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Systems and software engineering — Content of systems and software life cycle process information products (Documentation)

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

Reference number
ISO/IEC 15289:2006(E)

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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.

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

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

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.

ISO/IEC 15289 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

This International Standard is based on ISO/IEC 12207:1995, with Amendments 1 and 2, ISO/IEC 15288:2002, and IEEE/EIA 12207.1-1996, *Industry implementation of ISO/IEC 12207:1995*. The IEEE Computer Society participated as a liaison organization in the development of this International Standard.

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Introduction

This International Standard was developed to assist users of ISO/IEC 15288:2002 or ISO/IEC 12207:1995/AMD 1:2002/AMD 2, to manage information items as products of the system or software life cycle processes. In many cases, ISO/IEC 12207:1995 may state that the result of a process must be documented or may imply the need for a document (or information item). ISO/IEC 12207:1995 clauses often do not specify the contents of documents. The indicated information items in ISO/IEC 12207:1995 aid in planning, producing, and evaluating the results of the life-cycle processes. Information items are essential to preserving what transpired when using system life cycle processes, and may be identified as deliverable documents.

This International Standard may be used as a conformance or a guidance document for projects and organizations claiming conformance to ISO/IEC 15288:2002 and/or ISO/IEC 12207:1995 and amendments. This International Standard's nomenclature for information items, document titles and contents is informative.

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Systems and software engineering — Content of systems and software life cycle process information products (Documentation)

1 Scope

This International Standard assumes an organization is implementing life cycle processes in conformance with ISO/IEC 15288:2002 or ISO/IEC 12207:1995, with Amendments 1 and 2. ISO/IEC 15288:2002 defines a set of processes for managing and performing the stages of a systems life cycle. It defines an Information Management process, but "does not detail documentation in terms of name, format, explicit content, and recording media" (1.3). ISO/IEC 12207:1995 with AMD 1 and 2, establishes a common framework for software life cycle processes, and in passing identifies or requires a number of documentation items.

The purpose of this International Standard is to guide users of ISO/IEC 12207:1995 (with Amendments 1 and 2) and ISO/IEC 15288:2002 in identifying and planning the specific information items to be produced during systems and software life cycles. As stated in G.5 of IEEE/EIA 12207.0:1996,

> The use of the Documentation process should achieve the following objectives:
>
> a) Identify all documents to be produced by the process or project;
>
> b) Specify the content and purpose of all documents and plan and schedule their production;
>
> c) Identify the standards to be applied for development of documents;
>
> d) Develop and publish all documents in accordance with identified standards and in accordance with nominated plans;
>
> e) Maintain all documents in accordance with specified criteria.

This International Standard identifies the purpose and content of all identified Systems and Software Life Cycle information items. The information item contents are defined according to generic document types, as presented in Clause 7, and the specific purpose of the document (Clause 10). The generic document types (which may be referred to as information item types to conform to [3]) are to be used to identify the information necessary to support the ISO/IEC 15288:2002 agreement, enterprise, project, and technical processes; and the ISO/IEC 12207:1995, primary, supporting, and organizational life cycle processes.

This International Standard identifies records and information items based on analysis of references in ISO/IEC 15288:2002 and ISO/IEC 12207:1995, which in some cases provide partial or complete outlines for the content of specific documents. However, the requirements for the life-cycle processes do not uniquely and unambiguously state the requirements for the information items contents or the information needed by a user of an information item. Moreover, the information from the life-cycle processes may overlap or may be created and revised at different times. In short, the analyzed references do not result in a logically complete list of information items. For example, for each life-cycle process, it would be possible to prepare a plan, procedures, and reports, as well as numerous records, requests, descriptions and specifications. Such an elaboration of a

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documentation schema would be more rigorous than specified by either ISO/IEC 15288:2002 or ISO/IEC 12207:1995. Thus, information items may be combined or subdivided as needed for project or organizational purposes, as further defined in Clause 2, Applicability, and Clause 3, Conformance.

NOTE ISO/IEC 15504-5 provides guidance on the content of work products as well as information items. Its guidance includes descriptions of a set of information items (documents), which an assessor may encounter. The information items in its guidance may be produced by combinations and subdivisions of the required information items in this International Standard.

This International Standard:

a) Addresses the technical information needed by those involved in ISO/IEC 15288:2002 and ISO/IEC 12207:1995 (with Amendments 1 and 2) processes;

b) Is intended for use in an agreement process as described in ISO/IEC 15288:2002 or a two-party situation as described in ISO/IEC 12207:1995. The two-party situation may range from an informal agreement within an organization or to a legally binding contract between organizations;

c) May be used by a single party as self-imposed tasks;

d) May be applied to any type of project and life-cycle process;

e) May be applied to any of the activities and tasks of a project and system or software product or service life cycle;

f) Is not limited by size, complexity or criticality of the project;

g) May be applied to all forms of information items, information item content and document delivery media;

h) May be used for information items described in Commercial-Off-the-Shelf (COTS) products when the COTS product is specified as an integral part of a deliverable under a two-party situation (See ISO/IEC 12207:1995, clause 1.2).

i) May be used to develop information items that provide evidence for process assessment performed with respect to ISO/IEC 15504: Process Assessment, and to guide process improvement activities.

Not included in the scope of this International Standard are:

— Information items showing only approval of an ISO/IEC 12207:1995 subclause, such as ISO/IEC 12207:1995, 5.1.1.3;

— Any ISO/IEC 15288:2002 or ISO/IEC 12207:1995 subclause not explicitly or implicitly identifying the recording of information about an activity or task, for example, ISO/IEC 12207:1995, 5.1.1.4;

— The form and content of approving information items or organizational management information such as business strategies, human resources and investment policies, personnel selection criteria, or payroll data;

— Instructions on combining or subdividing information items and information item contents of a similar nature;

— Guidance on selecting an appropriate presentation format, delivery media, and maintenance technology for system and software life cycle data, records, information items, or documentation, such as electronic publishing systems or data repositories;

NOTE ISO/IEC 18019-2004 provides guidance on formats for software user documentation.

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2 Applicability

This International Standard is applicable for use by:

a) Project Managers responsible for the Information Management process of ISO/IEC 15288:2002 (5.4.8) during a system life cycle;

b) Project Managers responsible for identifying information item requirements and document contents when using ISO/IEC 12207:1995, or any other software engineering life-cycle process, to help determine what should be documented, when the documentation should occur, and what the contents of the documents should be;

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

d) Individuals who write or support the design and development of systems and software information items;.

e) Individuals responsible for identifying information items required to claim conformance with ISO/IEC 12207:1995 (and Amendments 1 and 2) or consistent with ISO/IEC 15288:2002;

f) Individuals undertaking system or software process improvement in their organizations.

ISO/IEC 12207:1995 does not always specify when software information items are to be prepared, nor does it identify information item contents. This International Standard provides a mapping of ISO/IEC 15288:2002 and ISO/IEC 12207:1995 clauses with a set of recommended information items. Users should map this International Standard to the requirements and needs of their agreements, or project and organizational procedures.

Reviewing and understanding the requirements, needs and background of users and stakeholders are essential to applying this International Standard accurately and economically, since some information items are designed for various purposes and user groups:

— To provide information to specialized types of users who may not be a part of a particular project.

— To address the same type of user but in environments not normally coexisting in the same effort.

— To aid both users who are expected to be computer-literate and understand technical terminology, and users who may not have this background.

The type of decision to be made, or work to be performed, by users of the information should be considered before that information is prepared.

3 Conformance

This International Standard may be used as a conformance or a guidance document for projects and organizations claiming conformance to ISO/IEC 15288:2002 and/or ISO/IEC 12207:1995 with Amendments 1 and 2.

3.1 Definition of Conformance

Having tailored the selected system or software life cycle processes, to claim conformance to this International Standard, the organization or project shall prepare the information items identified in this International Standard applicable to the selected and tailored ISO/IEC 15288:2002 processes or the selected and tailored ISO/IEC 12207:1995 activities and tasks.

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In this IS 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 information item titles in Clause 10 is not required to claim conformance with this IS. The generic and specific record and information item contents in clauses 7, 9, and 10 of this International Standard may be tailored to satisfy requirements of an organization, its projects, or agreements based on the tailored conformance to ISO/IEC 15288:2002 or ISO/IEC 12207:1995 and amendments. In tailoring, information item titles and contents recommended by this International Standard may be modified (added to, deleted from, combined or reworded). The contents of the information items shall correspond to the selected and tailored processes, activities, and tasks.

Throughout this International Standard, "shall" is used to express a provision that is binding, "should" to express a recommendation among other possibilities, and "may" to indicate a course of action permissible within the limits of this International Standard. When using this International Standard as a guide, replace the term “shall” with “should”.

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

3.2 Conformance Situations

Conformance may be interpreted differently for various situations. The relevant situation shall be identified in the claim of conformance:

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

NOTE One possible way for an organization to deal with clauses that cite "the contract" is to specify that they shall be interpreted in the project plans for any particular project.

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

NOTE A project’s claim of conformance is typically specified with respect to the organization’s claim of conformance.

c) When conformance is claimed for a multi-supplier program, 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 program, as a whole, may claim conformance if each of the required records and information items are produced by an identified party. The program plans shall document the tailoring of the records and information items, and their assignment to the various parties, as well as the interpretation of any clauses of the standard that reference "the contract."

d) When conformance is claimed for an information item, the item shall contain the generic contents required in clause 9 of this standard and the specific content required in clause 10.

3.3 Type of Conformance

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

a) Tailored: The minimum set of required information items is determined by tailoring of processes and activities in accordance with annex A of ISO/IEC 12207:1995 or Annex A of ISO/IEC 15288:2002.

b) Absolute: The minimum set of required information items is all of those specified as mandatory (that i, clauses containing "shall") in the text of the standard.

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

4 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 12207:1995 /AMD 1:2002/AMD 2:2004, *Information technology — Software life cycle processes*

ISO/IEC 15288:2002, *Systems engineering — System life cycle processes*

5 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO/IEC 12207:1995, ISO/IEC 6592:1999 and the following apply.

5.1
approval
written notification, by an authorized representative, that an information item appears to satisfy requirements, is complete.

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

5.2
COTS
Commercial-Off-The-Shelf; an item that a supplier offers to several acquirers for general use

5.3
criteria
specific data items identified as contents of information items for appraising a factor in an evaluation, audit, test or review

5.4
database
organization of data, usually controlled within an automated database management system(s)

NOTE Documentation of each database is required in ISO/IEC 12207, 5.3.7.1

5.5
document
generic term for separately identifiable, published (in electronic or printed media) information

5.6
documentation plan
plan identifying the documents to be produced during the system or software life cycle

5.7
information item
a separately identifiable body of information that is produced and stored for human use during a system or software life cycle

5.8
information item content
information included in an information item, associated with a system, product or service, to satisfy a requirement or need

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EXAMPLE Information for plans, specifications, designs, test information and manuals.

5.9
information item type
a group of information items consistent with a pre-arranged set of generic criteria

EXAMPLE A “plan” is the information item type for all plans and “report” is the information item type for all reports.

5.10
software item
resulting software source and executable code from the integration of software units and software components

NOTE Includes identification and description of the software product, software life-cycle data, archive and release data and instructions for building the executable object code.

6 Life cycle data and information items

6.1 Life cycle data characteristics

This IS specifies how life cycle data is managed in information items. The required data from the life-cycle process shall be organized into records or a logical part of another information item and be consistent with an information item generic type. An information item shall include its generic information item contents (Clause 7).

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

a) Unambiguous: Information is unambiguous if it is described in terms that allow only a single interpretation, aided, if necessary, by a definition.

b) Complete: Information is complete if it includes necessary, relevant requirements and/or descriptive material, responses are defined for the range of valid input data, and terms and units of measure are defined.

c) Verifiable: Information is verifiable if a person or tool can check it for correctness.

d) Consistent: Information is consistent if there are no conflicts within it.

e) Modifiable: Information is modifiable if it is structured and has a style such that changes can be made completely, consistently, and correctly while retaining the structure.

f) Traceable: Information is traceable if the origin of its components can be determined.

g) Presentable: Information is presentable if it can be retrieved and viewed.

