is produced. Clauses in the base standard requiring that "planning" occur do not necessarily mean that a documented plan is produced.

For nearly every process, ISO/IEC/IEEE 15288:2015 and ISO/IEC/IEEE 12207:2017 specify that organizational policies and procedures are a source for process activities and outputs. In Tables 1 and 2, "organizational policies and procedures" are not listed, but should be considered as input for every information item. In contractual work, the contract/agreement and requirements should also be considered as input for every information item, whether or not the source standard states that the process should be performed "as specified in the contract."

## 8.3 Mapping of information items to the system life cycle

Table 1 maps ISO/IEC/IEEE 15288:2015 clauses (column 2), processes, and output information items.

**Table 1 — Mapping of ISO/IEC/IEEE 15288:2015 clauses to information items for each system life-cycle process**

| Typical input information items | ISO/IEC/IEEE 15288:2015 reference | Output information item |
|---|---|---|
| **ACQUISITION** | | |

**Table 1** *(continued)*

| Typical input information items | ISO/IEC/IEEE 15288:2015 reference | Output information item |
|---|---|---|
| Proposal, other contracts, needs assessment, requirements specification | 6.1.1.2 c) 6.1.1.3 c) B.1 | Contract (agreement) |
| Concept of operations, system requirements specification, software requirements specification, acceptance strategy, other requests for proposal | 6.1.1.2 a), 6.1.1.3 a) 2), B.1 | Request for proposal (RFP) (request for supply) |
| Request for proposal, proposal, contract | 6.1.1.3 b), 6.1.1.3 d), B.1 | Evaluation report (supplier selection report, supply assessment report). |
| Release report | 6.1.1.3 e) 1), B.1 | Acceptance report (acceptance Record) |
| **SUPPLY** | | |
| Request for proposal, other proposals | 6.1.2.2 b), 6.1.2.3 b), B.1 | Proposal |
| Proposal, other contracts and agreements | 6.1.2.2 c), 6.1.2.3 c), B.1 | Contract (agreement) |
| Problem report, monitoring and control report, complaint | 6.1.2.1, B.1 | Change request |
| **LIFE CYCLE MODEL MANAGEMENT** | | |
| Organizational procedure | 6.2.1.1, 6.2.1.2 a), 6.2.1.3 a), B.1 | Life-cycle policy and procedures |
| Assessment report, organizational procedure | 6.2.1.3 c) | Improvement plan |
| Organizational procedure, process assessment procedure, process assessment results, audit report, customer satisfaction report, assessment report, progress report, problem report | 6.2.1.3 c), B.1 | Process improvement report |
| **INFRASTRUCTURE MANAGEMENT** | | |
| Organizational procedure, other system requirements specification, project management plan | 6.2.2.2 a), 6.2.2.3 a), 6.2.2.3 b), B.1 | System requirements specification |
| System architecture description | 6.2.2.2 b) | System element description |
| System architecture description, problem report, monitoring and control report | B.1 | Change request |
| **PORTFOLIO MANAGEMENT** | | |
| Organizational procedure, project plan, business action plan | 6.2.3.3 a) 8) | Project management plan |
| Agreement, project life-cycle policies and procedures | 6.2.3.3 a) 7), B.1 | Progress report (project initiation report, project closure report) |
| Agreement, business strategy, risk management plan | 6.2.3.3 a) 7), B.1 | Evaluation report (portfolio analysis report) |
| **HUMAN RESOURCE MANAGEMENT** | | |
| Employee skill record, project management plan | 6.2.4.3 b) | Training plan |
| Knowledge management policy, training plan, user documentation, validation procedure | 6.2.4.3 b) | Training documentation |
| Project management plan, staffing plan, training plan | 6.2.4.3 a) 1), B.1 | Evaluation report (required skills report) |
| **QUALITY MANAGEMENT** | | |
| Project management plan | 6.2.5.3 a), 6.2.5.3 c) | Quality management plan |

**Table 1** *(continued)*

| Typical input information items | ISO/IEC/IEEE 15288:2015 reference | Output information item |
|---|---|---|
| Organizational procedure, quality management plan, customer satisfaction report, problem report | 6.2.5.2 a), 6.2.5 a), B.1 | Quality management policy and procedure |
| Survey, interview, requirements specification | 6.2.5.3 b), B.1 | Monitoring and control report (corrective and preventive action report, problem management report) |
| **KNOWLEDGE MANAGEMENT** | | |
| Project management plan, configuration management plan | 6.2.6.3 a) | Information management plan (knowledge management plan) |
| Knowledge assets, reference architectures, process models, lessons learned | 6.2.6.3 c) 2), B.1 | Training documentation |
| **PROJECT PLANNING** | | |
| Contract, organizational procedure, other plans | 6.3.1.1, 6.3.1.2, 6.3.1.3, B.1 | Project (technical) management plan (systems engineering management plan, software development plan) |
| Product need assessment, contract | 6.3.1.3 b) 6) | Acceptance plan |
| Product need assessment | 6.3.1.3 b) 6) | Acquisition plan |
| Project management plan, work breakdown structure, budget | 6.3.1.3 c) 2) | Resource request |
| **PROJECT ASSESSMENT AND CONTROL** | | |
| Contract, organizational procedure, other plans | 6.3.2.3 a), 6.3.2.3 c) 2) | Project management plan |
| Contract, organizational procedure, project plan, quality assurance plan, other progress report | 6.3.2.3 b), 6.3.2.3 a) 6) | Progress report |
| Problem report, analysis of metrics and variations | 6.3.2.3 b) 10), B.1 | Evaluation report (project assessment report) |
| Monitoring and control report, decision record | 6.3.2.3 c) 1) | Review minutes |
| Contract, complaint, measurement results | 6.3.2.3 c) 3), B.1 | Change request (project control request) |
| **DECISION MANAGEMENT** | | |
| Organizational procedure, contract | 6.3.3.3 a) 2), 6.3.3.3 c) 3) | Problem report |
| Organizational procedure, contract | 6.3.3.3 c), B.1 | Report (decision report — see generic report information item) |
| **RISK MANAGEMENT** | | |
| Project management plan | 6.3.4.3 a) | Risk management plan |
| Risk management plan, risk profile | 6.3.4.3 b) 2), B.1 | Risk action request |
| Risk management plan, risk profile, quality assurance procedure, problem report | 6.3.4.3 b), B.1 | Monitoring and control report (risk profile report) |
| **CONFIGURATION MANAGEMENT** | | |
| Project management plan, information management plan | 6.3.5.3 a) | Configuration management plan |
| Configuration management plan, quality management plan | 6.3.5.3 c) | Configuration management procedure |
| Needs analysis | 6.3.5.3 c), B.1 | Change request (request for change, variance request) |

**Table 1** *(continued)*

| Typical input information items | ISO/IEC/IEEE 15288:2015 reference | Output information item |
|---|---|---|
| Change records, inventories, configuration management plan, CM procedures | 6.3.5.3 d), B.1 | Configuration status report (system release report) |
| Change records, inventories, configuration management plan, CM procedures | 6.3.5.3 e), B.1 | (Configuration) evaluation report |
| **INFORMATION MANAGEMENT** | | |
| Organizational procedure, project management plan, configuration management plan | 6.3.6.1, 6.3.6.3 a) | Information management plan |
| Information item records, release records, information management plan | 6.3.6.3 b), B.1 | Configuration status report (information management report) |
| **MEASUREMENT** | | |
| Measurement data, information management plan | 6.3.7.1, 6.3.7.3 b) | Monitoring and control report |
| Project management plan, quality assurance plan, measurement strategy, requirements specification | 6.3.7.3 a) 5) | Measurement procedures |
| Measurement results, quality assurance plan, measurement procedures | 6.3.7.2 a), 6.3.7.3 a) 3), B.1 | Evaluation report (measurement information needs report) |
| Measurement results | 6.3.7.3 b) 4) | Review minutes |
| Measurement results, quality assurance plan, measurement procedures | 6.3.7.1, 6.3.7.2 e), 6.3.7.3 b) 3) | Report (see generic report information item) |
| **QUALITY ASSURANCE** | | |
| Quality management plan, measurement procedures, system quality requirements, quality assurance records, incident record, problem record, customer satisfaction report, complaint | 6.3.8.2 d), 6.3.8.3 d), B.1 | (QA) Evaluation report |
| Quality management procedures, quality management plan, test procedures | 6.3.8.2 a) | Quality management (assurance) procedures |
| **BUSINESS OR MISSION ANALYSIS** | | |
| Needs assessment, portfolio evaluation report, use case, organizational concept and strategy | 6.4.1.1, 6.4.1.3 a) 1), B.1 | Concept of operations (preliminary life cycle concepts) |
| Concept of operations, scenarios, use case | 6.4.1.2 c), 6.4.1.3 c), B.1 | (Preliminary) operational concept |
| **STAKEHOLDER NEEDS AND REQUIREMENTS DEFINITION** | | |
| Contract, needs assessment, life cycle concepts, scenarios, use cases | 6.4.2.3 b) 1), 6.4.2.3 c), B.1 | Concept of operations |
| Concept of operations, context of use description | 6.4.2.2 b), 6.4.2.3 c) | Operational concept |
| Contract, needs assessment, concept of operations | 6.4.2.1, 6.4.2.2 e), 6.4.2.3 c), 6.4.2.3 d), 6.4.2.3 e), B.1 | System (stakeholder) requirements specification |
| Business strategy, customer satisfaction survey | 6.4.2.1, 6.4.2.2 d), 6.4.2.3 b) | Product need assessment |
| **SYSTEM REQUIREMENTS DEFINITION** | | |
| Organizational procedure, stakeholder requirements | 6.4.3.1, 6.4.3.2, 6.4.3.3 b), 6.4.3.3 c), B.1 | System requirements specification |
| Concept of operation, system requirements specification | 6.4.3.2 a), B.1 | System architecture description |
| **ARCHITECTURE DEFINITION** | | |

**Table 1** *(continued)*

| Typical input information items | ISO/IEC/IEEE 15288:2015 reference | Output information item |
|---|---|---|
| Development plan, system requirements specification, concept of operations, operational concepts, technology roadmap | 6.4.4.1, 6.4.4.2, 6.4.4.3 b), 6.4.4.3 c), 6.4.4.3 d), B.1 | System architecture description (architecture report) |
| System architecture description, system design description | 6.4.4.3 c) | Interface description |
| System architecture description, stakeholder and system requirements specifications | 6.4.3.3 e), B.1 | Evaluation report (architecture assessment report) |
| **DESIGN DEFINITION** | | |
| System architecture description | 6.4.5.2 d), 6.4.5.3 d), B.1 | Interface description |
| System architecture description, technology assessment report, product specifications | 6.4.5.1, 6.4.5.2 b), 6.4.5.3, B.1 | System element description (design characteristics report, design artifacts report) |
| **SYSTEM ANALYSIS** | | |
| System requirements specification, change request, problem report, test report | 6.4.6.1, 6.4.6.3 c), B.1 | Evaluation report (system analysis report, analysis results and recommendations) |
| **IMPLEMENTATION** | | |
| Operational concept, system design descriptions, interface descriptions | 6.4.7.3 a) | Implementation procedure |
| Stakeholder requirements, use case, concept of operations, design descriptions | 6.4.7.3 b) | User documentation (information for users, information for use) |
| Implementation procedure | 6.4.7.3 b) 3), B.1 | Integration and test report (implementation report) |
| **INTEGRATION** | | |
| Integration procedure, test procedure | 6.4.8.2 g), B.1 | Integration and test report |
| Integration procedures, design description | 6.4.8.3 b) | User documentation (assembly procedure) |
| Configuration record | 6.4.8.3 c) | Problem report |
| **VERIFICATION** | | |
| Test procedures, test report | 6.4.9.2 d) | Problem report |
| System requirements specifications, interface descriptions, design description | 6.4.9.3 a) 6), 6.4.9.3 c) 5) | Verification plan |
| Requirements specification, verification strategy, design definition, interface control description, test procedures, progress report, problem report, test case | 6.4.9.3 b) | Verification procedure |
| Verification procedures, progress report, problem report, test case | 6.4.9.3 c), B.1 | Integration and test report (verification report) |
| **TRANSITION** | | |
| Installation procedure, transition strategy, operational procedures | 6.4.10.3 a) | Release plan (contingency back-out plan) |
| Installation plan, problem report, progress report | 6.4.10.3 c), B.1 | Installation report (Transition report) |
| Problem management procedure | 6.4.10.1, 6.4.10.3 c) | Problem report |
| **VALIDATION** | | |
| Quality management plan, validation procedures | 6.4.11.2 f), B.1 | Validation report |

**Table 1** *(continued)*

| Typical input information items | ISO/IEC/IEEE 15288:2015 reference | Output information item |
|---|---|---|
| System requirements specification, use cases and scenarios, operational concept | 6.4.11.3 a) | Validation plan |
| Stakeholder requirements, operational concept, validation strategy, test procedures, test case, problem report | 6.4.11.3 b) | Validation procedure |
| Test procedure | 6.4.11.3 c) | Problem report |
| **OPERATION** | | |
| Scenarios, use case, | 6.4.12.3 a) 1) iv) | Operational concept |
| Problem report, evaluation report | 6.4.12.3 d) | User documentation (information for users, information for use) |
| Information security plan, operational strategy, threat analysis | 6.4.12.3 a) | Information security procedure |
| Operational procedures, service level agreement, measurement data | 6.4.12.3 b), B.1 | Monitoring and control report (operation report) |
| Incident and problem reports, complaints, operational procedures | 6.4.12.3 d) | Customer satisfaction survey |
| User documentation, incident report, service level agreement | 6.4.12.3 c), B.1 | (Operational) problem report |
| **MAINTENANCE** | | |
| Organizational procedure, operations plan, development plan | 6.4.13.3 a), 6.4.13.3 d) | Maintenance plan (life cycle support plan) |
| Maintenance plan, user documentation | 6.4.13.3 b), 6.4.13.3 c) | Maintenance procedure |
| Problem report, incident report, product need assessment, complaint | 6.4.13.3 b), B.1 | Change request (maintenance request) |
| Problem report, maintenance plan, system analysis report | 6.4.13.3 d), B.1 | Service report (logistics report) |
| Maintenance procedures, change requests, incident reports, service requests | 6.4.13.3 b), B.1 | (Maintenance) problem report |
| **DISPOSAL** | | |
| Disposal records, knowledge management records, asset management records | 6.4.14.3 c), B.1 | Configuration status report (archive report) |
| **TAILORING** | | |
| Standard life-cycle model, standard, organizational policies and procedures, tailoring decision, agreement, stakeholder requirement | A.2.3 | Life-cycle procedure |



## 8.4 Mapping of information items to the software life cycle

Table 2 maps information items to the software life cycle as defined in ISO/IEC/IEEE 12207:2017.

**Table 2 — Mapping of ISO/IEC/IEEE 12207:2017 clauses to information items for each software system life-cycle process**

| Typical input information items | ISO/IEC/IEEE 12207:2017 reference | Output information item |
|---|---|---|
| **ACQUISITION** | | |
| Proposal, other contracts, needs assessment, requirements specification | 6.1.1.2 c), 6.1.1.3, 6.1.1.3 c), B.1 | Contract (agreement) |
| Service catalog, agreement | 6.1.1.2 c) | Service level agreement |

**Table 2** *(continued)*

| Typical input information items | ISO/IEC/IEEE 12207:2017 reference | Output information item |
|---|---|---|
| Life cycle model, milestone schedule, concept of operations, system requirements specification, software requirements specification, acceptance strategy, other requests for proposal | 6.1.1.2 a), 6.1.1.3 a) 2), B.1 | Request for proposal (RFP) (request for supply) |
| Agreement | 6.1.1.3 c) 1), B.1 | Configuration management procedure (change management procedure) |
| Evaluation report, audit report, progress report, problem report, audit report | 6.1.1.3 c) 2), B.1 | Change request |
| Release report | 6.1.1.2 d), 6.1.1.3 e) 1), B.1 | Acceptance report (acceptance record) |
| Life cycle model, milestone schedule, concept of operations, system requirements specification, acceptance criteria | B.1 | Acquisition plan |
| **SUPPLY** | | |
| Request for proposal, other proposals | 6.1.2.2 b), 6.1.2.3 b), B.1 | Proposal (supply response, tender) |
| Proposal, other contracts and agreements | 6.1.2.2 c), 6.1.2.3 c), 6.1.2.3 d), 6.1.2.3 e) | Contract (agreement) |
| Service catalog, agreement | 6.1.2.2 c) | Service level agreement |
| Configuration management plan | 6.1.2.3 c) 1), B.1 | Supplier management (change management) procedure |
| Problem report, evaluation report, monitoring and control report, complaint | 6.1.2.3 c) 2), B.1 | Change request |
| **LIFE CYCLE MODEL MANAGEMENT** | | |
| Organizational mission, organizational strategy | 6.2.1.1, 6.2.1.2 a), 6.2.1.3 a), B.1 | Life cycle policy (organizational policy) |
| Business strategy, life cycle strategy, mission analysis | 6.2.1.1, 6.2.1.2 b), 6.2.1.3 a), B.1 | Life cycle procedure (organizational procedure, process management procedure) |
| Process model, process outcomes, purpose, activities | 6.2.1.2 b), 6.2.1.3 a) 3), B.1 | Process description |
| Organizational procedure, process assessment procedure, process assessment results, audit report, customer satisfaction report, assessment report, progress report, problem report | 6.2.1.2 c), 6.2.1.3 c) 2), B.1 | Process improvement report |
| Assessment report, organizational procedure | 6.2.1.3 b), 6.2.1.3 c) 1), B.1 | Improvement plan |
| **INFRASTRUCTURE MANAGEMENT** | | |
| Organizational procedure, other system requirements specification, project management plan | 6.2.2.2 a), 6.2.2.3 a) 1), B.1 | System requirements specification (infrastructure requirements) |
| System architecture description | 6.2.2.2 b), B.1 | System element description (infrastructure description) |
| System architecture description, problem report, monitoring and control report | 6.2.2.3 b) 2), B.1 | Change request |
| **PORTFOLIO MANAGEMENT** | | |
| Organizational procedure, project plan, business action plan | 6.2.3.3 a), B.1 | Project management plan (project authorization) |

**Table 2** *(continued)*

| Typical input information items | ISO/IEC/IEEE 12207:2017 reference | Output information item |
|---|---|---|
| Service management plan, concept of operations | 6.2.3.1 | Service catalog |
| **HUMAN RESOURCE MANAGEMENT** | | |
| Project management plan, staffing plan, training plan | 6.2.4.2 a). 6.2.4.3 a) 1), B.1 | Evaluation report (skills need report) |
| Employee skill record, project management plan | 6.2.4.3 b) 1) | Training plan |
| Knowledge management policy, training plan, user documentation, validation procedure | 6.2.4.3 b) 2), B.1 | Training documentation |
| **QUALITY MANAGEMENT** | | |
| Organizational policies, quality management plan, business strategy | 6.2.5.2 a), 6.2.5.3 a), B.1 | Quality management policy |
| Organizational procedure, quality management plan, customer satisfaction report, problem report | 6.2.5.2 a), 6.2.5.3 a) 1), B.1 | Quality management procedure |
| Project management plan, system/software requirements | 6.2.5.3 a), 6.2.5.3 c), B.1 | Quality management plan |
| Quality management procedures, Survey, interview, requirements specification | 6.2.5.3 b), B.1 | Monitoring and control report |
| Quality management procedures, complaints, incident and problem reports | 6.2.5.3 b) 2) | Customer satisfaction survey |
| **KNOWLEDGE MANAGEMENT** | | |
| Project management plan, configuration management plan | 6.2.6.3 a), B.1 | Information management plan (knowledge management plan) |
| Information management plan (knowledge management plan) | 6.2.6.3 a) 1), B.1 | Knowledge management procedures |
| Knowledge assets, reference architectures, process models, lessons learned | 6.2.6.3 c) 2) | Training documentation |
| **PROJECT PLANNING** | | |
| Contract, organizational procedure, other plans | 6.3.1.1, 6.3.1.2, 6.3.1.3, B.1 | Project (technical) management plan (systems engineering management plan, software development plan) |
| Project management plan, work breakdown structure, budget, staffing plan, skills assessment | 6.3.1.2 c), 6.3.1.3 c) 2), B.1 | Resource request |
| Product need assessment, contract | 6.3.1.3 b) 6) | Acceptance plan |
| Product need assessment | 6.3.1.3 b) 6) | Acquisition plan |
| **PROJECT ASSESSMENT AND CONTROL** | | |
| Measurement results, analysis results, audit records | 6.3.2.1, 6.3.2.2 a), 6.3.2.3 b) 10), B.1 | Evaluation report (project assessment report) |
| Problem report, analysis of metrics and variations, service level agreement | 6.3.2.1, 6.3.2.2 a), 6.3.2.3 b) 11), B.1 | Monitoring and control report |
| Contract, organizational procedure, project plan, quality assurance plan, other progress report | 6.3.2.2 f), 6.3.2.3 a) 6) | Progress report |
| Contract, organizational procedure, other plans | 6.3.2.2 h), 6.3.2.3 a), 6.3.2.3 c) 2) | Project management plan |

**Table 2** *(continued)*

| Typical input information items | ISO/IEC/IEEE 12207:2017 reference | Output information item |
|---|---|---|
| Monitoring and control report, decision record | 6.3.2.3 c) 1), B.1 | Review minutes |
| Contract, complaint, measurement results, monitoring and control report | 6.3.2.3 c) 3) | Change request (project control request) |
| **DECISION MANAGEMENT** | | |
| Organizational procedure, contract, problem records | 6.3.3.3 a) 2) | Problem report |
| Analysis results, monitoring and control results, assessment report, review minutes | 6.3.3.3 a) 2), B.1 | Decision request (see generic Request information item) |
| Organizational procedure, contract | 6.3.3.3 c) | Report (see generic Report information item) |
| **RISK MANAGEMENT** | | |
| Risk management plan, risk profile, quality assurance procedure, problem report | 6.3.4.2 e), 6.3.4.3 b) 3) | Monitoring and control report (risk profile report) |
| Project management plan, system/software requirements, knowledge records | 6.3.4.3 a), B.1 | Risk management plan |
| Risk management plan, risk profile | 6.3.4.3 b) 2), B.1 | Risk action request |
| **CONFIGURATION MANAGEMENT** | | |
| Change records, inventories, configuration management plan, CM procedures | 6.3.5.2 d), 6.3.5.3 e) 2), B.1 | Configuration status report (system/software release report) |
| Project management plan, information management plan | 6.3.5.3 a), B.1 | Configuration management plan |
| Configuration management plan, quality management plan | 6.3.5.3 a) 2), 6.3.5.3 c), B.1 | Configuration management procedure |
| Needs analysis, audit results | 6.3.5.3 c), 6.3.5.3 d) 2), B.1 | Change request (request for change, request for variance) |
| Change records, inventories, configuration management plan, CM procedures | 6.3.5.3 f) 6), B.1 | (Configuration) evaluation report |
| **INFORMATION MANAGEMENT** | | |
| Organizational procedure, project management plan, configuration management plan | 6.3.6.1, 6.3.6.3 a) | Information management plan |
| Information item records, release records, information management plan | 6.3.6.2 d), 6.3.6.3 b), B.1 | Configuration status report (information management report, knowledge asset report) |
| Information management plan, configuration management procedures | 6.3.6.3 b), B.1 | Information management procedures |
| **MEASUREMENT** | | |
| Measurement data, information management plan | 6.3.7.1, 6.3.7.3 b) 4), B.1 | Monitoring and control report (measurement report) |
| Measurement results, quality assurance plan, measurement procedures | 6.3.7.2 e), 6.3.7.3 a) 3), B.1 | Evaluation report |
| Project management plan, quality assurance plan, measurement strategy, requirements specification | 6.3.7.3 a) 5), 6.3.8.3 b) 1), B.1 | Measurement procedures |
| Measurement results | 6.3.7.3 b) 4) | Review minutes |
| **QUALITY ASSURANCE** | | |
| Quality management procedures, quality management plan, test procedures | 6.3.8.2 a), B.1 | Quality management (assurance) procedures |

**Table 2** *(continued)*

| Typical input information items | ISO/IEC/IEEE 12207:2017 reference | Output information item |
|---|---|---|
| Quality management plan, measurement procedures, system quality requirements, quality assurance records, incident record, problem record, customer satisfaction report, complaint | 6.3.8.2 d), 6.3.8.3 d), B.1 | (QA) Evaluation report |
| Quality management plan, problem report, evaluation report | 6.3.8.3 a) 1) vi), | Improvement plan |
| Problem records, evaluation reports, monitoring and control reports | 6.3.8.3 d) 8) | Problem report |
| **BUSINESS OR MISSION ANALYSIS** | | |
| Needs assessment, portfolio evaluation report, use case, complaints, stakeholder requirements, system analysis | 6.4.1.1 | Concept of operations (preliminary life cycle concepts) |
| Concept of operations, scenarios | 6.4.1.2 c), 6.4.1.3 c), | Operational concept |
| System analyses, market analyses | 6.4.1.3.d) 2), B.1 | Evaluation report (solution alternative classes assessment report) |
| **STAKEHOLDER NEEDS AND REQUIREMENTS DEFINITION** | | |
| Business strategy, customer satisfaction survey | 6.4.2.1, 6.4.2.2 d), 6.4.2.3 b), B.1 | Product (stakeholder) need assessment |
| Contract, needs assessment, concept of operations | 6.4.2.1, 6.4.2.2 e), 6.4.2.3 c), 6.4.2.3 d), 6.4.2.3 e), B.1 | System (stakeholder) requirements specification |
| Contract, needs assessment, life cycle concepts, scenarios, use cases | 6.4.2.2 b), 6.4.2.3 c), 6.4.2.3 f) 3), B.1 | Operational concept |
| Stakeholder requirements | 6.4.2.3 f), B.1 | Configuration status report (stakeholder requirements report) |
| Preliminary context of use, organizational concepts | 6.4.2.3 b) 1) | Concept of operations |
| **SYSTEM/SOFTWARE REQUIREMENTS DEFINITION** | | |
| Organizational procedure, stakeholder requirements | 6.4.3.1, 6.4.3.2, 6.4.3.3 b), 6.4.3.3 c), B.1 | System/software requirements specification |
| Concept of operation, system requirements specification | 6.4.3.2 a), B.1 | System element description |
| Architecture description, stakeholder requirements, problem report | 6.4.3.3 d), B.1 | Change request |
| **ARCHITECTURE DEFINITION** | | |
| Development plan, stakeholder concerns and requirements, system/software requirements specification, concept of operations, operational concept, technology roadmap, market studies | 6.4.4.1, 6.4.4.2, 6.4.4.3 b), 6.4.3.3 c), B.1 | System architecture description |
| Concept of operation, system requirements specification, architecture description | 6.4.4.2 f), 6.4.4.3 d) 1) | (Software) System element description |
| System/software requirements, system architecture description, system design description | 6.4.4.3 d) 2) | Interface description |
| System architecture description, stakeholder and system requirements specifications | 6.4.4.3 e) | Evaluation report (architecture assessment report) |