6.2 Records compared to other information items (documents)

A record is a special type of information item containing a unit of structured data. Consistent with the ISO 9000 series, the purpose of a record is to state results achieved or to provide evidence of activities performed by an organizational entity. Records gain their value from being combined with other records in a set, typically by inclusion in structured databases or repositories where the individual records are available for retrieval and analysis. Records hold the factual data (evidence) for the other generic information types. 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 other information items (documents) such as a plan or procedure.

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The other 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 activities and tasks of the standard. Many of the clauses in ISO/IEC 15288:2002 and ISO/IEC 12207:1995 require life cycle data to be produced or recorded. The clauses of ISO/IEC 15288:2002 and ISO/IEC 12207:1995 do not, however, dictate the content, location, format, or media to be used to record and maintain the data.

When choosing appropriate data to be recorded, users should also determine where in the organization or project's records the data should be recorded. Records may be maintained in databases, registers, repositories, archives, or other information management systems. Projects shall establish record retention policies in consideration of system life cycle and organizational needs for the data. Annex B of this International Standard lists other standards and guides, which may be consulted for helpful suggestions on choosing appropriate data records, data formatting, and data packaging. Clause 7 defines the content of generic records and Clause 9 recommends content for specific records.

6.4 Management of information items (documents)

The management of information items shall be performed by applying the Documentation Process of ISO/IEC 12207:1995 and/or the Information Management Process of ISO/IEC 15288:2002. The Documentation 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 items (documents).

Managers of documents perform the documentation process to achieve the following objectives:

a) Identify all documents to be produced by the process or project;

b) Specify the content and purpose of all documents and plan and schedule their production;

c) Identify the standards to be applied for development of documents;

d) Develop and publish all documents in accordance with identified standards and in accordance with nominated plans;

e) Maintain all documents in accordance with specified criteria.

NOTE Annex A provides a procedure for identifying information items and their contents during information management and documentation planning.

6.4.1 Developing the documentation plan

The tasks to be performed in the Documentation Process shall be identified in a Documentation Plan. When developing the Documentation Plan, consideration should be given to policies and procedures of the acquirer and supplier. ISO/IEC 15910 contains requirements for documentation plans for software user documentation. The Documentation Process for each project should be considered as part of a repeatable process for the acquirer and supplier.

NOTE A Documentation Plan may be created for an entire organization or to cover multiple projects that reuse document content.

6.4.2 Managing and controlling information items

Projects and organizations may publish their record descriptions and tailored information item descriptions in a data dictionary. This practice helps the document management, development, and maintenance activities.

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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, consider providing a reference to these information items rather than reproducing the information.

7 Generic information types and information items

7.1 Overview

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 International Standard defines the life cycle data of ISO/IEC 12207:1995 and ISO/IEC 15288:2002 by relating tasks and activities to the following generic information item types:

a) record,

b) description,

c) plan,

d) procedure,

e) report,

f) request,

g) specification.

Generic information item (document) contents are mapped to the recommended output information items shown in column 3 of Tables 1 and 2.

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

7.2 Record – generic content guidelines

Purpose: Characterize the data an organizational entity retains.

NOTE Consistent with the ISO 9000 series, the purpose of a record is to state results achieved or to provide evidence of activities performed by an organizational entity.

A record should include the following:

a) Date of record, date recorded, and status

b) Scope

c) Subject or category

d) Issuing organization

e) References

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f) Body

g) Unique record identifier

h) Recommended records are listed in Clause 9, Table 3.

7.3 Description – generic content guidelines

Purpose: Represent a planned or actual function, design, or item

A Description includes:

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

j) Change history

Recommended output information items:

— Database design description

— Database detailed design description

— High-level software design description

— Interface description

— Low-level software design description

— Proposal

— Release record

— Software unit description

— System architecture description

— System description

— System element description

— System life cycle description

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7.4 Plan – generic content guidelines

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

A Plan includes:

a) Date of issue and status

b) Scope

c) Issuing organization

d) References (applicable policies, laws, standards, contracts, and other plans and references)

e) Approval authority

f) Approach for technical and management review

g) Other plans (plans or task descriptions that expand on the details of a plan)

h) Planned activities and tasks

i) Identification of tools, methods, and techniques

j) Schedules

k) Budgets and cost estimates

l) Resources and their allocation

m) Responsibilities and authority

n) Interfaces among parties involved

o) Risks and risk assessment and mitigation measures

p) Quality assurance and control measures

q) Environment, infrastructure, security, and safety

r) Training

s) Glossary

t) Change procedures and history

u) Termination process

Recommended output Information Items

— Acceptance plan
— Acquisition plan
— Asset management plan
— Configuration management plan
— Development plan
— Documentation plan

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- Domain engineering plan
- Infrastructure plan
- Installation plan
- Maintenance plan
- Migration plan
- Operations plan
- Production plan
- Project management plan
- Quality assurance plan
- Retirement plan
- Reuse plan
- Risk management plan
- Software integration test plan
- Software unit test plan
- Strategic plan
- Training plan
- Validation plan
- Verification plan

7.5 Procedure – generic content guidelines

Purpose: Define in detail when and how to perform certain activities or tasks, including tools needed.

A procedure includes:

a) Date of issue and status

b) Scope

c) Issuing organization

d) References

e) Approval authority

f) Relationship to plans and other procedures

g) Authoritative references

h) Inputs and outputs

i) Ordered description of steps to be taken by each participant

j) Error and problem resolution

k) Glossary

l) Change history

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Recommended output information items:

— Acceptance procedure
— Configuration management procedures
— Database test procedure
— Maintenance procedures
— Operational test procedures
— Organizational procedures
— Problem resolution procedure
— Process assessment procedure
— Qualification test procedure
— Quality management procedure
— Risk management procedure
— Software unit test procedure
— Software user documentation
— Supplier selection procedure
— System integration test procedure
— Training documentation
— User documentation

7.6 Report – generic content guidelines

Purpose: Describe the results of activities such as investigations, assessments, and tests.

A Report includes:

a) Date of issue and status
b) Scope
c) Issuing organization
d) References
e) Summary
f) Introduction
g) Context
h) Message
i) Contributors
j) Body
k) Conclusions and recommendations
l) Bibliography
m) Glossary
n) Change history

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Recommended output information items:

- Acceptance review and testing report
- Acquisition report
- Audit acknowledgement report
- Audit report
- Configuration status report
- Database test report
- Evaluation report
- Installation report
- Integration and test report
- Joint review minutes
- Maintenance problem/modification report
- Modification notification report
- Modification retirement report
- Modification test report
- Monitoring and control report
- Problem report
- Process improvement analysis report
- Product need assessment
- Progress report
- Qualification test report
- Retirement notification report
- Software unit test report
- Validation report
- Verification report

7.7 Request – generic content guidelines

Purpose: Record information needed to solicit a response.

A Request includes:

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

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Recommended output information items:

— Change request

— Request for proposal (RFP)

7.8 Specification – generic content guideline

Purpose: Specify a required function, performance or process (such as, requirements specification, standard, policy).

A specification includes:

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

j) Change history

NOTE The generic type of specification may be used to prepare policies when they are issued as separate documents. Specifications should use a well-defined syntax. Specifications should be internally consistent in terminology, definitions, and requirements. Unique specifications should be defined once to prevent inconsistent updates. Each requirement should be uniquely identified.

Recommended output information items:

— Contract

— Software requirements specification

— System requirements specification

— Validation test specification

8 Mapping of information items to the life cycle

In this clause, information items are identified and mapped to the process where they are referenced as output. These references may be normative requirements, recommended output, examples, or notes.

This International Standard identifies information items that are not explicitly specified by title in ISO/IEC 15288:2002 or ISO/IEC 12207:1995 as amended. In these cases the base standards explicitly call out information to be communicated, documented, described, planned, specified, reported, recorded, or requested. In numerous clauses, the life cycle standards indicate that something (for example, a policy or strategy) is to be "defined." However, definition does not in itself indicate that a specific information item will be produced.

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Table 1 maps ISO/IEC 15288:2002 clauses (column 2) and this International Standard's recommended information items, that is, information items or documents. Table 2 maps ISO/IEC 12207:1995 and AMD 1 and 2 clauses (column 2) and this International Standard's recommended information items. Qualifiers and adjectives (such as "Software," "Component", "Summary", "preliminary", "customer's") may be applied as part of the information item or document title.

Tables 1 and 2 also list recommended input information items (source documents and data) in column 1 to help produce the output information items. This International Standard 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.

For nearly every process, ISO/IEC 15228:2002 specifies that organizational procedures are a source for process activities and outputs. The Contract/agreement and requirements should also be considered as input for every information item.

8.1 Mapping of information items to the system life cycle

As defined in ISO/IEC 15288 and shown in Table 1 headings, there are five enterprise processes, two agreement processes, seven project processes, and eleven technical processes:

Enterprise Life Cycle Processes

1. Enterprise Environment Management
2. Investment Management
3. System Life Cycle Processes Management
4. Resource Management
5. Quality Management

Agreement Processes

1. Acquisition Process
2. Supply Process

Project Processes

1. Project Planning
2. Project Assessment
3. Project Control
4. Decision-making
5. Risk Management
6. Configuration Management
7. Information Management

Technical Processes

1. Stakeholder Requirements Definition
2. Requirements Analysis
3. Architectural Design

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4. Implementation
5. Integration
6. Verification
7. Transition
8. Validation
9. Operation
10. Maintenance
11. Disposal

Table 1 – Mapping of ISO/IEC 15288:2002, Clauses to Information Items for Each System Life Cycle Process

Recommended input information items	ISO/IEC 15288:2002 reference	Recommended output information items
ENTERPRISE ENVIRONMENT MANAGEMENT		
Organizational procedures	5.3.2.1, 5.3.2.2 a), 5.3.2.3, 5.3.2.3 b), 5.3.2.3. f)	Organizational procedures
Quality management plan, process assessment procedures	5.3.2.3 b)	Quality management procedure
Contract, proposal	5.3.2.3 c), f)	Management plan
Risk management plan	5.3.2.3 b)	Risk management procedure
Previous strategic plans	5.3.2.3 a)	Strategic plan
Organizational procedures	5.3.2.2 a), 5.3.2.3 b)	System life cycle description
INVESTMENT MANAGEMENT		
Organizational procedures, project plan, business action plan, system life cycle plan, system life cycle procedure	5.3.3.3 f)	Project management plan
SYSTEM LIFE CYCLE PROCESSES MANAGEMENT		
Organizational procedures	5.3.4.3, 5.3.4.3 b), A.2.2, A.2.3, A.2.3.a), A.2.3 f) 2) & 3) A.2.3 g) 1) & 2),	System life cycle description
RESOURCE MANAGEMENT		
Organizational procedures, project plan	B.2.1, 5.3.5.3, 5.3.5.3 a)	Project management plan
Needs assessment, contract	B.2.3 f, B.3.1, B.3.3.e	System requirements specification
QUALITY MANAGEMENT		
Project management plan	5.3.6.2 a), 5.3.6.3 e)	Quality assurance plan
Organizational procedures, quality assurance plan, customer satisfaction report, problem report	5.3.6.2 a)	Quality management procedure