**Table 2** *(continued)*

| Typical input information items | ISO/IEC/IEEE 12207:2017 reference | Output information item |
|---|---|---|
| **DESIGN DEFINITION** | | |
| System/software requirements, system architecture description, technology assessment report, product specifications | 6.4.5.1, 6.4.5.2, 6.4.5.3 b), 6.4.5.3 d), B.1 | Design description (design characteristics report, design artifacts report) |
| System architecture description, technology assessment report, product specifications | 6.4.5.1, 6.4.5.2 a), 6.4.5.2 b), 6.4.5.3, B.1 | System element description |
| System architecture description, system/software requirements | 6.4.5.1, 6.4.5.2 d), 6.4.5.3 b) 5), 6.4.5.3 d), B.1 | Interface description (interface specification) |
| System/software requirements, system architecture description, design description | 6.4.5.3 a) 1), 6.4.5.3 b), 6.4.5.3 d) | Database design description |
| **SYSTEM ANALYSIS** | | |
| System requirements specification, change request, problem report, test report | 6.4.6.1, 6.4.6.3 c), B.1 | Evaluation report (system analysis report) |
| **IMPLEMENTATION** | | |
| Life cycle model, project management plan, infrastructure plan, development policies and standards | 6.4.7.3 a) 1) | Development plan (implementation plan) |
| Software development plan, System design descriptions, interface descriptions, life cycle model | 6.4.7.3 a) 1) ii), 6.4.7.3 b) 1), B.1 | Implementation procedure |
| Software development plan, system/software requirements | 6.4.7.3 a) 1) vi), | Test procedure |
| Stakeholder requirements, use case, concept of operations, design descriptions | 6.4.7.3 b) | User documentation (information for users, information for use) |
| Implementation procedure, Test procedures, test records | 6.4.7.3 c) | Test report |
| **INTEGRATION** | | |
| System architecture description, system/software requirements, design description | 6.4.8.1, B.1 | Interface (control) description |
| Integration procedure, test procedure | 6.4.8.2, B.1 | Implementation procedure (Integration and test procedure) |
| Integration procedure, test procedure, test results | 6.4.8.2 g) | Integration and test report (integration report) |
| Configuration record | 6.4.8.2 g), 6.4.8.3 c) | Problem report |
| Life cycle model, project management plan, infrastructure plan, integration strategy | 6.4.8.3 a) 1) iv), 6.4.8.3 c) 3) | Integration plan |
| **VERIFICATION** | | |
| Test procedures, test report | 6.4.9.2 d) | Problem report |
| Verification procedures, progress report, problem report, test case | 6.4.9.2 e), 6.4.9.2 f), 6.4.9.3 c) 3), B.1 | Verification report |
| Development plan, software/system requirements | 6.4.9.3 a) 1), 6.4.9.3 c) 5) | Verification plan |
| Requirements specification, verification strategy, design definition, interface control description, test procedures, progress report, problem report, test case | 6.4.9.3 b), 6.4.9.3 c) 5), B.1 | Verification procedure |

**Table 2** *(continued)*

| Typical input information items | ISO/IEC/IEEE 12207:2017 reference | Output information item |
|---|---|---|
| **TRANSITION** | | |
| Installation plan, problem report, progress report | 6.4.10.2 c), 6.4.10.3 c) | Installation report (Transition report) |
| Installation procedure, transition strategy, operational procedures | 6.4.10.3 a), 6.4.10.3 c) 4) | Transition plan (contingency planning) |
| Configuration record, system architecture description | 6.4.10.3 a) 1) ix) | Design description |
| Transition plan, integration procedure, verification procedure | 6.4.10.3 a) 1) ix) | Test procedure |
| Installation procedure, operations procedures, design description, stakeholder requirements | 6.4.10.3 a) 1) ix), 6.4.10.3 a) 3), 6.4.10.3 b) 2), 6.4.10.3 b) 4), 6.4.10.3 c) 4) | User documentation (information for users, information for use) |
| Release procedure, test procedure, transition plan | 6.4.10.3 a) 4), 6.4.10.3 c) 4) | Transition procedure |
| User documentation, operations procedures | 6.4.10.3 b) 2), 6.4.10.3 c) 4) | Training documentation (material) |
| Problem record, problem management procedure | 6.4.10.3 b) 5) iii), 6.4.10.3 c) 2) | Problem report |
| Incident management procedure, incident record | 6.4.10.3 c) 2) | Incident report |
| **VALIDATION** | | |
| Validation plan, validation procedures | 6.4.11.2 g), B.1 | Validation report |
| Stakeholder requirements, operational concept, design description, user documentation | 6.4.11.3 a), 6.4.11 c) 5) | Validation plan (acceptance plan, development plan, project management plan) |
| Agreement, service catalog, measurement procedures | 6.4.11.3 a) 4) | Service level agreement |
| Stakeholder requirements, validation strategy, test procedures, test case, problem report | 6.4.11.3 b), B.1 | Validation procedure |
| Test procedure, problem record | 6.4.11.3 c) 2) | Problem report |
| **OPERATION** | | |
| Operational procedures, service catalog, service level agreement, configuration item record, configuration management (change management) plan, CM procedures, incident record | 6.4.12.2 f), 6.4.12.3 b) 4), 6.4.12.3 d), B.1 | Change request (customer support request) |
| System architecture design, system requirements, technology assessment | 6.4.12.3 a) 1) i) | Capacity plan |
| Operational procedures, development plan, CM plan | 6.4.12.3 a) 1) iii) | Release plan |
| Design description, stakeholder requirements, operational procedures | 6.4.12.3 a) 1) iv) | Operational concept |
| Operational procedures, service level agreement, measurement data | 6.4.12.3 b), 6.4.12.3 c) 4), B.1 | Monitoring and control report (operation report) |
| Concept of operations, operations procedures | 6.4.12.3 b) 6), B.1 | Service continuity and availability plan (Continuity plan) |
| Concept of operations, Incident record, Problem report, evaluation report | 6.4.12.3 c) 2), B.1 | User documentation (operational procedures) |

**Table 2** *(continued)*

| Typical input information items | ISO/IEC/IEEE 12207:2017 reference | Output information item |
|---|---|---|
| User documentation, incident report, service level agreement | 6.4.12.3 c) 2), B.1 | (Operational) problem report |
| Concept of operations, operations procedure, problem management procedure | 6.4.12.3 c) 2) | Incident management procedure |
| Problem management procedure, customer satisfaction survey, service level agreement, incident and problem reports | 6.4.12.3 d) 1) | Complaint procedure |
| Incident and problem reports, complaints, operational procedures | 6.4.12.3 d) 3) | Customer satisfaction survey |
| **MAINTENANCE** | | |
| Maintenance procedures, change requests, incident reports, service requests | 6.4.13.1, 6.4.13.3 d), 6.4.13.3 d) 4) | (Maintenance) problem report |
| Problem report, incident report, product need assessment, complaint | 6.4.13.2 d), B.1 | Change request (maintenance request) |
| Maintenance plan, user documentation | 6.4.13.3 a) 1) i), 6.4.13.3 b) 4), 6.4.13.3 d) 1), 6.4.13.3 d) 4), B.1 | Maintenance procedure (logistics procedure) |
| Organizational procedure, operations plan, development plan | 6.4.13.3 a) 5), 6.4.13.3 c) | Maintenance plan (logistics plan) |
| Logistics plan, logistics procedure, concept of operation | 6.4.13.3 c) | User documentation (logistics information) |
| Problem report, maintenance plan, system analysis report | 6.4.13.3 c) 4) | Service report (logistics report, maintenance report) |
| Incident and problem reports, complaints, operational procedures | 6.4.13.3 d) 5) | Customer satisfaction survey |
| **DISPOSAL** | | |
| Change management procedures, information management plan | 6.4.14.3 a) 1) v) | User notification |
| Disposal records, knowledge management records, asset management records | 6.4.14.3 c) 3), B.1 | Configuration status report (archive report) |
| **TAILORING** | | |
| Standard life-cycle model, standard, organizational policies and procedures, tailoring decision, agreement, stakeholder requirement | A.2.3 | Life-cycle procedure |



# 9 Records

## 9.1 General

This clause identifies the generic and specific content of records called out in ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015,

The project, organization, or service shall maintain the records needed for the required information items (documents). Records contain data structured in a permanent, readable form. Records may be generated for any life-cycle process, task, or activity in a project or organization, to include data on requirements, policies, decisions and their rationale, designs, source code, problems, reviews, requests, measurements, and test data, as well as product, quality, legal and official, financial, and historical data. Records should be maintained for retrieval in registers, repositories, or databases.

## 9.2 Record — Generic content

Purpose: Organize the data an organizational entity retains.

A record shall include the following elements:

a) date of record, date recorded, and status;

b) scope;

c) subject or category;

d) issuing organization;

e) references;

f) body; and

g) unique record identifier.

## 9.3 Specific record contents

Table 3 provides references for the applicable life-cycle process and content of specific records referenced in ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015. The generic content of records is presented in 9.1. Table 3 does not include every reference to records of results that are required to be collected, stored, and verified, such as measurement data. Problem records are included in the problem report in Clauses 8 and 10. Annex B, Table B.2 compares records by source.

NOTE 1 The term "configuration record" can be used for either a record of an individual component (item) in a configuration or the record of a system's configuration at a point in time (baseline).

NOTE 2 Service providers typically distinguish between complaints, incidents and problems. A problem is the underlying root cause of one or more incidents or complaints. For information management purposes in this document, the records for complaints, incidents, and problems have similar content and often use the same or related records management systems.

**Table 3 — Record references and contents**

| Record | Process | Reference | Record Contents |
|---|---|---|---|
| Acceptance record | Acquisition, Architecture definition | **ISO/IEC/ IEEE 12207:2017,** 6.1.1.2 d), 6.1.1.3 e) 1), 6.4.4.3 f) 2), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.1.1.3 e) 1) | Acquirer acknowledgment that acceptance criteria have been met. |
| Assessment record (audit record) | Life-cycle model management, quality management, project assessment and control, configuration management | **ISO/IEC/ IEEE 12207:2017,** 6.3.2.3 b) 10), 6.3.5.3 f) 6), 6.3.6.3 b) 4), B.1<br>**ISO/IEC/ IEEE 15288:2015**, B.1 | Information and data related to the use of the standard process for specific projects and services; result of the audit or assessment. |
| Availability record | Project assessment and control | **ISO/IEC/ IEEE 12207:2017,** 6.3.2.3 b) 5), 6.4.11.2 b), 6.4.11.3 a) 1) ii), 6.4.11.3 a) 4), 6.4.12.3 a) 1) i), 6.4.12.3 b) 4) ii), | For system resources, response time compared to SLA, actual available time divided by planned available time. |

**Table 3** *(continued)*

| Record | Process | Reference | Record Contents |
|---|---|---|---|
| Complaint record (compliment record) | Business or mission analysis, operations | **ISO/IEC/ IEEE 12207:2017,** 6.4.1.3 b) 1), 6.4.1.2 d) 1) | Customer, customer type, variance, defect, conflicting requirement, or non-conformance; complaint category, correction actions, known error, dispute information, assigned responsibility, resolution. See problem report, change request. |
| Configuration record (asset record, change record, Integration record, maintenance record) | Configuration management, infrastructure management, implementation, transition, maintenance | **ISO/IEC/ IEEE 12207:2017,** 6.2.2.3 a) 1) 6.3.5.1, 6.3.5.2 a), 6.3.5.3 b), 6.3.5.3 e), 6.3.5.3 f) 6), 6.4.8.3 c) 1), 6.4.13.2 e), 6.4.13.3 b) 4), 6.4.13.3 d), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.2.2.3 a) 2), 6.2.5.3 b), 6.4.4.3 b), 6.4.10.3 c), 6.4.13.3 d), B.1 | Functional and physical characteristics, version, location, configuration status; approvals and authorizations; associated items, associated incident or problem records, associated known errors, associated change requests, associated incident or service requests, the rationale for approval of the baseline; changes to baseline; association to requirements; indication that the item or element fulfilled the agreement or requirements; integration of configuration items, maintenance, failure and lifetime data; owner, license data, use and criticality of asset; and activities performed, such as backup, storage, maintenance, archiving, handling and delivery of configured items.<br>A software configuration registry may contain software item configuration records for one software item or a set of software items. A software item configuration record can identify generic record information, the software product (source), executable object code, archive and release data, instructions for building the executable object, and data integrity checks for the executable object, and reuse of assets stored in a configuration management database (CMDB), inventory asset register, or change log.<br>See also change request, disposal record, incident record, problem record, release record, system element description. |
| Decision record | Decision management | **ISO/IEC/ IEEE 12207:2017,** 6.3.3.3 c), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.3.3.1, 6.3.3.3 a) 1), 6.3.3.3 c), B.1 | Decision, assumptions, and rationale; outstanding actions. |
| Delivery record | Supply, configuration management, transition | **ISO/IEC/ IEEE 12207:2017,** 6.1.1.2 e) 1), 6.3.5.2 f), 6.3.5.3 d) 3), 6.4.10.3 b) 2), B.1 | Delivery of a system, information item, or other system element, date, where and by whom received. |