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Recommended input information items	ISO/IEC 15288:2002 reference	Recommended output information items
ACQUISITION		
Organizational procedures, need assessment	5.2.2.3 a)	Acquisition plan
Proposal, other contracts	5.2.2.2 e), 5.2.2.3 e)	Contract
Concept of operations, system requirements, software requirements specification, acceptance strategy, other requests for proposal	5.2.2.3 b), c)	Request for proposal
SUPPLY		
Proposal, other contracts and agreements	5.2.3.2 c), 5.2.3.3 e)	Contracts
Problem reports	B.2.1	Product need assessment
Project management plan	5.2.3.3 f)	Progress report
Organizational procedures, other project management plans, contract	5.2.3.3 e)	Project management plan
PROJECT PLANNING		
Contract, organizational procedures, other plans	5.4.2.1, 5.4.2.2 a), 5.4.2.2 e), 5.4.2.3 b), 5.4.2.3 c), 5.4.2.3 i), 5.4.2.3 j), B.2.1, B.3.3 a, 5.4.1	Project management plan
Product need assessment, contract	5.4.2.3 i)	Acceptance plan
Product need assessment	5.4.2.3 i)	Acquisition plan
Contract, project management plan	B.3.1	Documentation plan
Plans	5.4.2.3	Organizational procedures
Plans, other organizational procedures	5.4.2.3 l)	Process assessment procedure
Enterprise quality management procedure, quality assurance plan	5.4.2.3 l)	Quality assurance plan
System requirements, project plan	B.2.3 i)	Risk management plan
PROJECT ASSESSMENT		
Contract, organizational procedures, project plan, quality assurance plan	5.4.3.1 j), 5.4.3.3 i)	Problem report
Contract, organizational procedures, project plan, quality assurance plan, other progress report	5.4.3.3 i)	Progress report
PROJECT CONTROL		
Organizational procedures	5.4.4.3 d)	Problem report
Contract, customer requirements, project plan	5.4.4.3 a)	System requirements specification
DECISION-MAKING		
Organizational procedures, contract	5.4.5.3 c), f), g)	Problem report
Organizational procedures, contract	5.4.5.2 d), 5.4.5.3 f)	Progress report
RISK MANAGEMENT		
Quality assurance procedures, problem reports	5.4.6.2 d)	Monitoring and control report
Project management plan	5.4.6.3 i)	Progress report
Organizational procedures	5.4.6.3 h), B.2.3 e	Risk management plan

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Recommended input information items	ISO/IEC 15288:2002 reference	Recommended output information items
CONFIGURATION MANAGEMENT		
Configuration management procedures, configuration status report	5.4.7.3 b), c)	Release record
Organizational procedures, system architecture description, system description	5.4.7.3 d)	Interface description
INFORMATION MANAGEMENT		
Organizational procedures, project management plan	5.4.8.3 a)	Documentation plan
Organizational procedures, quality assurance plan	5.4.8.3 i)	Monitoring and control report
Documentation plan, configuration management procedures	5.4.8.3 f)	Release record
STAKEHOLDER REQUIREMENTS DEFINITION		
Organizational procedures,	5.5.2.3 b)	Request for proposal
Contract, needs assessment, concept of operations	5.5.2.3 b), B.2.1, B.2.3 c	System requirements specification
REQUIREMENTS ANALYSIS		
Organizational procedures, stakeholder requirements	5.5.3.2 a), 5.5.3.3 a), B.3.3 a)	System requirements specification
ARCHITECTURAL DESIGN		
Organizational procedures	5.5.4.3 h)	Contract
Project management plan, systems requirements specification	B.2.3 h)	Development plan
Development plan, system requirements specification	5.5.4.3 h), 5.5.4.3. i), B.2.1, B.3.3 b)	System architecture description
Contract	5.5.4.3 a), B.3.1	System requirements specification
System architecture description	5.5.4.2 b)	System element description
System architecture description, system design description	5.5.4.3 g)	Interface description
Joint project review minutes	5.5.4.3 f)	Problem report
IMPLEMENTATION		
Contract	B.3.3 f)3)	System requirements specification
System requirements specification, system architecture description	B.3.3 f)1)	System description
System architecture description, interface description	B.3.3 f)2)	High-level software design description
Documentation plan, system element description, concept of operations	5.5.5.3 a), c)	User documentation
User documentation	B.3.3 f)6)	Training documentation
Agreement, organizational procedures, system design, integration procedure, interface control description	B.3.3 f)4), B.3.3 j)	Production plan

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Recommended input information items	ISO/IEC 15288:2002 reference	Recommended output information items
INTEGRATION		
Concept of operations	B.4.3 e)	Operations plan
Operations procedures, user documentation, system requirements specification, system test plan	5.5.6.3 e)	Operational test procedure
System requirements specification, operations plan	B.4.3 e)	Maintenance plan
Maintenance procedures	5.5.6.2 d), 5.5.6.3 g)	Problem report
Operations and maintenance plan	5.5.6.3 c), 5.5.6.3 f), B.4.1	User documentation
VERIFICATION		
Organizational procedures, requirements, verification plan, test procedures, progress report, problem report, test case	5.5.7.3 e), B.3.3 c)	Verification report
Requirements, design definition, interface control description, verification plan, test procedures, test case	5.5.7.3 c),	Evaluation report
Test procedures, test report	5.5.7.2 c), 5.5.7.3 g)	Problem report
TRANSITION		
Organizational procedures, migration plan, configuration management plan	5.5.8.2 d), 5.5.8.3 h)	Release record
Quality management procedures	5.5.8.2 e), 5.5.8.3 h)	Problem report
VALIDATION		
Organizational procedures, project management plan, migration plan	5.5.9.3 b)	Validation plan
Quality management plan, validation plan	5.5.9.2 d), 5.5.9.3 d), 5.5.9.3 g), B.3.3 c)	Evaluation report
Test procedures	5.5.9.1, 5.5.9.2 d)	Problem report
OPERATION		
Organizational procedures, concept of operations	B.2.1	Operations plan
Configuration management procedures	B.5.1	Release record
System requirements specification, detailed system design description	5.5.10.3, j, B.3.3 f)5), B.5.1	User documentation
System description	5.5.10.2 c), B.5.1	Problem report
Problem report, test procedure, quality assurance procedures	5.5.10.3.k)	Evaluation report
MAINTENANCE		
Organizational procedures, operations plan, development plan	B.2.1, B.6.1	Maintenance plan
Maintenance plan, user documentation	5.5.11.3, a)4), e), h), B.3.3 f)7), B.6.1	Maintenance procedures
Maintenance procedures	5.5.11.1, 5.5.11.2 e), 5.5.11.3 d), 5.5.11.3e),5.5.11.3 f), 5.5.11.3 j), B.5.3 d), B.6.1	Problem report

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Recommended input information items	ISO/IEC 15288:2002 reference	Recommended output information items
DISPOSAL		
Organizational procedures, project management plan	B.3.3 f)8)	Retirement plan
Operations plan, retirement plan	B.7.3 c)	Migration plan
System architecture, installation procedures	5.5.12.3 b)	Evaluation report
Operations procedures, quality assurance procedures	B.7.1	Problem report
Disposal procedures	5.5.12.3 e), B.7.1	User documentation

8.2 Mapping of information items to the software life cycle

Table 2 maps information items to the software life cycle as defined in ISO/IEC 12207:1995 and Amendment 1, Annex F. References to annexes G and H of ISO/IEC 12207, Amendments 1 and 2 are informative only. The user is advised to consult ISO/IEC 12207, Amendments 1 and 2 if information on component processes (subdivisions of the processes) is desired. As amended, ISO/IEC 12207 has five primary processes, nine supporting processes, and nine organizational processes:

Primary Life Cycle Processes

1. Acquisition
2. Supply
3. Development
4. Operation
5. Maintenance

Supporting Life Cycle Processes

1. Documentation
2. Configuration Management
3. Quality Assurance
4. Verification
5. Validation
6. Joint Review
7. Audit
8. Problem Resolution
9. Usability

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Organizational Life Cycle Processes

1. Management
2. Infrastructure
3. Improvement
4. Human Resources (formerly Training)
5. Human Resource Management
6. Knowledge Management
7. Asset Management
8. Reuse Program Management
9. Domain Engineering

Table 2 – Mapping of ISO/IEC 12207 Clauses to Information Items for Each Software Life Cycle Process

Recommended input information items	ISO/IEC 12207:1995 and AMD 1 and 2 reference	Recommended output information items
ACQUISITION		
Product need assessment, acquisition report and other acceptance plans, stakeholder requirements	5.1.1.9, 5.1.5.1, H.1.13 1), H.1.17 1)	Acceptance plan
Acquisition plan	5.1.5.2	Acceptance procedure
Acquisition report, contract product need assessment, acquisition report, other acquisition plans	5.1.1.8, 5.1.1.9, H.1.10 3), 5.1.10.2 a)	Acquisition plan
Request for proposal, proposal, supplier selection procedure,	H.1.11 3)	Acquisition report
Proposal, other Contracts	5.1.3.4, 5.1.3.5, 5.2.3.1, 5.2.3.2, F.1.1 2), F.1.1.2 3), H.1 2), H.1.5 2), H.1.6 5), H.1.6 6), H.1.8 3), H.1.11, H.1.11 1), H.1.11 2)	Contract
Financial records, project management plan	H.1.17 5), 5.1.10.2 e)	Evaluation report
Other product need assessments	5.1.1.1	Product need assessment
Supplier selection procedure, acquisition Plan	H.1.12 2), 5.1.10.2 d), 5.1.10.2 e)	Progress report
Request for proposal needs, acquisition report, previous requests for proposals (RFPs); concept; system requirements; software requirements definition and analysis results; past: scope statements, bidder instructions, terms and conditions and control of subcontractors; acceptance strategy and condition; acquisition needs; and acquisition recommendation.	5.1.2.1, 5.1.2.3, H.1.8, H.1.8 7)	Request for proposal (RFP)

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Recommended input information items	ISO/IEC 12207:1995 and AMD 1 and 2 reference	Recommended output information items
System requirements specification, product need assessment	5.1.1.2, F.1.1.1 2), F.1.1.1 3), H.1.2 6), H.1.4, H.1.4 1), H.1.4 3) through 6), H.1.7, H.1.7 2, H.1.7 3), H.1.7 5), H.1.7 7) H.1.8 2), H.1.12 3)	Software requirements specification
Other supplier selection procedures, acquisition plan, requests for proposals	5.1.3.1	Supplier selection procedure
SUPPLY		
Requirements specification, request for proposal	F.1.2 2, F.1.2.2 1) F.1.2.2 2)	Contract
Contract, supplier's project management plan, quality assurance plan	5.2.6.2, 6.6, 6.7	Evaluation report
Monitoring results	5.2.5.3	Monitoring and control report
Proposal review record, proposal, contract, other project management plans	5.2.4.3, 5.2.4.5, 5.2.5.4, 7.1.2.1	Project Management Plan
Customer inquiry or request, request for proposal, other proposals	5.2.2.1, F.1.2.1, F.1.2.1 2)	Proposal
Proposal review record, proposal, contract, other quality assurance plans	5.2.4.1,6.3.1.3,	Quality assurance plan
Configuration item records, requirements specification	F.1.2.3 3)	Release record
DEVELOPMENT		
Contract, joint review minutes, audit reports, system qualification test report, qualification test report, installation report	5.3.13.1	Acceptance review and testing report
System architecture description, system requirements specification, system integration test evaluation report, system qualification test report, evaluation reports, qualification test report, software requirements specification, joint review minutes, acceptance plan, other audit reports	5.3.9.4,5.3.11.3	Audit report
Software requirements specification, high-level software design description	5.3.5.3	Database design description
Database design description	5.3.6.3, 5.3.7.1 a)	Database detailed design description
Database detailed design description,	5.3.7.1 b)	Database test procedure
Database design description	5.3.7.2	Database test report
Contract, supplier's project management plan, software requirements specification, previous development plan, quality assurance plan	5.3.1.1, 5.3.1.4,	Development plan
Program Management Plan, Development Plan, Audit Reports, Evaluation Reports	5.3.1.2 a)	Documentation plan
Criteria, software items, databases, audit reports, joint review minutes, other evaluation reports	5.3.2.2, 5.3.3.2, 5.3.4.2, 5.3.5.6, 5.3.6.7, 5.3.7.5, 5.3.8.5, 5.3.9.3, 5.3.10.3, 5.3.11.2, 6.6	Evaluation report

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Recommended input information items	ISO/IEC 12207:1995 and AMD 1 and 2 reference	Recommended output information items
Development plan, software requirements specification, system architecture description, software requirements specification	5.3.5.1, 5.3.5.2, F.1.3.5 3)	High-level software design description
Contract, development plan, system requirements specification, system architecture description, other installation plans	5.3.12.1	Installation plan
Contract, installation plan	5.3.12.2	Installation report
System requirements specification, system architecture description, software user documentation, software integration test plan	5.3.8.2, 5.3.10.1	Integration and test report
Software requirements specification, development plan, software unit test plan, software unit test report, database test report, acceptance plan	5.3.5.5, 5.3.6.6, 5.3.7.4, 5.3.8.1	Software integration test plan
High-level software design description	5.3.6.1, 5.3.6.2	Low-level software design description
Software items, other problem reports	5.3.1.2 c), 6.8	Problem report
Acceptance plan, software user documentation, development plan, software requirements specification, high-level software design description, database design description	5.3.8.4	Qualification test procedure
System requirements specification, system integration report, system integration test procedure, software qualification test procedure	5.3.9.1, 5.3.11.1	Qualification test report
Contract, system requirements specification, development plan, software requirements specification, system architecture description	5.3.2.1, 5.3.4.1, F.1.3 1), F.1.3.1 2) F.1.3.2 1), 3), 4), 5, 6, 8 F.1.3.3 8), F.1.3.4 1) through F.1.3.4 8), F.1.3.5 4)	Software requirements specification
Low-level software design description	5.3.7.1 a)	Software unit description
Development plan, acceptance plan, software requirements specification, low-level software design description, database detailed design description	5.3.6.5	Software unit test plan
Software items, databases, software unit test plan	5.3.7.1 b)	Software unit test procedure
Software unit description, software unit test procedures	5.3.7.2	Software unit test report
Documentation plan, software requirements specification, high-level software design description, other software user documentation, database description, software unit test procedures, installation and test report, software qualification test report	5.3.5.4, 5.3.6.4, 5.3.7.3, 5.3.8.3, 5.3.9.2, 6.1	Software user documentation
Contract, development plan, system requirements specification, software requirements specification	5.3.3.1 F.1.3.3 8)	System architecture description
System requirements specification, system architecture description, software integration and test report, software qualification test report, software user documentation	5.3.10.2	System integration test procedure

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Recommended input information items	ISO/IEC 12207:1995 and AMD 1 and 2 reference	Recommended output information items
OPERATION		
Software user documentation, problem reports; other change requests, operations plans, operational test procedures, user requests	5.4.1.3, 5.4.4.1, 5.4.4.2, 5.5	Change request
Software user documentation, problem reports; change requests, other operational test procedures	5.4.1.3, 5.5	Operational test procedures
Development plan, contract, software user documentation, other operations plans	5.4.1.1,	Operations plan
Problem reports, other operational procedures	5.4.1.2, 5.4.4.3, 5.5, 6.8	Problem report
Problem reports, other operational procedures	5.4.1.2, 6.8	Problem resolution procedures
MAINTENANCE		
Maintenance plan, modification test and evaluation criteria specification, modification requirement report, modification notification report, modification test report, migration plan	5.5.4.1, 5.5.5.6, 6.6.1.5	Joint review minutes
Development plan, contract, software user documentation, other maintenance plans	5.5.1.1,	Maintenance plan
Maintenance plan, problem reports, maintenance procedures	5.5.2.4	Maintenance problem/modification report
Other maintenance procedures, installation procedures, user documentation, test procedures	5.5.1.2, 6.8, F.1.5 3)	Maintenance procedures
Contract, maintenance plan, other migration plans	5.5.5.2	Migration plan
Migration plan	5.5.5.3, 5.5.5.5, F.1.5 7)	Modification notification report
Maintenance procedures, maintenance plan, problem report	5.5.3.1	Modification requirement report
Maintenance procedures, maintenance plan, maintenance problem/ modification report, modification requirement report	5.5.3.2 a), 5.5.3.2 b)	Modification test report
Other maintenance procedures	5.5.1.2, 6.8	Problem report
Retirement plan	5.5.6.2, 5.5.6.4	Retirement notification report
Contract, other retirement plans	5.5.6.1	Retirement plan
DOCUMENTATION		
Contract, other documentation plans	6.1.1.1	Documentation plan
CONFIGURATION MANAGEMENT		
Contract, other configuration management plans	6.2.1.1	Configuration management plan
Configuration records, other configuration status reports	6.2.2.1, 6.2.4.1, F.2.2 5)	Configuration status report
Configuration management plan, configuration status report	6.2.6.1	Release record

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Recommended input information items	ISO/IEC 12207:1995 and AMD 1 and 2 reference	Recommended output information items
QUALITY ASSURANCE		
Quality assurance plan, contract, problem reports, previous assessment reports	6.3.1.4	Problem report
Contract, other quality assurance plans	6.3.1.3,	Quality assurance plan
VERIFICATION		
Contract, other verification plans	6.4.1.5,	Verification plan
Verification plan, contract, progress report, problem reports, evaluation reports, audit reports, test procedure, test cases	6.4.2, 7.1.4.1	Verification report
VALIDATION		
Contract, other validation plans	6.5.1.4,	Validation plan
Contract, qualification test report, system requirements specifications, software requirements specification	6.5.2.1	Validation test specification
JOINT REVIEW		
Review agenda, problem reports	6.6.1.5, F.2.6 3)	Joint review minutes
AUDIT		
Audit report	6.7.1.6	Audit acknowledgement report
Plans, monitoring results	6.7.1.4, 6.7.2.1	Audit report
Problem Reports	F.2.7 4)	Problem report
PROBLEM RESOLUTION		
System requirements specification, test plan, contract	F.2.10 1)	Acceptance plan
Problem resolution procedures, joint review minutes	6.8, 6.8.1.1, 6.8.2.1	Problem report
Problem reports	6.8.1.1, 6.8.2.1, F.2.8 6)	Problem resolution procedure
USABILITY		
Stakeholder requirements, product needs assessment, risk assessment, evaluations of prototypes	6.9.2.1, 6.9.2.2 a), 6.9.2.2 f), 6.9.2.8 b)	System requirements specification
Project management plan, development plan	6.9.1.1, 6.9.1.2 a), 6.9.1.2 e), 6.9.2.3, 6.9.2.4 a) through e)	Usability plan
MANAGEMENT		
Proposal, contract, other plans, budget requests	7.1.2.1	Project management plan
Contract, project management plan	7.1.3.3	Problem report
Contract, project management plan	7.1.3.4, F.3.1.3 6)	Progress report
Mission, core values, vision, goals and objectives, organizational procedures	F.3.1.1 5)	Strategic plan

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Recommended input information items	ISO/IEC 12207:1995 and AMD 1 and 2 reference	Recommended output information items
INFRASTRUCTURE		
Project management plan, other infrastructure plans	7.2.1.1, 7.2.1.2, 7.2.2.1, F.3.2 2) AMD 2, F.3.2	Infrastructure plan
IMPROVEMENT		
Plans, other organizational procedures	7.3.1.1, 7.3.3.1	Organizational procedure
Plans, other organizational procedures	7.3.2.1, 7.3.2.2,	Process assessment procedure
Organizational procedures, process assessment procedures, process assessment results, audit reports, customer satisfaction reports	7.3.3.2, 7.3.3.3	Process improvement analysis report
HUMAN RESOURCES (TRAINING)		
Training plan, user documentation, validation procedures	7.4.2.2	Training documentation
Contract, other training plans	7.1.2.1, 7.4.1.1, 7.4.2.1	Training plan
HUMAN RESOURCE MANAGEMENT		(None identified)
KNOWLEDGE MANAGEMENT		(None identified)
ASSET MANAGEMENT		
Strategic plan, project management plan, maintenance plan, plan template	F.3.5 1), 7.5.1.1, 7.5.1.2 a), 7.5.1.3	Asset management plan
Configuration status report	7.5.3.6, 7.5.3.7	Change request
Asset management plan, retirement notification report	7.5.3.9	Configuration management procedures
Problem report	F.3.5 7), 7.5.3.8	Modification notification report
Asset reuse data	7.5.3.5	Monitoring and control report
Test report, audit report	F.3.5 7), 7.5.1.2 b), 7.5.3.6, 7.5.3.7	Problem report
Configuration status report	7.5.3.8	Retirement notification report
REUSE PROGRAM MANAGEMENT		
Organizational procedures, business strategy	7.6.2.1, 7.6.2.2, 7.6.3.1, 7.6.3.2, 7.6.3.3, 7.6.4.2	Evaluation report
Reuse strategy, template	7.6.1.5 a), 7.6.4.1, 7.6.5.1	Reuse plan
DOMAIN ENGINEERING		
Configuration status report, evaluation report, domain architecture description	7.7.5.1, 7.7.5.3, 7.7.1.3 e)	Change request
Template, project management plan, organizational procedures, business strategy, development plan	7.7.1.1, 7.7.1.3 e), 7.7.5.2	Domain engineering plan
Domain engineering plan, test report, change request	7.7.3.2, 7.7.4.3	Evaluation report
Change request	7.7.5.3	Maintenance plan
Domain model, interface description	7.7.3.1	System architecture description
Software design description	7.7.5.5	User documentation

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9 Records

9.1 General

This clause identifies the recommended content of some specific records. 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, measurements, and test data, as well as product, quality, legal and official, financial, and historical data. Records should be maintained for retrieval in repositories or databases.

9.2 Specific record contents

Table 3 provides references for the applicable life cycle process and recommended content of specific records referenced in ISO/IEC 12207:1995 with AMD 1 and 2, and ISO/IEC 15288:2002. Table 3 does not include every reference to records of results that are required to be recorded and reported in the same activity, such as problem records. These are included in the Problem Report in Clauses 8 and 10.

NOTE The term "configuration record" may 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.

Table 3 – Record References and Contents

Record	Life Cycle Process	Reference	Recommended Contents
Assessment record	Improvement	12207 AMD 1 F 3.3.2 1)	Information and data related to the use of the standard process for specific projects
Configuration record	Configuration Management, Implementation, Maintenance, Disposal, Asset Management, Domain engineering Transition	15288 5.4.7.3 c and d), 5.5.5.3 d) 5.5.8.2 d) 5.5.11.2 f) 5.5.12.1, 5.5.12.2 12207 AMD 1 F.3.5 5), 7.7.4.2, AMD 2 F2.2 5)	Configuration status; the rationale for approval of the baseline; changes to baseline; association to requirements; indication that the item fulfilled requirements; maintenance, failure and lifetime data; disposal record; use of asset; and activities performed, such as backup, storage, archiving, handling and delivery of configured items. See *release record* and *system element description*.
Decision record	Decision Making	15288 5.4.5.1, 5.4.5.3 f), 6.3	Decision and rationale
Disposal record	Disposal	15288 5.5.12.2 e)	Disposal actions for future risk analysis
Information item storage record	Information Management	15288 5.4.8.3 f), 5.4.8.2 d)	Distribution record, security classification
Problem record	Decision Making, Integration, Maintenance, Supply, Quality Assurance, Verification, Validation, Joint Review, Reuse Management, Acquisition	15288 5.4.5.3 c), 5.4.5.3 g), 5.5.5.6.2 d) 5.5.5.6.3 g), 5.5.11.3 e) 12207 AMD 1 and 2, 5.2.5.3 b), F.2.3 3), F.2.4 4), F.2.5 4), F.2.6 5), 7.6.5.3, H.1.12 4)	Problem, variance, defect, or non-conformance; problem category, fault correction actions, resolution. See *problem report*.
Quality activity record	Quality Assurance, Improvement	12207 6.3.1.3 b) and c), 6.3.1.4, 6.3.1.5, F.3.3.2 c)	Execution of the quality activity, Assessment activity
Risk record	Risk Management	15288 5.4.6.2, 5.4.6.3 j)	Probability, consequence, acceptability threshold, treatment strategy, status. Stored in a *risk register*.