**Table 3** *(continued)*

| Record | Process | Reference | Record Contents |
|---|---|---|---|
| Disposal record | Disposal | **ISO/IEC/ IEEE 12207:2017,** 6.4.14.1, 6.4.14.2 e), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.4.14.1, 6.4.14.2 e) | Disposal actions for future risk and impact analysis. |
| Incident record (transition record, security incident record, service request record, major incident record, customer support record) | Maintenance, supply, verification, transition, validation, operation | **ISO/IEC/ IEEE 12207:2017,** 6.3.8.3 d) 3), 6.3.8.3 d) 8), 6.4.7.3 c) 1), 6.4.8.2 g), 6.4.8.3 a) 1), 6.4.9.1, 6.4.9.2 f), 6.4.9.3 c) 2), 6.4.10.2 f), 6.4.10.3 c), 6.4.11.1, 6.4.11.2 f), 6.4.11.3 b) 3) iv); 6.4.11.3 c) 2), 6.4.12.1, 6.4.12.3 b) 3), 6.4.12.3 c) 2), 6.4.13.3 d) 1), 6.4.13.1, 6.4.13.3 d), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.4.9.1, 6.4.9.3 c), 6.4.10.2 f), 6.4.10.3 c), 6.4.11.3 c), 6.4.12.3 b), 6.4.12.3 c), 6.4.12.3 d), 6.4.13.1, 6.4.13.2 d), 6.4.13.3 b), 6.4.13.3 d), B.1 | Incident summary, service request, associated configuration items, variance, anomaly, defect, or non- conformance; priority, incident category, root cause, fault correction actions, known error, assigned responsibility and escalation, resolution and closure.<br>See incident report, change request. |
| Information item (storage) record | Information management | **ISO/IEC/ IEEE 12207:2017,** 6.3.6.2 d), 6.3.6.3 b) 2)<br>**ISO/IEC/ IEEE 15288:2015,** 6.3.6.2 d), 6.3.6.3 b) | Information status, version description, distribution record, validity date, security classification. |
| Integration record | Integration | **ISO/IEC/ IEEE 12207:2017,** 6.4.8.3 c) 1), B.1 | Completion of integration task, items that were integrated, related anomalies. |
| Knowledge management record | Life cycle model management, human resource management, knowledge management, maintenance, disposal | **ISO/IEC/ IEEE 12207:2017,** 6.2.6.3 d) 2), 6.4.13.3 d) 1), 6.4.14.3 b) 3), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.2.1.3 c), 6.2.4.3, 6.2.6.3 d),<br>6.4.13.3 d), 6.4.14.3 b), B.1 | Knowledge, recommended applicability, usage of knowledge assets. |
| Performance control record | Operations | **ISO/IEC/ IEEE 12207:2017,** 6.2.12.3 b) 3), 6.4.12.3 c) 1) | Data on service performance against targets, the results of applying the process, service quality level. |

**Table 3** *(continued)*

| Record | Process | Reference | Record Contents |
|---|---|---|---|
| Personnel skills record (staff assignment record) | Human resource management, maintenance | **ISO/IEC/ IEEE 12207:2017,** 6.2.4.3 a) 2), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.2.4.3 a) 2), 6.4.13.3 c), B.1) | Employee identifier, skill, level of proficiency.<br>See also skill development record. |
| Problem record (known error record) | Decision management, integration, maintenance, project assessment and control, quality assurance, verification, transition, validation, operation, configuration management | **ISO/IEC/ IEEE 12207:2017,** 6.3.3.3 a) 2), 6.3.8.3 d) 3), 6.3.8.3 d) 8), 6.4.10.3 c), 6.4.11.3 c), 6.4.12.1, 6.4.12.3 c) 2), 6.4.13.3 d), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.3.2.3 c), 6.3.3.3, 6.4.9.3 c), 6.4.10.3 c), 6.4.11.3 c), 6.4.12.3 c), 6.4.13.3 b), 6.4.13.3 d), B.1 | Problem, variance, defect, or non- conformance; problem category, associated configuration item, fault correction actions, known error, root cause, assigned responsibility, resolution.<br>See also problem report, change request. |
| Project authorization record (authorization to proceed) | Portfolio management, project planning, project assessment and control | **ISO/IEC/ IEEE 12207:2017,** 6.2.3.3 a) 8), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.2.3.3 a), 6.3.1.3 c), B.1 | Project description, responsible organization, authorization period. |
| Quality activity record (audit record) | Quality assurance, configuration management | **ISO/IEC/ IEEE 12207:2017,** 6.3.8.3 d), B.1<br>**ISO/IEC/ IEEE 15288:2015,** B.1 | Execution of the quality activity, such as an audit, document review or assessment activity. |
| Release record (release request, transition record) | Supply, configuration management, transition | **ISO/IEC/ IEEE 12207:2017** 6.3.5.3 d) 1), B.1 | Identifies, tracks, and controls a release and its configuration items at the time a version (including the baseline version) is released. For software, it identifies a request to release a software version consisting of one or more software items. It lists items being delivered, including system and software item versions, traceability to specifications or previous releases, what has been changed; known errors, problems and workarounds. It may refer to installation or delivery procedures and information on the success of the release or associated problems. |

**Table 3** *(continued)*

| Record | Process | Reference | Record Contents |
|---|---|---|---|
| Requirement record | Stakeholder requirements definition, system requirements definition, portfolio management, business or mission analysis; infrastructure management, operation, maintenance | **ISO/IEC/ IEEE 12207:2017** 6.4.2.1, 6.4.2.2 e), 6.4.2.3 a) 3), 6.4.2.3 d), 6.4.2.3 f) 2), 6.4.3.1, 6.4.3.2 b), 6.4.3.3 b), 6.4.3.3 d), 6.4.12.3 a), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.2.3.3 a), 6.4.1.3, 6.4.2.1, 6.4.2.2 e), 6.4.2.3 a), 6.4.2.3 d), 6.4.3.1, 6.4.3.2 b), 6.4.3.3 b), 6.4.12.1, 6.4.12.3 a), 6.4.13.3 b), B.1 | Traceability, priority, resources, constraints, capacity, continuity and availability, usability of interactions, health and safety, information security, environment, statutory, regulatory, financial, reporting, quality.<br>See also: system requirements specification (service requirements). |
| Risk record or profile (opportunity) | Risk management, stakeholder requirements definition. Operations | **ISO/IEC/ IEEE 12207:2017,** 6.3.4.3 a) 2), 6.3.4.3 b), 6.3.1.3 c) 4), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.3.4.3 b) | Risk or opportunity statement, source, probability, consequence, acceptability threshold, priority, risk action requests, treatment strategy, status; opportunities for improvement.<br>Stored in a risk register. |
| Skill development record (Training record) | Human resource management | **ISO/IEC/ IEEE 12207:2017,** 6.4.2.3 b) 4), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.2.4.3 b) 4) | Skill area, employee identifying data, duration of training, proficiency level, certifying authority.<br>See also: Personnel skills record. |
| Test result record (implementation record, verification or validation record) | Implementation, verification, validation | **ISO/IEC/ IEEE 12207:2017**, 6.4.7b) 6), 6.4.7.3 c) 1), 6.4.9.3 b) 2), 6.4.11.3 c) 2), 6.4.11.3 c) 5), B.1<br>**ISO/IEC/ IEEE 15288:2015,** 6.4.7.3 c), 6.4.9.3 c), 6.4.11.3 c), B.1 | Result of testing or implementation, includes anomalies. |



# 10 Specific information item (document) contents

## 10.1 General

Specific contents of the information items shall be provided as required in this clause. For each information item, the generic contents as specified in Clause 7 shall be part of the required item content. The information item contents serve as a checklist that can be satisfied by the organization's content mapping, templates and information models. This clause is not intended to address all possible information item contents, or to mandate the title of the information item, nor the order or titles of the sections in an information item.

Some contents are duplicated or adapted in multiple information items and information item types. A single source repository (such as a content management system) should be used for similar contents for consistency and ease of development. The Information Management Plan, Development Plan or Project Management Plan should include the type of information and level of detail to be provided in each information item where duplications in content exist.

The contents of the information items identified in Clause 10 include those explicitly identified (but may not be required for conformance) and those implicitly identified in ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015.

In this document, the project has been chosen as the context for describing processes concerned with planning, assessment and control. The principles related to these processes may be applied in any area of an organization's management (for example, for a program, organization, or service).

Qualifiers and adjectives (such as "Software," "Architecture," "Component," "Summary," "Preliminary", "Customer's," "Stakeholders," "Enterprise") may be applied as part of the information item or document title.

Information items for systems may be specialized for software. For example, a system element description produced for a software item may be called a software element description. A change request for software may be called a software modification request.

NOTE ISO/IEC/IEEE 26531 includes requirements for content management of life-cycle information.

## 10.2 Acceptance plan

The references are ISO/IEC/IEEE 12207:2017, 6.3.1.3 b) 6) and ISO/IEC/IEEE 15288:2015, 6.3.1.3 b) 6).

The generic type is plan.

The acceptance plan should prepare for acceptance based on the defined acceptance strategy and criteria. It specifies objective criteria for determining acceptability of the deliverable work products, and any technical processes, methods, or tools required for product acceptance. Methods such as testing, demonstration, analysis, and inspection should be specified. It indicates the extent of supplier involvement. If acceptance is based on tests, it may reference or provide an overall test plan.

See also software integration test plan.

## 10.3 Acceptance report

The references are ISO/IEC/IEEE 12207:2017, 6.1.1.2 d), 6.1.1.3 e) 1), B.1 and ISO/IEC/IEEE 15288:2015, 6.1.1.3 e) 1), B.1.

The generic type is report.

The acceptance report states that an acquirer has reviewed (and possibly tested) a deliverable. It indicates whether the product is accepted, and the reasons for non-acceptance if the product or service is rejected.

## 10.4 Acquisition plan

The references are ISO/IEC/IEEE 12207:2017, 6.1.1 a) 1), 6.3.1.3 b) 6), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.1.3 b) 6).

The generic type is plan.

The acquisition plan includes the following:

a) a definition of the technical and managerial processes necessary to satisfy the software acquisition requirements, that is, the following acquisition activities: process initiation, request for proposal (RFP) (tender) preparation, contract preparation and maintenance, supplier monitoring, and acceptance and completion;

b) system requirements, planned employment of the system, contract type, organizational responsibilities, and the concept of support;

c) risks and methods to manage risks; and

d) acquisition options and criteria to include risk, cost, and benefits for each option considered.

Acquisition options include off-the-shelf product, product developed internally or contracted out, and reuse or enhancement of existing product or service, or any combination thereof.

The acquisition plan should include the following:

1) supplier selection criteria; including requirements weighting;

2) the purpose of the system or software;

3) a description of the general nature of the system and components, including software;

4) an outline of the expected life-cycle processes and the need for system development, operation, and maintenance;

5) identification of the project sponsor, acquirer organization, user organizations, and support agencies;

6) the project review and audit milestones; and

7) current and planned operating sites.

The acquisition plan may include costs and budgets for the acquisition.

## 10.5 Capacity plan

The reference is ISO/IEC/IEEE 12207:2017, 6.4.12.3 a) 1) i).

The generic type is plan.

The capacity plan documents how the supplier meets the capacity and performance requirements for a service, including continuity and availability. It identifies factors affecting capacity, including current and anticipated demand, legal and regulatory changes, changes in agreements or organizations, and implementation of new technology or procedures. It defines the approach for predictive analysis to determine thresholds when additional capacity should be provided to upgrade the service. It includes the approach for collecting and analyzing system monitoring data, such as modelling predicted or actual performance of the infrastructure systems in terms of component and resource utilization. It describes the approach for preparing schedules and cost estimates for recommended changes in capacity.

The capacity plan should be updated at least annually.

See also product need assessment.

## 10.6 Change request

The references are ISO/IEC/IEEE 12207:2017, 6.4.12.2 f), 6.4.12.3 b) 4), 6.4.12.3 d), 6.4.13.2 d), B.1 and ISO/IEC/IEEE 15288:2015, 6.1.2.1, 6.1.1.3 c) 2), 6.1.2.3 c) 2), 6.3.2.3 c) 3), B.1.

The generic type is request.

A change request (or request for change) identifies a problem, maintenance need, or desired improvement and requests modifications. The requested change may affect a contract, configuration item, system, service, hardware, software, interface, asset, or documentation. It is the input to initiate contract changes and the change management process. It may reflect requests and related actions from customers and users for assistance and consultation, or a request to retire a configuration item.

The change request should present the benefit and scope of the change, including the new or modified asset, service or functions, or problem to be corrected; with the priority (especially for emergency changes), assumptions and constraints. It may address the impact to schedules, cost, products, and test.

Routine, preapproved maintenance requests are called service requests. Change requests should be recorded and can use the same system that records complaints, service requests, incidents, or problems.

See also problem report and incident record.

## 10.7 Complaint procedure

The references are ISO/IEC/IEEE 12207:2017, 6.4.1.3 b) 1), 6.4.12.3 d) 1).

The generic type is procedure.

The complaint procedure defines what constitutes a complaint, either at the management or the user assistance level. It identifies the point of contact for formal complaints. It documents how to receive record, prioritize, investigate, review, escalate, resolve, and close complaints, and how to report on complaints and provide feedback. It may explain when complaints become recorded as incidents.

See also complaint (record), incident (record), incident report, problem management procedure, problem report, and service level agreement.

## 10.8 Concept of operations

The references are ISO/IEC/IEEE 12207:2017, 3.1.13, 6.2.3.3, 6.4.1.1, 6.4.1.3 a) 1), 6.4.2.3 b) 1), 6.4.4.3 a) 1), 6.4.12.3 c) 3) and ISO/IEC/IEEE 15288:2015, 4.1.11, 6.2.3.3 a) 1), 6.4.1.1, 6.4.1.3 a) 1), 6.4.2.3 b) 1), 6.4.12.3 c) 3).

The generic type is description.

The concept of operations is a high-level description of how the organization intends that the organization or system will operate. It includes the following:

a) a description of system capabilities from the organization owner's or users' point of view;

b) identification of stakeholder needs and the anticipated types of system users;

c) identification of interfaces to existing and future systems;

d) summary of operational, organizational, and development impacts; and

e) reviews of cost, criticality and feasibility of the intended system.

NOTE 1 The concept of operations is typically developed in Business or Mission Analysis.

The concept of operations may include the following:

1) the intended interaction of the system in its operational environment, such as scenarios, models, or activity sequences of business processes handled by the system, as the basis for defining the system requirements;

2) A description of the context of use of services, such as user culture, system constraints, operational situation, needs and requirements imposed by society, the constraints imposed by a supplier organization, and the capabilities and limiting characteristics of staff;

3) a description of the current system or situation, including background, operational policies and constraints, modes of operation, operational environment, user classes, interfaces to external systems or procedures, capabilities/functions, performance characteristics, and support environment;

4) comparison of the as-is processes to the future processes to be handled by a new system;

5) identification of change issues, including priorities, assumptions and constraints, and changes considered but not recommended.

Scenarios (or use cases) should include events, actions, stimuli, information, and interactions.

NOTE 2 ISO/IEC/IEEE 29148 provides additional guidance.

See also operational concept, product need assessment, and system requirements specification.

## 10.9 Configuration management plan

The references are ISO/IEC/IEEE 12207:2017, 6.3.5.3 a), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.5.3 a).

The generic type is plan or policy.

The configuration management (CM) plan (or change management plan or asset management plan) defines the strategy, management and technical processes for configuration management.

It describes the responsible organization for authorizing and performing these activities, and their relationship with other organizations, such as software development, suppliers and subcontractors, and maintenance. For a review board or special organization established for authorizing and performing CM activities on a project, the plan shall describe its purpose and objectives; membership and affiliations; scope of authority; and operational practices.

For software, the CM plan should include how the organization performs:

a) configuration identification, including the scheme for the identification and classification of software item records and information items and their versions, and the establishment of baselines;

b) configuration control and change management, including records management;

c) configuration status accounting; and

d) configuration audit and evaluation, including recording deficiencies, initiating corrective actions, and reporting.

The plan may include how a configuration item and its components are defined and what items are subject to change control. It may define what constitutes a major change and an emergency change (emergency release), and responsibilities for authorizing and implementing normal and emergency changes.

NOTE IEEE Std 828-2012 provides additional guidance.

See also release plan.

## 10.10 Configuration management procedure

The references are ISO/IEC/IEEE 12207:2017, 6.1.2.3 c) 1), 6.3.5.3 a) 2), 6.3.5.3 c), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.5.3 c).

The generic type is procedure.

The configuration management procedure (or asset management or change management or release and deployment procedure) presents how to perform the detailed activities for the configuration management process or change management or release and deployment activities.

The procedures include the following:

a) process implementation;

b) configuration identification and recording;

c) configuration control;

d) configuration status accounting (tracking);

e) configuration evaluation;

f) logging and analysis of the impact of change requests;

g) procedures to verify the completeness and correctness of systems and software releases;

h) release and deployment management and delivery;

i) management of emergency changes or releases when the normal procedure is insufficient; and

j) how an unsuccessful change or release can be backed out or corrected.

They should include the following:

1) procedures for initial baselining of work products and configuration items;

2) documenting the scope of changes;

3) change control board authority, membership, and procedures for approval or denial of change requests;

4) tracking of changes in progress;

5) updating configuration data; and

6) notifying concerned parties when baselines are first established or later changed.

They may include asset management procedures, such as asset retirement.

## 10.11 Configuration status report

The references are ISO/IEC/IEEE 12207:2017, 6.3.5.2 d), 6.3.5.3 e) 2), 6.3.6.2 d), 6.3.6.3 b), 6.4.2.3 f), 6.4.14.3 c) 3), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.2.3 d), 6.3.6.3 b), 6.4.14.3 c), B.1.

The generic type is report.

The configuration status report (or change management report, information management report, system release report, or archive report) provides the status of controlled configuration items, including baselines, release identifiers, and location of the item or software master version. For deactivated systems, it contains information about system disposal to trace potential future environmental, safety, or security impacts. It may include the number of changes for a project, version history, number of releases, and comparisons of releases. It may be in the same format as an audit report.

## 10.12 Contract

The references are ISO/IEC/IEEE 12207:2017, 6.1.1.2 c), 6.1.1.3, 6.1.1.3 c), 6.1.2.2 c), 6.1.2.3 c), 6.1.2.3 d), 6.1.2.3 e), B.1 and ISO/IEC/IEEE 15288:2015, 6.1.1.2 c), 6.1.1.3 c), 6.1.2.2 c), 6.1.2.3 c), 6.3.1.3, B.1.

The generic type is specification.

A contract (or agreement) is the formal agreement between an acquirer and a supplier. Informally, commitments or agreements may be specified between parts of the same organization (sometimes called a memorandum of understanding). A contract or agreement addresses the following:

a) identification of the performing organizations and their responsibilities;

b) statement of work to be performed, with tasks based on a service management process or a systems or software life-cycle model, and scope of tasks;

c) system, software, or service requirements;

d) negotiated price and payment schedule;

e) deliverables, including documentation, records, and off-the-shelf products identified;

f) schedule for suppliers to deliver the product or service;

g) proprietary rights to systems and technical data and software intellectual property rights: usage, ownership, warranty and licensing rights;

h) provisions for monitoring; reporting, verification, validation, and acceptance criteria; and

i) procedures for contract changes, exceptions, resolving disputes, and closeout, such as supplier responsibilities in the event of expected or early termination of the contract or formal agreement and the transfer of services to another party.

The contract may specify best practices, to include standards and strategies for processes, activities and tasks.

## 10.13 Customer satisfaction survey

The references are ISO/IEC/IEEE 12207:2017, 6.2.5.3 b) 2), 6.4.12.3 d) 3), 6.4.13.3 d) 5) and ISO/IEC/IEEE 15288:2015, 6.4.12.3 d).

The generic type is request.

The customer satisfaction survey requests opinions on service performance from the customers. A series of surveys may be issued to track trends in customer satisfaction.

## 10.14 Database design description

The references are ISO/IEC/IEEE 12207:2017, 6.4.5.3 a) 1), 6.4.5.3 b), 6.4.5.3 d).

The generic type is description.

The database design description is the top-level design for databases. It includes the following:

a) database overview and identification;

b) database design (including descriptions of applicable design levels, for example, conceptual, internal, logical, and physical);

c) reference to design descriptions of software used for database access or manipulation;

d) rationale for database design; and

e) database-wide design decisions about its activity from a user's viewpoint, in meeting its functional and performance requirements.

The database detailed design description covers software items used to access or manipulate data. It provides visibility into the design and information needed for database management. It is used as the basis for implementing a database and related software items. It includes the following:

1) a summary of the history of the database development, use and maintenance;

2) the database design at the conceptual, internal, logical and physical levels;

3) identification of each software item used for database access or manipulation;

4) any constraints, limitations or unusual features in the design of the database software items;

5) the types of errors affecting the database and the handling of those errors; and

6) traceability between each database or related software item, and the system or software item requirements.

The database detailed design may specify the following:

i) database access methods;

ii) data entities and their relationships;

iii) security and integrity constraints;

iv) data retention requirements; and

v) expected size of the data elements.

## 10.15 Design description

The references are ISO/IEC/IEEE 12207:2017, 6.4.5.1, 6.4.5.2, 6.4.5.3 b), 6.4.5.3 d), 6.4.10.3 a) 1) ix), B.1.

The generic type is description.

The (system or software) design description presents the characteristics of one or more (software) systems, subsystems, system or software elements, or other system components, and their interfaces. It includes the following:

a) identification of external interfaces, software components, software units, and other interfaces;

b) allocation of system/software requirements to (software) components, further refined, as needed, to facilitate detail design;

c) description of the items (systems, configuration items, users, hardware, software, etc.) that communicate with other items to pass and receive data, instructions or information;

d) the concept of execution including data flow and control flow;

e) security considerations;

f) sources for elements, such as COTS or open source; and

g) error handling.

It should include the following:

1) traceability information to both architectural components and software requirements;

2) specification of protocols; and

3) partitioning of the (software) system into design entities and description of the important properties and relationships among those entities.

The low-level software design description describes the design of a software item or interface, including software item-wide design decisions, software item architectural design and the detailed design needed to implement software. The low-level description permits software development or selection of items for reuse without the need for further information. It provides visibility into the design and information needed for software reuse and support. It is used as the basis for implementing software. It includes the following:

i) the detailed structure description of software components (to the software unit level to be built, compiled and tested);

ii) allocation of software component requirements to software items, further refined, as needed, to facilitate detail design and traceability from each software item to the software item requirements allocated to it;

iii) the software item-wide design decisions about the software item's behavioral design (how it behaves, from a user's viewpoint, in meeting its requirements, ignoring internal implementation);

iv) decisions affecting the selection and design of the software items making up a software item;

v) detailed design for software components' external interfaces to the software item, between related software components, and between related software units; and

vi) the interface entity characteristics of one or more systems, subsystems, hardware items, software items, manual operations or other system components.

It should include the following:

— descriptions of the size, frequency or other characteristics of the data elements;

— reference to known timing constraints;

— specification of protocols.

See also system architecture description and system element description.

NOTE IEEE Std 1016-2008 provides further guidance.

## 10.16 Development plan

The references are ISO/IEC/IEEE 12207:2017, 6.4.8.3 a) 1) iv), 6.4.8.3 c) 3).

The generic type is plan.

The development plan (or implementation plan) presents how the organization or project plans to conduct development activities (the software implementation strategy). It defines the scheme of actions, timing and resources governing the build, buy or reuse actions that make available a (software) system element ready for system assembly. It includes the following:

a) identification of the objectives and standards to be used in the system or software development process;

b) identification of the systems or software life-cycle model to be used to satisfy the product or service requirements, based on the project's scope, magnitude and complexity;

c) mapping of development process activities and best practices to the selected life-cycle model;

d) schedule, resources, methodology, tools, reuse strategy, action items, roles and responsibilities to be used in development and test;

e) qualification of all requirements, including safety and security;

f) references to separate plans or procedures to address different activities in the development stage or process, such as development process implementation, system requirements analysis, system architecture design, system and software requirements specification, high-level and low-level system or software design, specialty or domain engineering, software construction or coding, system element test or software unit test, system or software integration test, system or software qualification test, system or software installation, and acceptance; and

g) Identification of notations and naming conventions used in development.

NOTE Software development planning is described in ISO/IEC/IEEE 24748-5.

## 10.17 Evaluation report

The references are ISO/IEC/IEEE 12207:2017, 6.3.2.1, 6.3.2.2 a), 6.3.2.3 b) 10), 6.3.5.3 f) 6), 6.3.7.2 e), 6.3.7.3 a) 3), 6.4.1.3 d) 2), 6.4.3.3 e), 6.4.6.1, 6.4.6.3 c), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.3.3 a) 7), 6.2.4.3 a) 1), 6.3.2.3 b) 10), 6.3.5.3 e), 6.3.8.2 d), 6.3.8.3 d), 6.4.3.3 e), B.1.

The generic type is report.