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Record	Life Cycle Process	Reference	Recommended Contents
Software item configuration record	Configuration Management	12207 6.2	A software configuration index may contain software item configuration records for one software item or a set of software items. A software item configuration record should 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
Staff performance record	Human Resources	12207 AMD 1 7.4.4.4	Performance evaluation, skills, training
Test result	Development	12207 AMD 1, F.1.3.7 5), F.1.3.8 3), F.1.3.10 3)	Result of testing

10 Specific information item (document) contents

Content guidelines serve as a checklist that can be satisfied by the organization's content mapping, templates, and information models. Recommended contents of the recommended information items are provided in this clause. 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 12207:1995 with AMD 1 and 2, and and ISO/IEC 15288: 2002.

This clause identifies recommended information items (based on Tables 1 and 2, column 3) and the corresponding recommended information item contents. It contains the cross-references for clauses in ISO/IEC 12207:1995, and ISO/IEC 15288. references in **bold** provide detailed requirements and should be consulted.

This clause lists the generic information item type as specified in Clause 7. The generic information item contents shall be included in each applicable information item.

This clause provides guidance on the contents of information items. It is not intended to address all possible information item contents, nor to specify the title of the information item, nor the order or titles of the sections in an information item.

Some contents are duplicated across multiple information items and information item types. A single source repository should be used for similar contents for consistency and ease of development. The Development Plan and Documentation Plan should include the type of information and level of detail to be provided in each information item where duplications in content exist.

10.1 Acceptance plan

ISO/IEC 12207:1995 reference: 5.1.1.9, **5.1.5.1,** AMD 1: F.2.10.1, H1.13 1),

ISO/IEC 15288:2002 reference: 5.4.2.3 i)

Generic type: 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 *software integration test plan.*

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10.2 Acceptance procedure

ISO/IEC 12207:1995 reference: **5.1.5.2**

Generic type: Procedure

In the acceptance procedure, the acquirer documents the procedures for conducting acceptance review and testing of a deliverable product or service and conditions that are to be satisfied before acceptance. The acceptance procedure should comply with the provisions of the acceptance strategy and conditions of the Acquisition Plan and contract.

10.3 Acceptance review and testing report

ISO/IEC 12207:1995 reference: 5.3.13.1

Generic type: Report

The acceptance review and testing report documents that an acquirer has reviewed and tested a product and whether the product is accepted.

10.4 Acquisition plan

ISO/IEC 12207:1995 reference: 5.1.1.8, AMD 1 H.1.10 3), H.1.17 1), 5.1.10.2 a)

ISO/IEC 15288:2002 reference: 5.2.2.3 a), 5.4.2.3 i)

Generic type: Plan

The acquisition plan defines the technical and managerial processes necessary to satisfy the software acquisition requirements. It addresses the following acquisition activities: process initiation, request for proposal (RFP) (tender) preparation, contract preparation and maintenance, supplier monitoring, and acceptance and completion. It includes system requirements, planned employment of the system, contract type, organizational responsibilities, and the concept of support. It identifies risks and methods to manage risks. It may include costs and budgets for the acquisition. It documents 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. It should include supplier selection criteria. It should include the purpose of the system or software; describe the general nature of the system and components, including software; outline the expected life cycle processes and need for system development, operation, and maintenance; identify the project sponsor; acquirer organization; user organizations, and support agencies; and list current and planned operating sites.

10.5 Acquisition report

ISO/IEC 12207: AMD 1 reference: H.1.11 3)

Generic type: Report

The acquisition report notifies suppliers of the results of source selection.

10.6 Asset management plan

ISO/IEC 12207: AMD 1 reference: F.3.5 1), 7.5.1.1, 7.5.1.2 a), 7.5.1.3

Generic type: Plan

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The asset management plan defines the strategy, management and technical processes for asset management. It defines an asset classification scheme, the asset storage, handling and retrieval mechanism; and asset acceptance, certification, and retirement procedures.

10.7 Audit acknowledgement report

ISO/IEC 12207:1995 reference: 6.7.1.6

Generic type: Report

The audit acknowledgement report acknowledges audit results and presents the planned resolution of problems to the auditing party.

10.8 Audit report

ISO/IEC 12207:1995 reference: 5.3.9.4, 5.3.11.3, 6.7.1.4, **6.7.1.6**

Generic type: Report

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 any problem resolution records, action item responsibilities and closure criteria and compliance. 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 findings.

10.9 Change request

ISO/IEC 12207:1995 reference: 5.4.1.3, 5.4.4, 5.5, AMD 1: 7.5.3.6, 7.5.3.7, 7.7.1.3 e)

Generic type: Request

A change request identifies a system, service, hardware, software, interface, asset, or documentation problem or desired improvement, and requests modifications. 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 justification for and nature of the change, including the new or modified asset, functions or error to be corrected; priority, assumptions and constraints. It may address the impact to schedules, cost, products, and test. See *problem report.*

10.10 Configuration management plan

ISO/IEC 12207:1995 reference: 6.2.1.1

Generic type: Plan

The configuration management (CM) plan describes CM policies, procedures, activities, tools, and schedule, the responsible organization for performing these activities, and their relationship with other organizations, such as software development, asset management, or maintenance. It should include the scheme for the identification and classification of software item records and information items and their versions; how to establish baselines, and version identification and control. It should identify the CM activities, including process implementation, configuration identification, configuration control and change management, configuration status accounting, configuration evaluation, and release management and delivery. For a review board or special organization established for performing CM activities on this project, the plan shall describe its purpose and objectives; membership and affiliations; scope of authority; and operational practices.

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10.11 Configuration management procedures

ISO/IEC 15288:2002 reference: 4.4

ISO/IEC 12207 AMD 1: 7.5.3.9

Generic type: Procedure

The configuration management procedures provide the detailed activities for the configuration management process, including process implementation, configuration identification, configuration control and change management, configuration status accounting, configuration evaluation, and release management and delivery. It should include procedures for initial baselining of work products, logging and analysis of change requests, change control board operations, tracking of changes in progress, and procedures for notifying concerned parties when baselines are first established or later changed. It may include asset management procedures such as asset retirement.

10.12 Configuration status report

ISO/IEC 12207:1995 reference: 6.2.2.1, 6.2.4.1. AMD 2: F.2.2 5)

Generic type: Report

The configuration status report provides the status of controlled configuration items, including baselines, release identifiers, and latest software item versions. It may include the number of changes for a project, number of releases and comparisons of releases. It may be in the same format as an Audit Report.

10.13 Contract

ISO/IEC 12207:1995 reference: **5.1.3.4**, 5.1.3.5, 5.2.3.1, 5.2.3.2. AMD 1 and 2: F.1.1 2), F.1.1.2 3), F.1.2 2, F.1.2.2 1) F.1.2.2 2), H.1 2), H.1.5 2), H.1.6 5), H.1.6 6), H.1.8 3), H.1.11, H.1.11 1), H.1.11 2)

ISO/IEC 15288:2002 reference: 5.2.2.2 e), 5.2.2.3 e), 5.2.3.2 c), 5.2.3.3 e), 5.4.2.3 b), 5.4.5.3 g), 5.5.4.3 h), 5.5.6.3 e)

Generic type: Specification

A contract is the formal agreement between an acquirer and a supplier. It addresses deliverables, project best practices; concept; system requirements; software requirements definition and analysis results; off-the-shelf products identified; negotiated price, payment schedule, and schedule for suppliers to deliver the product or service; proprietary rights to systems and technical data and software intellectual property rights: usage, ownership, warranty and licensing rights; tasks based on a system or software life-cycle model; provisions for monitoring; verification, validation, and acceptance criteria; and procedures for contract changes and exceptions. The contract may specify best practices to include proposed standards and strategies for processes, activities and tasks, Support Processes (including identification of the performing organizations, responsibilities (if other than supplier); and contractual scope of tasks. Informally, commitments or agreements may be specified between parts of the same organization (sometimes called a memorandum of understanding).

10.14 Database design description

ISO/IEC 12207:1995 reference: 5.3.5.3

Generic type: Description

The database design description is the top-level design for databases. It includes database overview and identification, database design (including descriptions of applicable design levels, for example, conceptual, internal, logical, and physical), reference to design descriptions of software used for database access or manipulation, and rationale for database design. It presents database-wide design decisions about its activity from a user's viewpoint, in meeting its functional and performance requirements.

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10.15 Database detailed design description

ISO/IEC 12207:1995 reference: **5.3.6.3**, 5.3.7.1 a)

Generic type: Description

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 summarises the history of its development, use and maintenance. It defines the database design at the conceptual, internal, logical and physical levels. It identifies each software item used for database access or manipulation. It provides any constraints, limitations or unusual features in the design of the database software items. It defines types of errors affecting the database and the handling of those errors. It shows traceability between each database or related software item, and the system or software item requirements. It may specify database access methods, data entities and their relationships, security and integrity constraints, data retention requirements; and expected size of the data elements.

10.16 Database test procedure

ISO/IEC 12207:1995 reference: 5.3.7.1 b)

Generic type: Procedure

The database test procedure provides the detailed activities for executing database tests. It includes the schedule for testing databases. It contains test requirements to stress the database to the limits of the requirements.

10.17 Database test report

ISO/IEC 12207:1995 reference: 5.3.7.2

Generic type: Report

The database test report presents database-testing results and includes an evaluation that the related requirements are satisfied. It includes a database identification, date of testing, test requirements and criteria, test identifier, overview of results, detailed results, problems encountered, and rationale for decisions.

10.18 Development plan

ISO/IEC 12207:1995 reference: **5.3.1.1**, 5.3.1.4

ISO/IEC 15288:2002 reference: B.2.3 h)

Generic type: Plan

The development plan presents how the organization or project plans to conduct development activities. it identifies the objectives and standards to be used in the system or software development process, including the system or software life-cycle model to be used to satisfy the product or service requirements, based on the project's scope, magnitude and complexity. It maps development process activities and best practices to the selected life-cycle model. It includes schedule, resources, methodology, tools, reuse strategy, action items, roles and responsibilities to be used in development and qualification of all requirements, including safety and security. It includes or refers to separate plans or procedures to address different activities in the development stage or process: development process implementation, system requirements analysis, system architecture design, system and software requirements specification, high-level and low-level system or software design, software coding, system element test or software unit test, system or software integration test, system or software qualification test, system or software installation, and acceptance. It identifies notations and naming conventions used in development.

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10.19 Documentation plan

ISO/IEC 12207:1995 reference: 5.3.1.2 a), **6.1.1.1**

ISO/IEC 15288:2002 reference: 5.4.8.3 a), B.3.1

Generic type: Plan

The document plan presents how the project plans to conduct documentation activities during the life cycle and specifies the project's information items. It describes the process and activities for developing, making available, and maintaining documents and information items. It identifies the information items and documents to be acquired, re-used, or produced, and includes schedule, resources, methodology, tools, content management or reuse strategy, action items, and roles and responsibilities, consistent with the overall project management plan. It includes schedules for document development, review and approval. It identifies who will receive or have access to restricted information items and documents. The documentation plan should include the controlling template or standard for each document.

10.20 Domain engineering plan

ISO/IEC 12207 AMD 1 reference: 7.7.1.1, 7.7.1.3 e), 7.7.5.2

Generic type: Plan

The domain engineering plan presents how the organization intends to conduct domain engineering procedures and activities. It describes the process for handling change requests.