The evaluation report (or audit report) includes analysis methods and results of reviews and evaluations, such as a risk assessment, quality assurance evaluation, or an evaluation of project portfolios, design constraints, candidate architectures, suppliers, customer satisfaction, effectiveness of security controls, analysis of change records or change requests, personnel needs, measurement needs or financial variances. It includes evaluation criteria. Evaluations may be based on criteria of traceability, consistency, testability, risk reduction, usability and customer satisfaction, and feasibility. The report provides information and recommendations to assist future decision-making, and it may indicate trends and recommendations for future comparable situations. For software configuration management evaluations, the report provides information about functional completeness of the software items against their requirements and the physical completeness of the software items (whether their design and code reflect an up-to-date technical description).

The audit report provides audit results and is delivered to the audited party. It identifies participants, certification of auditor's independence, agreement on resources involved in the audit, audit schedule, list of items to be audited, audit scope, audit procedures, entry and exit criteria, reference to problem records, action item responsibilities and closure criteria and status of corrective actions, compliance or conformity. It may include an audit strategy, the names of organizations audited, product or service being audited, name of auditor, date and location of audit, audit criteria, status of previous audit action items, new action items (including responsible person or organization and due date), and observations and findings.

See also monitoring and control report, progress report, review minutes, service report, validation report, and verification report.

## 10.18 Implementation procedure

The references are ISO/IEC/IEEE 12207:2017, 6.4.7.3 a) 1) ii), 6.4.73 b) 1), 6.4.8.2, B.1 and ISO/IEC/IEEE 15288:2015, 6.4.4.3 b), 6.4.7.3 b) 1).

The generic type is procedure.

The implementation procedure (or integration and test procedure) describes the methods and activities used for software construction, including implementation and integration, consistent with the life cycle model development plan, system/software requirements and design description. It details how the system or system elements are produced to satisfy the design requirements. Implementation procedures may address system hardware and software configuration; software creation, reuse, and compilation, and operational readiness, including infrastructure support. It explains how software developers support configuration management and maintain control and responsibility when multiple developers are involved. It describes conventions, notations, and tools used for traceability and system documentation. It may include procedures for unit testing or peer review during software development.

See also development plan, integration plan, test procedure, and training material.

## 10.19 Improvement plan

The references are ISO/IEC/IEEE 12207:2017, 6.2.1.3 b), 6.2.1.3 c) 1), 6.3.8.3 a) 1) vi), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.1.3.

The generic type is plan.

The improvement plan presents how the organization plans to improve a service (service improvement plan) or process (process improvement plan). The improvement plan should be linked to organizational objectives. An Improvement Policy may be included in the Improvement Plan or the Life-cycle policy.

The plan includes how processes are reviewed, and recommended improvements and change requests are identified, recorded, prioritized, authorized, performed, measured, assessed, and communicated. The improvement plan references baseline documentation of the process or service level to be improved and may specify a service or process improvement target (new level). The improvement plan identifies what information items (policies, procedures, and plans) need to be updated to reflect the improved process or service. The improvement plan may include an assessment of the organizational culture

and managers' attitudes and ability to adapt; the available resources, facilities, and tools; and financial constraints on the improvement project.

NOTE ISO/IEC TR 33014 provides additional guidance.

## 10.20 Incident management procedure

The reference is ISO/IEC/IEEE 12207:2017, 6.4.12.3 c) 2).

The generic type is procedure.

The incident management procedure (or service request management procedure or security incident management procedure) defines how to receive, record and update, classify and assign responsibility, prioritize, escalate, resolve, and close incidents or service requests, including security incidents; and how to provide feedback. It includes the definition of what constitutes a service request or an incident, a major incident, and a problem. It covers action initiation, assignment of a responsible individual for major incidents, notification, trend analysis, status tracking and reporting, and incident records management. It includes a procedure to help ensure that all security incidents are investigated and receive management response.

See also problem management procedure.

## 10.21 Incident report

The reference is ISO/IEC/IEEE 12207:2017, 6.4.10.3 c) 2).

The generic type is report.

The incident report, or security incident report, addresses performance in resolving issues, statistical reports on incident processing, issues or non-conformance (deviance) with service level agreements or contract requirements, and reported customer concerns, links to customer complaints or problems, and improvements made in response to incidents. The report may be a compilation or analysis of incidents or complaints.

It should include information for future reference to prevent problems (lessons learned) and identify a duplication of issues and trends.

It may include the following:

a) reporting control number and related control information;

b) identification of the incident reporter;

c) date and time of incident occurrence, escalation, resolution, and closure;

d) location (environment) of the incident in the system, software or information configuration item;

e) applicable contract provision or conformance requirement;

f) cause, nature, and impact (severity) of the incident;

g) immediate corrective action recommended or performed;

h) opportunities for improvement, related action items, the responsible person or organization, and the due date;

i) references to similar incidents, previously reported problems, and known errors;

j) responsible person or organization, along with appropriate confirmation showing approval and implementation of the solution;

k) incident closure information; and

l) information from organizational (internal) reviews.

NOTE ISO/IEC 20000-1 distinguishes between incidents and problems. An incident response deals with the restoration of service to the users, whereas a problem resolution is concerned with identifying and removing the causes of incidents. An opportunity report is similar, but includes analysis of potential positive events.

See also change request, incident (record), problem report and service request (record).

## 10.22 Information management plan

The references are ISO/IEC/IEEE 12207:2017, 6.2.3.3 a), 6.2.6.3 a), 6.3.6.1, 6.3.6.3 a), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.6.3 a), 6.3.6.1, 6.3.6.3 a).

The generic type is plan.

The information management plan (or documentation management plan or knowledge management plan) presents how the project or service provider plans to conduct information management or knowledge management activities during the life cycle. It includes the following:

a) descriptions of the process and activities for authorizing, developing, reviewing, storing, communicating, and maintaining knowledge or information in electronic and printed media;

b) resources, methodology, tools, action items, and roles and responsibilities, consistent with the overall project management plan;

c) provisions for content management or reuse strategy and version control (document configuration management);

d) identification of the information to be acquired, re-used, produced, and maintained;

e) who may receive or have access to restricted information;

f) the controlling template or standard for each information item (document);

g) purpose, audience, content, structure, media, and format of each information item (document and document set) to be produced;

h) schedules for information development, review, and approval; and

i) the organizational policy and process for retention or disposal of information and records after project closure.

The knowledge management plan includes the knowledge taxonomy (classification schema), definition of the infrastructure to control and retrieve knowledge assets, training to support the contributors and the users of the organization's knowledge assets, and the asset retention criteria.

NOTE ISO/IEC/IEEE 26511 provides information regarding managing information for users.

## 10.23 Information management procedure

The references are ISO/IEC/IEEE 12207:2017, 6.2.6.3 a) 1), 6.3.6.3 b), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.6.3 b).

The generic type is procedure.

The information management procedure (or knowledge management procedure, communication procedure, documentation procedure or records management procedure) details how information, such as knowledge, content, or records, is managed, controlled, and delivered or communicated. Types of information to be communicated may include policies, new or changed environments or requirements, alignment of a product or service with objectives and customer expectations. It includes procedures to identify, update, store, retrieve, and archive or remove information.

The information management procedure aligns the objectives of written and oral communication with the occasions, frequency, media, and types of communication, such as reviews, meetings, briefings, workshops, notifications, and unscheduled discussions, as well as electronic or printed communications. It identifies audiences and parties who should provide or receive information, such as managers and team members or stakeholders, suppliers and acquirers, or service provider and customers, users, and interested parties.

The documentation procedure (or document management procedure) details how information items (documents) are identified, including versions; how they are reviewed and approved, how documents are made available to users; and how stakeholders are notified about new, changed, or archived documents. It describes how documents are controlled to prevent unauthorized change or damage. It applies to printed, electronic, or web-accessible documentation.

The communication procedure explains how communications can be escalated, with contact details. It covers how contact information on communication recipients (distribution list) is maintained, schedules for periodic communications, who is responsible for communicating, and who has access to communication tools and source information (records).

NOTE ISO/IEC/IEEE 26513 provides additional detail on documentation review and approval.

See also information management plan.

## 10.24 Information security plan

The reference is ISO/IEC/IEEE 12207:2017, 6.4.12.3 a) 1) i).

The generic type is plan.

The information security plan includes the following:

a) description of how the organization identifies, controls, and protects the physical and logical security of systems, assets, and information;

b) description of how requirements for confidentiality, integrity, and availability of information are implemented;

c) description of how the system or service denies unauthorized access, permits authorized access, secures data in transmission, storage, and processing; and provides security in a cost-effective manner;

d) description of security risks and related controls, including access controls, and how security controls are operated and maintained;

e) description of systems monitoring, monitoring to detect security incidents, and security trends analysis;

f) specific procedures for the protection of sensitive personal data, personally identifiable information, and security-classified data, with investigation of security problems, and reporting; and

g) procedures for analyzing the effectiveness of information security policy, procedures, and activities.

NOTE The ISO/IEC 27000 family of standards includes detailed requirements for information security, including detection and recovery from intrusions. ISO/IEC 27002 and ISO/IEC 27001 address Information Security Management System (ISMS) processes for establishing, implementing, operating, monitoring, reviewing, maintaining and improving information security.

## 10.25 Installation report

The references are ISO/IEC/IEEE 12207:2017, 6.4.10.2 c), 6.4.10.3 c) and ISO/IEC/IEEE 15288:2015, 6.4.10.3 c), B.1.

The generic type is report.

The installation report (or transition report) provides results of the installation or migration, including the related events, installation location, version being installed, installation dates, and completed installation or activation checklist.

## 10.26 Integration and test report

The references are ISO/IEC/IEEE 12207:2017, 6.4.8.2 g) and ISO/IEC/IEEE 15288:2015, 6.4.7.3 b) 3), 6.4.8.2 g), 6.4.9.3 c), B.1.

The generic type is report.

Based on the system or software requirements, the integration and test report presents the results from implementation or integration and testing of the system, which may include software components, software units, or software combined with the hardware configuration items and manual operations. The results should demonstrate conformance with the test plan and item requirements and the integration of items into the next version of the integrated baseline. It includes an item identification, date of performance, integration and test requirements and criteria, test identifier, overview of results, detailed results, problems and anomalies encountered, and rationale for decisions. It describes problems encountered and deviations from the planned procedures. It states whether all applicable requirements were satisfied.

See also test report.

## 10.27 Integration plan

The references are ISO/IEC/IEEE 12207:2017, 6.4.8.3 a) 1) iv), 6.4.8.3 c) 3).

The generic type is plan.

The integration plan describes the strategy (approach) for integration or assembly of system elements, including provision of facilities, tools and resources and preparation for integration testing. It defines the tasks for the design of system elements; for hardware, the fabrication processes and constraints appropriate to the selected fabrication medium, technology, enabling systems, tools and equipment.

For software, the integration plan defines how the software units and components are linked or combined to form the deliverable software item. It includes traceability to the system or software requirements. It includes or references the verification plan, test requirements and test procedures.

See also development plan.

## 10.28 Interface description

The references are ISO/IEC/IEEE 12207:2017, 6.4.4.3 d) 2), 6.4.5.1, 6.4.5.2 d), 6.4.5.3 b) 5), 6.4.5.3 d), 6.4.8.1, B.1, E.5 k), E.5 l) and ISO/IEC/IEEE 15288:2015, 6.4.4.3 c), 6.4.4.3 d), 6.4.5.2 d), 6.4.5.3 d), B.1.

The generic type is description.

The interface description describes the interface characteristics of one or more systems, subsystems, domains, hardware items, software items, manual operations (processes) or other system components. It presents interface characteristics, including systems or configuration items performing the interface (including human-system and human-human interfaces), standards and protocols, responsible parties, information or data records transmitted by the interface, interface operational schedule, and error handling. It includes interface diagrams to depict the interfaces. It should define existing or permanent interface characteristics and those that are being developed or modified.

## 10.29 Life-cycle policy

The references are ISO/IEC/IEEE 12207:2017, 6.2.1.1, 6.2.1.2 a), 6.2.1.3 a), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.1.1, 6.2.1.2 a), 6.2.1.3 a), A.2.3, B.1.

The generic type is policy.

The life-cycle policy includes high-level direction at the organizational level to select, tailor, and implement a life-cycle model for a project, including identifying the organization's processes, consistent with the organization's strategies. It defines roles, responsibility, accountability, and authority for implementing life-cycle process management, including process improvement. It includes establishing criteria for entering and completing each life-cycle stage.

The improvement policy expresses the organization's commitment to improving its processes, services or products by making them more effective and efficient. Following a methodology for continual improvement such as "Plan-Do-Check-Act", the policy outlines how opportunities for improvement are evaluated and how improvement is incorporated into plans for specific processes and services. It identifies roles and responsibilities for improvement activities.

## 10.30 Life-cycle procedure

The references are ISO/IEC/IEEE 12207:2017, 6.2.1.1, 6.2.1.2 b), 6.2.1.3 a), 6.4.13.3 c), A.2.3, B.1 and ISO/IEC/IEEE 15288:2015, 6.2.1.1, 6.2.1.2 a), 6.2.1.3 a), A.2.3, B.1.