10.21 Evaluation report

ISO/IEC 12207:1995 reference: 5.2.6.2, 5.2.6.4 5.3.2.2, 5.3.3.2, 5.3.4.2, 5.3.5.6, 5.3.6.7, 5.3.7.5, 5.3.8.5, 5.3.9.3, 5.3.10.3, 5.3.11.2, 5.5.3.2 a), 6.6.1.5. AMD 1: 7.7.3.2, 7.7.4.3, H.1.17 5), 5.1.10.2 e)

ISO/IEC 15288:2002 reference: 5.3.6.3 d), 5.5.7.3 c), 5.5.10.3.k), 5.5.12.3 b).

Generic type: Report

The evaluation report provides results of reviews and evaluations, such as an evaluation of design constraints or financial variances. It includes evaluation criteria. Evaluations may be based on criteria of traceability, consistency, testability, usability and customer satisfaction, and feasibility. 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). See also *audit report, validation report, verification report,* and *joint review minutes.*

10.22 High-level software design description

ISO/IEC 12207:1995 reference: **5.3.5.1,** 5.3.5.2. AMD 1: F.1.3.5 3)

ISO/IEC 15288:2002 reference: 5.5.10.3.k)

Generic type: Description

The high-level software design description presents the characteristics of one or more systems, subsystems, software items, or other system components, and their interfaces. It should partition the software into design entities and describe the important properties and relationships among those entities. It includes identification of external interfaces, software components, software units, and other interfaces. It ensures software item requirements are allocated to software components and software item requirements are further refined, as needed, to facilitate detail design. It describes the items (systems, configuration items, users, hardware,

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software, etc.) that must communicate with other items to pass and receive data, instructions or information. As needed, protocols should be specified. It presents the concept of execution (concept of operations), including data flow and control flow, and identifies security considerations. It identifies reuse elements. It outlines error handling. (See also *system architecture description*).

10.23 Infrastructure plan

ISO/IEC 12207:1995 reference: **7.2.1.1**, 7.2.1.2, 7.2.2.1. AMD 2: F.3.2 2)

Generic type: Plan

The infrastructure plan covers the provision of organizational and contractual infrastructure items: the hardware, software, tools, techniques, standards and facilities for performing development, operation, and maintenance processes. It includes the infrastructure required for project management, including scheduling, tracking, and reporting. It may address the test environment and library. It includes configurations of infrastructure items, based on functionality, performance, safety, security, availability, space requirements, existing equipment, costs, and time constraints. It defines the extent to which the infrastructure is under configuration management control.

10.24 Installation plan

ISO/IEC 12207:1995 reference: 5.3.12.1

Generic type: Plan

The installation plan provides the plan for installing a configuration item in its target environment. It includes software and hardware prerequisites, problems resolved, workarounds for unresolved problems, provisions for user training, conversion from existing systems, an installation checklist and installation instructions. It provides a point of contact for questions relating to the installation, supporting material and any issues concerning security, safety and privacy. For software installation, it provides information on software application and database initialisation, execution and termination.

10.25 Installation report

ISO/IEC 12207:1995 reference: 5.3.12.2

Generic type: Report

The installation report provides results of the installation, including the related events, installation location, version being installed, installation dates, and completed installation checklist.

10.26 Integration and test report

ISO/IEC 12207:1995 reference: 5.3.8.2, 5.3.10.1

Generic type: Report

Based on the system or software requirements, the integration and test report presents the results from integration and testing of the system, which may include software components or software combined with the hardware configuration items and manual operations. Results need to verify compliance with the integration 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 testing, integration and test requirements and criteria, test identifier, overview of results, detailed results, and rationale for decisions. It describes problems encountered and deviations from the planned test procedures.

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10.27 Interface Description

ISO/IEC 15288:2002 reference: 5.4.7.3 d), 5.5.4.3 g), 5.5.6.3 f)

Generic type: Description

The interface description describes the interface entity characteristics of one or more systems, subsystems, domains, hardware items, software items, manual operations 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, 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.

10.28 Joint review minutes

ISO/IEC 12207:1995 reference: 5.3.4.3, 5.3.5.7, 5.3.6.8, 5.5.4.1, 5.5.5.6, 6.6.1.3, **6.6.1.5**. AMD 1: F.2.6 3)

Generic type: Report

The joint review minutes provide a report of a review conducted by the acquirer and the supplier. Minutes include attendees, agenda, product or service under review, entry and exit points for the review, main discussion topics, assumptions, presentation material, approvals, action items and closure criteria. Minutes document the evaluation of status and compliance of products, and activities and schedule status. Minutes include problems found and their resolution or anticipated resolution.

10.29 Low-level software design description

ISO/IEC 12207:1995 reference: **5.3.6.1**, 5.3.6.2

Generic type: Description

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. It provides visibility into the design and information needed for software support. It is used as the basis for implementing software. It includes the detailed structure description of software-components (to the software unit level to be coded, compiled and tested). It ensures all software component requirements are allocated to its software items and the software item requirements are further refined, as needed, to facilitate detail design. It includes the software item-wide design decisions about the software item's behavioural design (how it behaves, from a user's viewpoint, in meeting its requirements, ignoring internal implementation) and other decisions affecting the selection and design of the software items making up a software item. It provides traceability from each software item to the software item requirements allocated to it. It includes the detailed design for software components' external interfaces to the software item, between related software components, and between related software units. The low-level description permits software development or selection of items for reuse without the need for further information. It describes the interface entity characteristics of one or more systems, subsystems, hardware items, software items, manual operations or other system components. It should describe the size, frequency or other characteristics of the data elements. It should reference any known timing constraints. It should identify protocols. It should define how errors would be handled.

10.30 Maintenance plan

ISO/IEC 12207:1995 reference: 5.5.1.1. AMD 1: 7.7.5.3

ISO/IEC 15288:2002 reference: B.2.1, B.4.3 e), B.6.1

Generic type: Plan

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The maintenance plan presents how the organization or project plans to conduct maintenance (logistics) activities. It provides the objectives, strategy, and approach for the system or software maintainer to resolve problems, update the system and test new updates. It identifies 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. It identifies outputs of the maintenance process. It lists resources (for example, facilities, software, hardware, tools, and personnel) needed to perform all aspects of maintenance, and identifies interrelationships between resources. It provides schedules and criteria for performing maintenance. It should identify the specific standards, methods, tools, and responsibilities for scheduled and preventive maintenance activities. It addresses special procedural requirements during maintenance (for example, security, access rights, and documentation control).

10.31 Maintenance problem/ modification report

ISO/IEC 12207:1995 reference: 5.5.2.4

Generic type: Report

The maintenance problem/modification report includes information for problem and modification analysis. The needed information includes replication/verification of the problem, options for implementing the modification, results of the analysis, and approval to proceed. See *problem report.*

10.32 Maintenance procedures

ISO/IEC 12207:1995 reference: **5.5.1.2**, 5.4.1.3. AMD 1: F.1.5 3)

ISO/IEC 15288:2002 reference: 5.5.11.3 a)4), 5.5.11.3 e), 5.5.11.3 h), B.3.3 f)7), B.6.1

Generic type: Procedure

Maintenance procedures cover the processes for receiving, recording, and tracking problem reports and change requests (modification requests) from users, 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 anticipated system or software areas that could change and needs for training.

10.33 Migration plan

ISO/IEC 12207:1995 reference: 5.5.5.2

ISO/IEC 15288:2002 reference: B.7.3 c)

Generic type: Plan

The migration plan presents how system, service, or software products will be transferred to a new environment. It should include identified risks, potential problems, and suggested resolutions.

10.34 Modification notification report

ISO/IEC 12207:1995 reference: **5.5.5.3**, 5.5.5.5. AMD 1: F.1.5 7), F.3.5 7), 7.5.3.8

Generic type: Report

The modification notification report announces to the users that a migration or modification is about to occur, or has occurred. it provides the schedule for the migration, describes the new environment, and identifies support options for the old environment.

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10.35 Modification requirement report

ISO/IEC 12207:1995 reference: 5.5.3.1

Generic type: Report

The modification requirement report records the approach, reasoning and results of an analysis to determine what documents and what product or software units and versions need to be modified.

10.36 Modification test report

ISO/IEC 12207:1995 reference: 5.5.3.2 a), 5.5.3.2 b)

Generic type: Report

The modification test report presents test results based on the modification test and evaluation criteria. It includes test requirements, test and evaluation criteria for modified and unmodified parts of a system, an item identification, date of testing, test identifier, overview of results, detailed results, problems encountered, and rationale for decisions.

10.37 Monitoring and control report

ISO/IEC 12207:1995 reference: 5.2.5.3. AMD 1: 7.5.3.5

ISO/IEC 15288:2002 reference: 5.2.3.3 f), 5.4.6.2 d), 5.4.8.3 i), 7.5.3.5

Generic type: Report

The monitoring and control report provides monitoring results. It may include a history of all monitoring results and control actions and results of individual monitoring audits. It may cover monitoring the progress of technical performance, risk mitigation, cost and schedules; and reporting of project status. It may cover asset reuse, including information on the original developer or owner of the asset, cost of reusing the asset, and savings and benefits derived from reusing the asset.

10.38 Operational test procedures

ISO/IEC 12207:1995 reference: **5.4.1.3,** 5.5

ISO/IEC 15288:2002 reference: 5.5.6.3 e)

Generic type: Procedure

Operational test procedures define how to test a system or software before its operational release, in its intended environment. It includes acceptance criteria, version identification of the system or software being tested, test data, and post-test analysis procedures to ensure testing occurred as planned. It provides for use of the organization's problem resolution procedure.

10.39 Operations plan

ISO/IEC 12207:1995 reference: 5.4.1.1

ISO/IEC 15288:2002 reference: 5.5.10.3 f), B.2.1

Generic type: Plan

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The operations plan presents the concept of operations, that is, how existing and potential operations for the installed system will be conducted. It describes operational activities and tasks for the installed system. It includes plans for implementing user support and operations.

10.40 Organizational procedures

ISO/IEC 12207:1995 reference: 7.3.1.1, 7.3.2.2

ISO/IEC 15288:2002 reference: 5.2.2.3, 5.2.3.3, 5.3.2.1, 5.3.2.2 a), 5.3.2.3, 5.3.2.3 b), 5.3.2.3. f), 5.3.3.3, 5.3.4.3, 5.3.5.3, 5.3.6.3, 5.4.2.3, 5.4.3.3, 5.4.4.3, 5.4.5.3, 5.4.5.3 g), 5.4.6.3, 5.4.7.3, 5.4.8.3, 5.5.10.3, 5.5.11.3, 5.5.12.3, 5.5.2.3, 5.5.3.3, 5.5.4.3, 5.5.5.3, 5.5.6.3, 5.5.6.3 c), 5.5.7.3, 5.5.8.3, 5.5.9.3

Generic type: Procedure

Organizational procedures define how to support the system or software life-cycle processes through the organization's business activities. It includes processes and their application to specific cases; process controls to develop, monitor, control and improve the processes; the process for process assessments; and schedules.

10.41 Problem report

ISO/IEC 12207:1995 reference: 5.3.1.2 c), 5.4.1.2, 5.4.4.3, 5.5, 5.5.1.2, 6.3.1.4, 6.4.1.6, 6.5.1.5, 6.6.1.4, 6.7.1.5, **6.8,** 6.8.1.1, a), 6.8.2.1, 7.1.3.3, AMD 1: F.2.7 4), F.3.5 7), 7.5.1.2 b), 7.5.3.6, 7.5.3.7.

ISO/IEC 15288:2002 reference: 5.4.3.1, 5.4.3.3 i), 5.4.4.3 d), 5.4.5.3 c), 5.4.5.3 f, 5.4.5.3 g, 5.5.4.3 f), 5.5.6.2 d), 5.5.6.3 g), 5.5.7.2 c), 5.5.7.3 g), 5.5.8.2 e), 5.5.8.3 h), 5.5.9.1, 5.5.9.2 d), 5.5.10.2 c), 5.5.11.1, 5.5.11.2 e), 5.5.11.2 e), 5.5.11.3 d), 5.5.11.3 e), 5.5.11.3 f), 5.5.11.3 j), B.5.1, B.5.3 d), B.6.1, B.7.1

Generic type: Report

The problem report (also called non-conformance or incident report) reports problems or non-conformance (deviance) with contract requirements. It serves as input to the ISO/IEC 12207:1995, Problem Resolution Process. It may include a problem reporting control number and related control information; identification of the problem reporter; the date and location (environment) of the problem in the system, software or information configuration item; applicable contract provision or conformance requirement; cause, nature, and impact (severity) of the problem; solution or corrective action recommended; similar problems previously reported; responsible person or organization, along with appropriate confirmation showing approval and implementation of the solution. 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. It may include information from organizational (internal) reviews. It may list problems and related action items (including the responsible person or organization and due date) and information (for example, approvals and resolution) about problem closure. It may be a consolidation of problem records. It should be used for future reference to prevent problems and identify a duplication of issues and trends. See *change request* and *maintenance problem/modification report*.

10.42 Problem resolution procedure

ISO/IEC 12207:1995 reference: 5.4.1.2, **6.8.1.1**, 6.8.2.1. AMD 2: F.2.8 6)

Generic type: Procedure

The problem resolution procedures define how to receive, record, resolve, and track problems and how to provide feedback. It covers action initiation, notification, classification, cause analysis, trend analysis, problem resolution, status tracking and reporting, and problem records management.

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10.43 Process assessment procedure

ISO/IEC 12207:1995 reference: **7.3.2.1**, 7.3.3.1

Generic type: Procedure

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.

10.44 Process improvement analysis report

ISO/IEC 12207:1995 reference: 7.3.3.2, 7.3.3.3

Generic type: Report

Based on historical, technical and evaluation data, the process improvement analysis report presents approaches to improve processes, to recommend changes and to determine technology advancement needs. It may include quality cost data to improve an organization's processes and to determine the cost of quality.

10.45 Product need assessment

ISO/IEC 12207:1995 reference: 5.1.1.1

ISO/IEC 15288:2002 reference: B.2.1

Generic type: Report

The product need assessment presents the decision and rationale to acquire, develop, or enhance a system, software product or service. It describes 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). It is used to obtain consensus among an acquirer, developer, and support and user organizations on the operational concept of 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 interested parties. It may include 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. Change issues may be identified, including priorities, assumptions and constraints, and changes considered but not recommended. It includes operational scenarios (concept of operations) to illustrate the role of the new or modified system, its interaction with users, and states or modes identified for the system. Scenarios (or use cases) should include events, actions, stimuli, information, and interactions. It summarises operational, organizational and development impacts. It reviews cost, criticality and feasibility of the intended system. It may include analysis of improvements, disadvantages and limitations, and considered alternatives and tradeoffs. It may provide assessments for technical, strategic, economic and market bases, and trade-off studies. It may include preliminary information on system requirements, system prototypes, possible system employment(s), contract type(s), current and potential organizational responsibilities, possible support concepts, and risk and risk management methods.

10.46 Production plan

ISO/IEC 15288:2002 reference: B.3.3 f) 4), B.3.3 j)

Generic type: Plan

The production plan describes the approach to integration and assembly of system elements in system production, including provision of facilities and resources and preparation for integration testing.

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10.47 Progress report

ISO/IEC 12207:1995 reference: 7.1.3.4. AMD 1: F.3.1.3 6), H.1.12 2), 5.1.10.2 d),

ISO/IEC 15288:2002 reference: 5.4.3.3 i), 5.4.5.2 d), 5.4.5.3 f), 5.4.6.3 i), 6.3.

Generic type: Report

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

10.48 Project management plan

ISO/IEC 12207:1995 reference: 5.2.4.3, 5.2.4.4, **5.2.4.5**, 5.2.5.4, 7.1.2.1

ISO/IEC 15288:2002 reference: 5.2.3.3 e), 5.3.3.3 f), 5.3.3.3 g), 5.3.5.3 a), 5.4.1, 5.4.2.1, 5.4.2.2 a), 5.4.2.2 e), 5.4.2.3 b), 5.4.2.3 c), 5.4.2.3 i), 5.4.3.3 a), 5.4.3.3 b), 5.4.3.3 g), 5.4.4.1, 5.4.4.3 a), B.2.1, B.3.3 a)

Generic type: Plan

The project management plan presents how the project processes and activities will be executed to assure the project's successful completion, and the quality of the deliverable product or service. It identifies the selected system or software life-cycle model to satisfy contractual requirements, and maps processes, activities and tasks to the selected life-cycle model. It includes the project's organizational structure, showing authority and responsibility of each organizational unit, including external organizations and responsibilities of acquirers, suppliers, and users. It specifies the expected acquirer involvement in joint reviews, audits, informal meetings, reports, change requests, implementation, approval, acceptance, and access to facilities. It specifies the expected user involvement in requirements specification, reviews, and evaluations. It should include a work breakdown structure of the life cycle processes and activities, including the products, services, documents and information items, and non-deliverable items to be performed. It presents risks and risk analysis for technical, cost, and schedule risks. It includes requirements for resource needs and the acquirer's involvement in providing resources. It identifies security policies for the control of access to systems and software items, project information, data, and infrastructures. It may include options for developing the product or providing the service and analyse the risks associated with each option. It may include plans for subcontractor management, including subcontractor selection and involvement between the subcontractor and the acquirer, if any. It may include 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. It identifies other plans to be produced as separate documents during the project.

10.49 Proposal

ISO/IEC 12207:1995 reference: 5.2.2.1. AMD 1: F.3.6.5) AMD 2: F.1.2.1, F.1.2.1 2)

ISO/IEC 15288:2002 reference: 5.2.2.3 d)

Generic type: Description

The proposal 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 signature of supplier's approving authority. Informally, proposals may be prepared within an organization, such as for software reuse.

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10.50 Qualification test procedure

ISO/IEC 12207:1995 reference: 5.3.8.4

Generic type: Procedure

The qualification test procedure provides a set of tests so that each qualification requirement is addressed for the system or software items. It includes mapping of requirements to qualification tests and overall requirements to perform qualification testing, test objectives, test criteria, test configurations, preparations, test cases (inputs, steps, and outputs), expected results, and post-test analysis procedures.

10.51 Qualification test report

ISO/IEC 12207:1995 reference: 5.3.9.1, 5.3.11.1

Generic type: Report

The qualification test report documents that the system was tested for compliance with each system requirement, produced the expected results, and is feasible to operate and maintain. It provides the results of each qualification test and states whether all requirements were satisfied. It includes system identification and overview, qualification requirements and criteria, overview of results, identification of items tested and dates of testing, detailed results, problems encountered, and rationale for decisions.

10.52 Quality assurance plan

ISO/IEC 12207:1995 reference: 5.2.4.1, 6.3.1.3, 7.1.2.1.

NOTE Co-ordinate with ISO/IEC 12207:1995, clauses 6.4, 6.5, 6.6, 6.7, and 6.8.

ISO/IEC 15288:2002 reference: 5.3.6.3 e), 5.4.2.3 l), 5.4.3.3 b

Generic type: Plan

The quality assurance plan (in accordance with ISO/IEC9001:2000 or other quality standard) presents the approach to fulfil the quality aspects of the program, product or service. It defines the project or organization's quality objectives and identifies the organization’s quality policies. It addresses product and service improvement plans and assessment plans, with assessment requirements, criteria, responsibilities, and allocations. It defines the minimum documentation requirements, and identifies required records of the quality activities and tasks, as well as records of problems and problem resolutions, and the configuration management of quality records. It specifies reviews and audits for the tasks of testing, problem reporting, and corrective action included in the verification, validation, joint review, and audit processes. It provides for assessment of configuration control of system or software configuration items and media. It identifies the required coordination of software quality assurance activities with other project activities.

10.53 Quality management procedures

ISO/IEC 15288:2002 reference: 5.3.2.3 b), 5.3.6.2 a), 5.3.6.3 a), 5.4.2.3 l), 6.3.1.3

Generic type: Procedure

The quality management procedures explains how the quality aspects of the program, product or service will be managed. It includes procedures for contract reviews; inspections, assessments, and reviews and audits for the tasks of testing, problem reporting, process improvement, and corrective action; as included in the verification, validation, joint review, process improvement, and audit processes.

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10.54 Release record

ISO/IEC 12207:1995 reference: 6.2.4.1, 6.2.6.1. AMD 2: F.1.2.3 3)

ISO/IEC 15288:2002 reference: 5.4.7.3 b), 5.4.7.3 c), 5.4.8.3 f), 5.5.8.2 d), 5.5.8.3 h), B.5.1

Generic type: Description

The release record identifies, tracks, and controls a configuration item at the time a version (including the baseline version) is released. For software, it identifies 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 problems and workarounds. It may include installation or delivery instructions.

NOTE A configuration record may be documented at times other than version release, such as the initiation or completion of a process, test, or phase. See also *system element description*.

10.55 Request for proposal (RFP)

ISO/IEC 12207:1995 reference: **5.1.2.1**, 5.1.2.3, AMD 1 H.1.8, H.1.8 7)

ISO/IEC 15288:2002 reference: 5.2.2.3 b), 5.2.2.3 c), 5.5.2.3 b)

Generic type: 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 includes the stakeholders' system requirements, scope statement, bidder instructions, deliverable product list, terms and conditions, contract milestones (for example, review and audit of supplier progress), control of subcontracts, procedure and technical constraints (for example, target environment). It includes applicable supporting processes and their performing organizations, including responsibilities (if other than supplier), so suppliers may, in their proposals, define the approach to each of the specified supporting processes. It provides the scope of tasks to be referenced in the draft contract. 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).

10.56 Retirement notification report

ISO/IEC 12207:1995 reference: **5.5.6.2,** 5.5.6.4, 7.5.3.8

Generic type: Report

The retirement notification report announces that a system, software item or asset is about to be, or has been retired. It provides the schedule for the retirement, describes the new environment, and identifies disposal or archiving provisions for retired system or software.

10.57 Retirement plan

ISO/IEC 12207:1995 reference: 5.5.6.1, 7.1.2.1

ISO/IEC 15288:2002 reference: B.3.3.f) 8), B.5.3 f), B.7.3 c)

Generic type: Plan

The retirement plan presents how activities will be conducted to retire systems or software items and related documents. It identifies stakeholders and user organizations or users to be notified of the planned retirement, replacement products and systems, if any; a schedule for cessation of support; and plans for system disposal or archiving the software and documentation.

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10.58 Reuse plan

ISO/IEC 12207 AMD 1 reference: 7.6.1.5 a), **7.6.4.1**, 7.6.5.1, F.3.6.5

Generic type: Plan

The reuse plan presents how activities will be conducted to support the reuse of systems or software assets and related documents. It defines the reuse strategy and implementation approach, including infrastructure support.

10.59 Risk management plan

ISO/IEC 15288:2002 reference: 5.4.6.3 h), B.2.3 e, B.2.3 i)

Generic type: Plan

The risk management plan presents the approach to the identification, assessment, treatment (including avoidance, mitigation, and contingency plans), and monitoring of risks, as well as for registering risks and reporting risk status.

10.60 Risk management procedures

ISO/IEC 15288:2002 reference: 5.3.2.3 b)

Generic type: Procedure

Risk management procedures present the methods and activities to identify, assess, treat, monitor, register, and report on risks. The procedures should include contingency planning, the methods to be used in tracking the various risk factors, evaluating changes in the levels of risk factors, and the responses to those changes.