The generic type is procedure.

The life-cycle procedure (organizational procedure, process management procedure, process assessment procedure) specific steps to select, tailor, and implement a life-cycle model in a project. It defines roles, responsibility, accountability, and authority for process management for the organization or project, including process improvement. It identifies the criteria for entering and completing each life-cycle stage and for describing processes.

The process assessment procedure describes how to conduct life-cycle process improvement and how to evaluate the suitability and effectiveness of organizational processes. It may include assessment goals.

## 10.31 Maintenance plan

The references are ISO/IEC/IEEE 12207:2017, 6.4.13.3 a) 5), 6.4.13.3 c) and ISO/IEC/IEEE 15288:2015, 6.4.13.3 a), 6.4.13.3 d).

The generic type is plan.

The maintenance plan presents how the organization or project plans to meet systems availability requirements and conduct maintenance (logistics) activities. It includes the following:

a) the objectives, strategy, and approach for the systems or software maintainer to resolve problems, update the system and test new updates;

b) criteria for performing maintenance;

c) the approach to the following activities: maintenance process implementation (how to request maintenance); problem and modification analysis; modification implementation; maintenance update, review, and acceptance; migration; and software retirement;

d) the outputs of the maintenance process;

e) the resources (for example, facilities, software, hardware, tools, services, and personnel) needed to perform all aspects of maintenance, and the interrelationships among resources;

f) scheduled periods for performing maintenance; and

g) special procedural requirements during maintenance (for example, security, access rights, and documentation control).

It should identify the specific standards, methods, tools, and responsibilities for scheduled and preventive maintenance activities.

## 10.32 Maintenance procedure

The references are ISO/IEC/IEEE 12207:2017, 6.4.13.3 a) 1) i), 6.4.13.3 b) 4), 6.4.13.3 d) 1), 6.4.13 d) 4), B.1 and ISO/IEC/IEEE 15288:2015, 6.4.13.3 b), 6.4.13.3 c).

The generic type is procedure.

The maintenance procedure covers the processes for performing preventive and corrective maintenance, and providing customer support feedback to the users. It should identify the specific standards, methods, tools, and responsibilities for maintenance activities. It may identify systems or software areas that could change and needs for training. Maintenance procedures for systems cover the disassembly strategy, fault diagnosis techniques, and re-assembly and testing sequences. Maintenance procedures for software include procedures for archiving, backup, and recovery.

See also problem management procedure.

## 10.33 Measurement procedure

The references are ISO/IEC/IEEE 12207:2017, 6.3.7.3 a) 5), 6.3.8.3 b) 1), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.7.3 a) 5).

The generic type is procedure.

The measurement procedures define how to obtain measurements in an organization, project, or service. It identifies the selected measures and includes measurement data collection, storage, analysis of causes and trends, and reporting procedures. It defines how the process and the measurements are evaluated. Items to be measured may include the achievement of technical performance or service targets, customer satisfaction, and resource utilization, major issues, incidents, and problems.

## 10.34 Monitoring and control report

The references are ISO/IEC/IEEE 12207:2017, 6.2.5.3 c), 6.3.2.3 c) 1), 6.3.4.2 e), 6.3.4.3 b) 3), 6.3.7.1, 6.3.7.3 b) 4), 6.4.12.3 b), 6.4.12.3 c) 4), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.5.3 c), 6.3.4.3 b), 6.3.7.1, 6.3.7.3 b), 6.4.12.3 b), B.1.

The generic type is report.

The monitoring and control report (or problem management report) provides monitoring results. It may include the following:

a) a history of all monitoring results and control actions and results of individual monitoring audits;

b) measurements of processes and services against objectives and requirements;

c) monitoring the progress of technical performance, risk mitigation, cost and schedules; and reporting of project status;

d) actions taken to correct deficiencies in service availability and continuity; and

e) an analysis of the effects of risks on the achievement of system quality, timeliness and profitability.

## 10.35 Operational concept

The references are ISO/IEC/IEEE 12207:2017, 3.1.28, 6.4.1.2 c), 6.4.1.3 c), 6.4.2.2 b), 6.4.2.3 c), 6.4.2.3 f) 3), 6.4.4.3 a) 1), 6.4.7.3 b) 3), 6.4.12.3 a) 1) iv), B.1, E.5 h), E.5 i), F.2.5 and ISO/IEC/IEEE 15288:2015, 4.1.25,

6.4.1.2 c), 6.4.1.3 c), 6.4.2.2 b), 6.4.2.3 c), 6.4.2.3 f) 3), 6.4.4.3 a) 1), 6.4.7.3 b) 1) iv), 6.4.12.3 a) 1) iv), 6.4.12.3 c) 3), B.1, E.5 b), F.3.3.

The generic type is description.

The operational concept (OPSCON) includes the following:

a) a detailed strategy for the performance of system operations from the operator's viewpoint;

b) identification of interfaces to existing and future systems;

c) summary of operational impacts; and

d) analysis of cost and feasibility of the intended system.

The OPSCON may include the following:

1) the intended interaction of the system in its operational environment, such as scenarios, models, or activity sequences of business processes handled by the system, which fulfil the system or stakeholder requirements;

2) context of use of services, such as user culture, system constraints, operational situation, needs and requirements imposed by society, the constraints imposed by a supplier organization, and the capabilities and limiting characteristics of staff;

3) a description of the modes of operation, operational environment, user classes, capabilities and functions, performance characteristics, and support environment; and

4) identification of change issues, including priorities, assumptions and constraints, and changes considered but not recommended.

Scenarios (or use cases) should include events, actions, stimuli, information, and interactions.

NOTE 1 ISO/IEC/IEEE 29148 provides additional guidance.

See also concept of operations, product need assessment and system requirements specification.

## 10.36 Problem management procedure

The reference is ISO/IEC/IEEE 12207:2017, Annex H.

The generic type is procedure.

The problem management procedure defines how to receive, record, classify and assign, prioritize, escalate, resolve, and close problems; how to control and minimize or avoid the impact of problems; and how to provide feedback. It includes the definition of what constitutes a major problem or an incident. It covers action initiation, notification, root cause analysis, trend analysis, status tracking and reporting, and problem records management. It may include the policy for prioritizing, investigating, and resolving problems.

See also incident management procedure.

## 10.37 Problem report

The references are ISO/IEC/IEEE 12207:2017, 6.3.3.3 a) 2), 6.3.8.3 d) 8), 6.4.8.2 g), 6.4.8.3 c), 6.4.9.2 d), 6.4.10.3 b) 5) iii), 6.4.10.3 c) 2), 6.4.12.3 c) 2), 6.4.13.1, 6.4.13.3 d), 6.4.13.3 d) 4), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.3.3 a) 2), 6.4.8.3 b), 6.4.9.2 d), 6.4.10.1, 6.4.10.3 c), 6.4.11.3 c), 6.4.12.3 c), B.1.

The generic type is report.

The problem report (also called non-conformance report or corrective action request) reports problems or non-conformance (deviance) with contract requirements. It may be a consolidation of problem records.

It should include information for future reference to prevent problems (lessons learned) and identify a duplication of issues and trends.

It may include:

a) a problem reporting control number and related control information;

b) identification of the problem reporter;

c) the date and time of problem occurrence, escalation, resolution, and closure;

d) location (environment) of the problem in the system, software or information configuration item;

e) applicable contract provision or conformance requirement;

f) cause, nature, and impact (severity) of the problem;

g) problem analyses and decisions, solution or corrective action recommended;

h) related action items, the responsible person or organization, and the due date;

i) references to similar problems previously reported;

j) responsible person or organization, along with appropriate confirmation showing approval and implementation of the solution;

k) problem closure information; and

l) information from organizational (internal) reviews.

For problems occurring during testing or operation, it should include the inputs, expected results, actual results, anomalies, date and time, procedure step, environment, attempts to repeat the problem, and observers. It may report a temporary or permanent solution to a problem.

See also change request, incident report, and problem record.

## 10.38 Process description

The references are ISO/IEC/IEEE 12207:2017, 6.2.1.2 b), 6.2.1.3 a) 3), B.1.

The generic type is description.

The life-cycle process description includes the purpose and outcomes of a process. It should include the typical activities and tasks of the process, responsibility and accountability for performing the process. It may include process inputs and outputs. It may specify how the process is related to other processes or included in project stages as part of a life-cycle model.

NOTE ISO/IEC TR 24774 provides guidelines for process description.

## 10.39 Process improvement report

The references are ISO/IEC/IEEE 12207:2017, 6.2.1.2 c), 6.2.1.3 c) 2), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.1.3 c), B.1.

The generic type is report.

Based on historical, technical, and evaluation data, the process improvement report presents the results of process improvement activities, recommended changes, and technology advancement needs. It may

include recommended changes in the process model, and quality cost data to improve an organization's processes and to determine the cost of quality.

## 10.40 Product need assessment

The references are ISO/IEC/IEEE 12207:2017, 6.4.2.1, 6.4.2.2 d), 6.4.2.3 b), B.1 and ISO/IEC/IEEE 15288:2015, 6.4.2.1, 6.4.2.2 d), 6.4.2.3 b).

The generic type is report.

The product need assessment (or stakeholder needs assessment) is used to obtain consensus among an acquirer, developer, and support and user organizations on the demand for a proposed system. It may focus on communicating the user's needs to a developer or a developer's ideas to a user and other stakeholders. It includes the following:

a) the decision and rationale to acquire, develop, or enhance a system, software product or service; and

b) description of a proposed system in terms of user needs to be fulfilled, the system's relationship to existing or planned systems or procedures, and the way the system should be used (the concept of operations).

The product need assessment may include the following:

1) analysis of improvements, disadvantages and limitations, and considered alternatives and trade-offs;

2) assessments for technical, strategic, economic and market bases, and trade-off studies;

3) preliminary information on system requirements, system prototypes, possible system employment, and possible support concepts;

4) preliminary information on contract type;

5) current and potential organizational responsibilities; and

6) risk identification and risk management methods.

See also concept of operations and capacity plan.

## 10.41 Progress report

The references are ISO/IEC/IEEE 12207:2017, 6.3.2.2 f), 6.3.2.3 a) 6) and ISO/IEC/IEEE 15288:2015, 6.2.3.3 a) 7), 6.3.2.2 f), 6.3.2.3 b) 6), B.1.

The generic type is report.

The progress report provides results of monitoring the execution of the defined plan or processes for internal or external distribution. It includes a summary of decisions, monitoring results, action items, process or performance data, and recorded process improvements. It assesses the degree of adherence to the plans. It provides information about projected cost, performance, and schedule risks; any changes to previously approved plans and the related impact to the project or organization; corrective actions; risk treatment actions; and problem tracking and problem analysis.

See also service report.

## 10.42 Project management plan

The references are ISO/IEC/IEEE 12207:2017, 6.3.1.1, 6.3.1.2, 6.3.1.3, 6.3.2.2 h), 6.3.2.3 a), 6.3.2.3 c) 2), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.3.3 a) 8), 6.3.1.1, 6.3.1.2, 6.3.1.3, 6.3.2.3 a), 6.3.2.3 c) 2), B.1.

The generic type is plan.

The project management plan presents how the project processes and activities are managed, executed, measured, and controlled to assure the project's successful completion, and the quality of the deliverable product or service.

In addition to projects, management plans may be prepared for services, programs, organizations, and processes, including the portfolio management process.

NOTE 1 Depending on the project or scope of responsibility, the project management plan can be called a project technical management plan, service management plan, systems engineering management plan (SEMP), or software development plan (SDP). A service plan may be prepared when the project involves a new, existing, modified, or improved service.

It includes the following:

a) identification of the selected system or software life-cycle model to satisfy contractual requirements, and mapping of processes, activities, and tasks to the selected life-cycle model;

b) the project's organizational structure, showing authority and responsibility of each organizational unit, including external organizations and responsibilities of acquirers, suppliers, and users;

c) requirements for resource needs, such as human, financial, and technological, and the acquirer's involvement in providing resources;

d) the expected acquirer involvement in joint reviews, audits, informal meetings, reports, change requests, implementation, approval, acceptance, and access to facilities;

e) the expected user involvement in requirements specification, reviews, and evaluations;

f) security policies for the control of access to systems and software items, project information, data, and infrastructures;

g) communication planning, the means of reporting and the documents and information items to be delivered;

h) other plans to be produced as separate documents during the project; and

i) risks and risk analysis for technical, cost, and schedule risks.

It should include a Work Breakdown Structure (WBS) of the life-cycle processes and activities, including the products, services, and non-deliverable items to be provided, such as establishing the project infrastructure.

It may include the following:

1) procedures for re-planning;

2) options for developing the product or providing the service and an analysis of the risks associated with each option;

3) plans for subcontractor management, including subcontractor selection and involvement between the subcontractor and the acquirer, if any;

4) communication planning; and

5) plans for project closeout, including debriefings of project personnel and staff reassignment, archiving project materials, and preparation of a final report to include lessons learned and analysis of project objectives achieved.

For service management, it may include a description of the new or changed service, including service requirements, expected outcomes and outputs, service measurements, and activities to be performed for service delivery;

NOTE 2 ISO/IEC/IEEE 16326 provides extensive detail on the contents of the project management plan.

See also concept of operations, development plan, implementation plan, improvement plan, integration plan, risk management plan, and service catalog.

## 10.43 Proposal

The references are ISO/IEC/IEEE 12207:2017, 6.1.2.2 b), 6.1.2.3 b), B.1 and ISO/IEC/IEEE 15288:2015, 6.1.1.3, 6.1.2.2 b), 6.1.2.3 b), B.1.

The generic type is description.

The proposal (tender) is information prepared by a potential supplier to support the offer of a contract bid, including cost, schedule, risk statements, methodology to satisfy the request for proposal (RFP), experiences and capabilities, any recommendations to tailor the RFP or contract, and the signature of the supplier's approving authority. Informally, proposals may be prepared within an organization.

NOTE ISO/IEC/IEEE 26512 describes contents of a proposal for information products or services.

## 10.44 Quality management plan

The references are ISO/IEC/IEEE 12207:2017, 6.2.5.3 a), 6.2.5.3 c), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.5.3 a), 6.2.5.3 c).

The generic type is plan.

The quality management plan (or quality assurance plan) presents the approach to fulfil the quality objectives of the organization, program, project, product, or service.

NOTE 1 A QA plan is more focused on the verification and control for a project than for the entire organization.

It includes the following:

a) the project or organization's quality objectives and the organization's quality policies;

b) product or service improvement plans;

c) product and service assessment plans, with assessment and audit requirements, criteria, responsibilities, and allocations to standards,

d) methods, procedures or tools needed for quality management;

e) identification of required records of the quality activities and tasks, as well as records of problems and problem resolutions;

f) the configuration management of quality-related records;

g) specific reviews, assessments and audits to be performed, with references to the associated testing, verification, validation, problem reporting, and corrective action processes, including work products and records to be reviewed and plans for recording and communicating the audit results;

h) assessment of configuration control practices for systems or software configuration items and media; and

i) required coordination of software quality assurance activities with other project activities.

NOTE 2 ISO 9001 contains requirements for life-cycle planning as part of a quality management system. See also ISO 10005.

## 10.45 Quality management policy

The references are ISO/IEC/IEEE 12207:2017, 6.2.5.2 a), 6.2.5.3 a), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.5.2 a), 6.2.5.3 a), 6.3.8.2 a), B.1.

The generic type is policy.

The quality management policy defines the framework for establishing and reviewing quality objectives. It explains how quality objectives are met, quality management, quality assurance, software audit, verification, validation, and process improvement processes. It expresses the personal contribution of all involved to the quality of the product or service.

NOTE Quality management policy can be included in the quality management plan or quality management procedures or in a separate set of policies.

## 10.46 Quality management procedure

The references are ISO/IEC/IEEE 12207:2017, 6.2.5.2 a), 6.2.5.3 a) 1), 6.3.8.2 a), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.5.2 a), 6.2.5.3 a), 6.3.8.2 a), B.1.

The generic type is procedure.

The quality management procedure (or quality assurance procedure or audit procedure) defines the framework for establishing and reviewing quality objectives. It details how the quality aspects of the program, product or service are performed. It includes procedures for contract reviews, inspections, assessments, reviews and audits. It addresses procedures for the tasks of testing, problem reporting, process improvement, and corrective action as included in the quality management or quality assurance processes.

The audit procedure includes the audit criteria, scope, frequency, and methods for conducting audits. It outlines how deficiencies are recorded and reported. It identifies who is responsible for planning and conducting the audit, reporting the results, maintaining the audit records, and initiating and performing corrective action.

## 10.47 Release plan

The references are ISO/IEC/IEEE 12207:2017, 6.4.12.3 a) 1) iii) and ISO/IEC/IEEE 15288:2015, 6.4.10.3 a).

The generic type is plan.

A release management plan provides overall direction for release planning, including coordination with configuration management and change management. It includes the following:

a) expected frequency and types of releases, including emergency releases;

b) how releases are authorized, scheduled, coordinated, and tracked;

c) schema for uniquely identifying a release and its contents;

d) the approach for grouping changes and configuration items into a uniquely identified release and versions; and

e) approach for automating releases.

A specific release plan includes the applicable details for a specific release. The release plan presents how a system, service, or software product or software release is released to a new environment, with the release dates and schedule. The release plan includes the following:

1) the deliverables, including updates to related SLA, operational procedures, and user documentation;

2) approach for verifying (testing) and accepting the release.

3) the related change requests, identified configuration items, known errors, and problems;

4) identified risks, potential problems; and

5) plans for reversing or correcting an unsuccessful release (contingency back-out plan).

A release policy may be included in a release and deployment management plan or as a separate set of policies.

See also configuration management plan and policy, configuration management procedure (release procedure), and transition plan.

## 10.48 Request for proposal (RFP)

The references are ISO/IEC/IEEE 12207:2017, 6.1.1.2 a), 6.1.1.3 a) 2), B.1 and ISO/IEC/IEEE 15288:2015, 6.1.1.2 a), 6.1.1.3 a) 2), B.1.

The generic type is request.

The request for proposal (RFP) is the acquirer's request for information and commitments needed from the supplier that are required to be included in the potential supplier's proposal. It announces the acquirer's intention to potential bidders to acquire a specified system, software product or software service. It includes the following:

a) the stakeholders' system requirements;

b) scope statement;

c) bidder instructions;

d) the scope of tasks to be referenced in the draft contract;

e) deliverable product list;

f) terms and conditions;

g) contract milestones (for example, review and audit of supplier progress);

h) control of subcontracts;

i) procedural and technical constraints (for example, target environment); and

j) supporting processes and their performing organizations, including responsibilities (if other than supplier), so suppliers can, in their proposals, define the approach to each of the specified supporting processes.

It may outline the supplier selection criteria.

NOTE Actual contents depend upon the legal environment. Also known as acquisition requirements, acquisition document, call for proposals (CFP), invitation to tender (ITT), request for tender.

## 10.49 Resource request

The references are ISO/IEC/IEEE 12207:2017, 6.2.1.2 c), 6.3.1.3 c) 2), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.1.3 c) 2).

The generic type is request.

A request for resources arises from project or service planning and is directed to management who can commit the resources and, if necessary, approve modifying the contract.

## 10.50 Review minutes

The references are ISO/IEC/IEEE 12207:2017, 6.3.2.3 c) 1), 6.3.7.3 b) 4), B.1 and ISO/IEC/IEEE 15288:2015, 6.2.3.3 c) 1), 6.3.7.3 b) 4).

The generic type is report.

The review minutes (or joint review minutes or service review minutes) provide a report of a review, such as a meeting between the acquirer and the supplier or the service provider and the customer. Minutes include attendees, agenda, product or service under review, objectives, entry and exit points for the review, main discussion topics, assumptions, presentation material, decisions relating to resources and improvement of the service management system and services, approvals, action items and their status and closure criteria. Minutes document the evaluation of status and conformity of products and services, and activities and schedule status. Minutes include problems found and their resolution or anticipated resolution.

## 10.51 Risk action request

The references are ISO/IEC/IEEE 12207:2017, 6.3.4.3 b) 2), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.4.3 b) 2), B.1.

The generic type is request.

The risk action request is submitted from the project or service management organization to the stakeholders. It includes recommended alternatives for risk treatment.

## 10.52 Risk management plan

The references are ISO/IEC/IEEE 12207:2017, 6.3.4.3 a), B.1 and ISO/IEC/IEEE 15288:2015, 6.3.4.3 a).

The generic type is plan or policy.

The risk management plan presents the conditions under which risk management is performed and the context of risk management, such as management and technical objectives, assumptions, and constraints. It defines the approach to the identification, assessment, treatment (including avoidance, mitigation, and contingency plans), and monitoring of risks, as well as the approach for registering risks, creating and maintaining risk profiles (records), and reporting risk status. It establishes risk categories and risk assessment criteria. It identifies the risks to service continuity and availability.

NOTE ISO/IEC 16085 provides additional guidance.

## 10.53 Service catalog

The reference is ISO/IEC/IEEE 12207:2017, 6.2.3.1.

The generic type is description.

The service catalog describes the information technology services available for customers, with the dependencies between services and service components. For each service, it defines the service; identifies those responsible for providing the service; includes the schedule of service availability and unavailability, access control provisions and security arrangements, and contact points for requesting assistance or reporting incidents. It summarizes target service levels as further specified in the service level agreement (SLA).

See also complaint procedure and risk management plan.

## 10.54 Service continuity and availability plan

The references are ISO/IEC/IEEE 12207:2017, 6.4.12.3 b) 6), B.1.

The generic type is plan.

The service continuity and availability plan, also known as a continuity plan, continuity of operations plan (COOP) or disaster recovery plan, may also include service continuity and availability strategy and policy. It describes the provisions to make services available under normal conditions and in the

event of failure of a site or a system component (recovery procedure). The service continuity and availability plan shall be available in printed media to all concerned, for ready access in the event of system unavailability. A copy of the service continuity plan, applicable agreements and contracts shall be available at a secure remote or virtual location where it is planned that alternate service can be provided. It includes the following:

a) availability requirements for the service as stated in the service level agreements, including access rights, end-to-end availability, and service restoration times;

b) availability targets for service restoration;

c) the business impact of services unavailability for various durations and the priorities for restoring services;

d) criteria for invoking the plan (threshold for events and major incidents);

e) procedures and alternate means of providing service (such as paper-based records) while automated systems are being restored;

f) roles and responsibilities for system recovery, including points of contact of people authorized to invoke contingency plans and act in emergencies;

g) procedures for restoring service;

h) procedures for testing the continuity plan; and

i) advance activities to prepare for service disruptions, such as off-site system backups or arrangements with emergency service providers.

See also verification plan.

## 10.55 Service level agreement (SLA)

The references are ISO/IEC/IEEE 12207:2017, 6.1.1.2 c), 6.1.2.2 c), 6.4.11.3 a) 4).

The generic type is specification.

An SLA is a documented agreement between the service provider and customer that identifies services and service targets. The SLA is the service level requirements document. The SLA should be authorized by the service supplier and acquirer. It specifies the following:

a) requirements and scope of the service;

b) service targets and workload limits (upper and lower) and exceptions;

c) responsibilities of both the supplier and the customer;

d) details of service availability (hours of service), which may be referenced in the service catalog;

e) procedures and points of contact for incident and problem management, escalation, notifications, and complaints;

f) measures and acceptance criteria, such as performance, availability, reliability, service period, and operator and maintenance responsiveness; and

g) communication process for periodic reporting on the achieved service level to the customer.

## 10.56 Service report

The references are ISO/IEC/IEEE 12207:2017, 6.4.13.3 c) 4) and ISO/IEC/IEEE 15288:2015, 6.4.13.3 d), B.1.

The generic type is report.

The service report informs management or customers about the performance of service management activities, and the level of service provided. It reports results and reviews of performance by the service provider against the service targets, SLA and other contractual commitments and customer satisfaction measurements and analyses. It is issued periodically or following major events, transitions, and changes in the service. It includes a summary of significant events, monitoring results, trends and historical analysis, customer satisfaction measurements, and recorded service improvements. It provides information about non-conformities, options for changes, complaints, action items, corrective actions; anticipated problems, and risk treatment actions. It includes information concerning workload volume and scheduled workloads, trends and periodic changes. It may include cost reports and comparisons of capacity to service performance for the service, specific components, or exceptional events.

See also audit report, evaluation report, incident report, monitoring and control report, and progress report.

### 10.57 Supplier management procedure

The reference is ISO/IEC/IEEE 12207:2017, 6.1.1 c).

The generic type is procedure.

The supplier management procedure explains how to manage the supplier to help ensure delivery of contracted services and supplies. It includes the communication, reporting, and management control processes, a procedure for collecting information about supplier performance, and a procedure for resolving contractual disputes. It includes documentation of the roles and relationships of the lead and second-tier suppliers. It includes a procedure for ending an agreement and transitioning to a new supplier.

See also contract and project management plan.

### 10.58 System architecture description

The references are ISO/IEC/IEEE 12207:2017, 6.2.2.2 b), 6.4.4.1, 6.4.4.2, 6.4.4.3 b), 6.4.3.3 c), B.1 and ISO/IEC/IEEE 15288:2015, 6.4.4.1, 6.4.4.2, 6.4.3.3 c), 6.4.4.3 b), B.1.

The generic type is description.

The system architecture description (or software architecture description, where software is considered as a system) includes the following:

a) the fundamental conception of a system-of-interest in terms of its purpose, system qualities (such as feasibility, performance, safety, security, usability, and interoperability), constraints, and design decisions and rationale;

b) identification of the architecture's stakeholders and the stakeholders' architecture-related concerns. Key stakeholders include the client, acquirers, users, certifiers, vendors, maintainers, and operators;

c) definitions of viewpoints to document the procedures for creating, interpreting, analyzing, and evaluating architectural data; and

d) one or more views of the system. Each architectural view is a representation of the complete system from the perspective of one or more system concerns, for its stakeholders.

The system architecture description should do the following:

1) provide rationale for architectural decisions, with traceability information to system requirements;

2) establish the principles for partitioning the system into system elements (such as hardware, software, and operations) and design elements;