10.61 Software integration test plan

ISO/IEC 12207:1995 references: **5.3.5.5**, 5.3.6.6, 5.3.7.4, 5.3.8.1

Generic type: Plan

The test plan prescribes the scope, approach, resources, and schedule of the testing activities. It identifies the items to be tested, the features to be tested, the testing tasks to be performed, the personnel responsible for each task, and the risks associated with the plan. The software integration test plan provides top-level (architecture) requirements for executing software integration tests. It includes the software integration requirements. It identifies preliminary test requirements and a schedule for software integration. It lists resources needed to run (execute) the different tests, test tools, and supporting hardware and software. It describes the test environment and identifies the tests to be performed and the sequence of events (sequence of executing the test procedures). For each software integration task and test, it contains a list of applicable software units, software components and previously integrated software items. It describes the test preparations, cases and procedures to be used to perform testing. It presents the assigned responsibilities for executing the test procedures, including the locations and organizations for the Test Manager, testers, quality assurance, configuration management, test evaluation and reporting, and supplier involvement in testing. It defines how the results of test executions will be recorded to show product or service requirements have been satisfied. It may include test conditions to verify or validate system or software requirements for each test case, listings of data to be used during testing, procedures/steps for executing a test, for example, pre-test procedure requirements, test set up and completion instructions, actions required to execute the test steps, expected test results for each test step, post-test analysis steps, mapping to covered requirements, test objectives, and expected output data. It may include information on remaining deficiencies, limitations or constraints; the impact of the test environment, and recommended improvements in the design, operation or testing of the software. As events near the schedule for each test type, the test schedule should be updated to provide more detailed information. It may also address unit, system, and qualification tests. It enables an assessment of the adequacy of planning for testing.

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10.62 Software requirements specification

ISO/IEC 12207:1995 reference: **5.1.1.2**, 5.3.2.1, 5.3.4.1, AMD 1: F.1.1.1 2), F.1.1.1 3), F.1.3 1), F.1.3.1 2) F.1.3.2 1), F.1.3.2 3) through 6), F.1.3.2 8) F.1.3.3 8), F.1.3.4 1) through F.1.3.4 8), F.1.3.5 4), H.1.2 6), H.1.4, H.1.4 1), H.1.4 3) through 6), H.1.7, H.1.7 2, H.1.7 3), H.1.7 5), H.1.7 7), H.1.8 2), H.1.12 3)

Generic type: Specification

The software requirements specification identifies the software requirements, including safety, security and quality characteristics. It indicates the precedence and criticality of requirements. It includes references for design, testing, and compliance standards and procedures. It includes internal and external interfaces with the system, hardware, communications; human users, and other software; site adaptation requirements; product assumptions and dependencies; design constraints; and product functions. It includes business, organizational, and user system requirements; other system criticality requirements; system design requirements; system testing and qualification requirements; system functional requirements; system non-functional requirements; system quality requirements, and acceptance requirements. It includes requirements for user documentation, human-factors engineering (ergonomics), packaging, installation, training, operations, product updating, and maintenance. It describes the methods and tools used to define traceability from system requirements to system architecture, software requirements, software architecture, and software items and units.

NOTE ISO/IEC 12207 refers to system requirements specification when the software is considered to be the system.

10.63 Software unit description

ISO/IEC 12207:1995 reference: 5.3.7.1 a)

Generic type: Description

The software unit description represents the software object or code. It may be provided by embedded documentation or comments in the code.

10.64 Software unit test plan

ISO/IEC 12207:1995 references: 5.3.6.5

Generic type: Plan

The software unit test plan provides the detailed activities for executing software unit tests. It includes the software unit test schedule and the test approach to stress the software units to the limits of the requirements. It may include the test case specifications to document the actual values used for input along with the anticipated outputs.

10.65 Software unit test procedure

ISO/IEC 12207:1995 reference: 5.3.7.1 b)

Generic type: Procedure

The software unit test procedure includes the test steps to be used to test each software unit. It includes provisions for problem resolution.

10.66 Software unit test report

ISO/IEC 12207:1995 references: 5.3.7.2

Generic type: Report

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The software unit test report provides the results of testing software components (units, items) and states whether all applicable requirements were satisfied. It includes an item identification, date of testing, test requirements and criteria, test identifier, overview of results, detailed results, problems encountered, and rationale for decisions.

10.67 Software user documentation

ISO/IEC 12207:1995 references: 5.3.5.4, 5.3.6.4, 5.3.7.3, 5.3.8.3, 5.3.9.2. AMD 1 reference: 7.7.5.5

Generic type: Procedure

Software user documentation provides user procedures for performing specified tasks using the software system. It may include installation and de-installation procedures. It includes a brief description of the intended use of the software (the concept of operations), the supplied and required resources, needed operational environment, and availability of problem reporting and assistance. It provides procedures to access and exit the software. It should list and explain software commands and system-provided messages to the user. As appropriate for the identified risk, it includes warnings, cautions, and notes, with corrective actions. It includes troubleshooting and error correction procedures. (See also *user documentation* - for systems).

NOTE ISO/IEC 18019 provides guidance on the process and formats for software user documentation.

10.68 Strategic plan

ISO/IEC 12207 AMD 1: F.3.1.1 5)

ISO/IEC 15288:2002 reference: 5.3.2.3 a)

Generic type: Plan

The strategic plan identifies the mission, core values, vision, goals or objectives of the enterprise or business area; the projects, life cycle processes, and activities which are intended to achieve the goals; and resources and responsibilities.

NOTE ISO/IEC 15288:2002 frequently refers to strategy in the general sense of a high-level policy concept or approach for a life cycle process. No particular form of documentation is implied, though strategies are frequently documented in plans.

10.69 Supplier selection procedure

ISO/IEC 12207:1995 reference: 5.1.3.1

Generic type: Procedure

The supplier selection procedure explains how to select the supplier, including proposal evaluation criteria and requirements compliance weighting.

10.70 System architecture description

ISO/IEC 12207:1995 reference: 5.3.3.1. AMD 1: F.1.3.3 8), 7.7.3.1

ISO/IEC 15288:2002 reference: 4.24, 5.5.4.3 h), 5.5.4.3. i), B.2.1, B.3.3 b), D.2.2

Generic type: Description

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The system architecture description describes the top-level system or domain architecture for the viewpoint of a selected audience (stakeholders). It presents the system-wide purpose, constraints, design decisions and rationale. It should partition the system into design entities and describe the important properties and relationships among those entities. It identifies high-level items of hardware, software (including database and user interface) and manual operations, and their interfaces. Hardware and software configuration items and manual operations are subsequently identified from these high-level items. It ensures that the system requirements are allocated among the items. It presents the concept of operation using the architectural components. It may present the domain model.

10.71 System description

ISO/IEC 15288:2002 reference: 4.14, 5.5.7.3 a), B.3.3 f) 1)

Generic type: Description

The system description applies the system architecture description to the design of a system-of-interest or interface, including the detailed design decisions needed to fabricate and implement hardware. It may include hardware diagrams, drawings, and models. It includes the detailed structure description of hardware components (to the unit level to be tested). It provides visibility into the design constraints and information needed for security, safety, usability, system support, and disposal. It includes the design decisions about the item's behavioural design (how it behaves, from a user's viewpoint, in meeting its requirements, ignoring internal implementation) and other decisions affecting the selection and design of the configuration items. It should identify applicable standards and protocols. It should define how errors would be handled. It includes the detailed design for external interfaces between related components and between related elements. It ensures applicable system functions and requirements are allocated to the system components, and provides traceability from each item to the item requirements allocated to it. The system description permits system implementation or selection of COTS or items for reuse without the need for further information. See *interface description, high-level software design description*.

10.72 System element description

ISO/IEC 15288:2002 reference: 5.5.4.2 b), D.3.3

Generic type: Description

The system element description applies the system architecture description and system description to the low-level system configuration items and elements. The system element description is at a level of detail to permit design, implementation and test. The system element descriptions should be reviewed to ensure they represent a consistently integrated system architecture.

10.73 System life cycle description

ISO/IEC 15288:2002 reference: 5.3.2.3 b), 5.3.4.3 b), 6.3, A.2.2, A.2.3 a), A.2.3 f) 2), A.2.3 f) 3), A.2.3 g) 1), A.2.3 g) 2)

Generic type: Description

The system life cycle description presents the system or software life cycle stages and processes that have been selected and tailored. It includes references to the standards and organizational procedures for the system life cycle processes. It documents the assumptions and circumstances that led to tailoring the life cycle model and processes, including business strategy, resources, quality aspects, and risk. It defines the purpose, processes, and outcomes of each stage in the life cycle model. It identifies the purpose, activities, and outcomes of each process in the life cycle.

10.74 System integration test procedure

ISO/IEC 12207:1995 reference: 5.3.10.2

Generic type: Procedure

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The system integration test procedure documents the steps for performing a system integration test. It includes inputs, outputs, test criteria, test set-ups and post-test analysis procedures.

10.75 System requirements specification

ISO/IEC 12207:1995 references: 5.1.1.2, **5.3.2.1**. AMD 1: 6.9.2.1, 6.9.2.2 a), 6.9.2.2 f), 6.9.2.8 b)

ISO/IEC 15288:2002 reference: 4.24, 5.4.4.3 a), 5.5.2.3 b), 5.5.2.3.k), 5.5.3.2 a), 5.5.3.3 a), 5.5.4.3 a), 5.5.7.3 a), B.2.1, B.2.3 c, B.2.3 f, B.3.1, B.3.3 a), B.3.3 e), B.3.3 f)3)

Generic type: Specification

The system requirements specification identifies the technical specifications for the selected system-of-interest and usability specifications for the envisaged human-system interaction. System requirements include business, organizational, and user (stakeholder) requirements. It includes system-level functions; safety, security, and critical maximum and minimum performance requirements; and references to related system design, testing and compliance standards. See also *software requirements specification.*

NOTE ISO/IEC 12207 refers to system requirements specification when the software is considered to be the system.

10.76 Training documentation

ISO/IEC 12207 AMD 1 reference**:** 7.4.2.2. (See also ISO/IEC 15910)

ISO/IEC 15288:2002 reference: B.3.3 f) 6)

Generic type: Procedure

Training documentation includes the training manuals and presentation material used in providing training. It may include a list of materials needed to develop and implement training manuals and presentations.

10.77 Training plan

ISO/IEC 12207 AMD 1 reference: 7.1.2.1, 7.4.2.1

Generic type: Plan

The training plan presents how training will be prepared, conducted, and evaluated. It identifies the required outcomes of training; required resources; management and technical staff skills and categories of personnel needing and providing training; types and levels of training and knowledge to satisfy needs of personnel, project team or organization; topics or course contents; implementation schedule; and evaluation approach.

10.78 User Documentation

ISO/IEC 15288:2002 reference: 5.5.10.3, j, 5.5.12.3 e), 5.5.5.3 a), c), 5.5.6.3 c), 5.5.6.3 f), B.3.3 f)5), B.4.1, B.5.1, B.7.1, D.1.2

Generic type: Procedure

User documentation for systems provides user procedures (instructions) for performing specified tasks to use (operate) the system. It may include implementation, integration (assembly), installation and de-installation, and retirement and disposal procedures. It includes a brief description of the intended use of the system (the concept of operations), the supplied and required resources, needed operational environment, and availability of problem reporting and assistance. It should contain instructions in ordered steps for user tasks. It should list and explain system-provided messages to the user. As appropriate for the identified risk, it includes warnings, cautions, and notes, with corrective actions. It includes troubleshooting and error correction procedures. (See also *software user documentation*.)

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10.79 Validation plan

ISO/IEC 12207:1995 reference: 6.5.1.4

ISO/IEC 15288:2002 reference: 5.5.9.3 b)

Generic type: Plan

The validation plan presents the validation strategy, how the validation process will be conducted, including items subject to validation; validation criteria, validation tasks; resources, responsibilities, tools, and schedule; and procedures for recording and reporting results of validation. It identifies the methods used for validation, such as analysis, evaluation, review, inspection, assessment, and testing of the products, interfaces, and the processes that produced the products. It specifies the organizational relationships and degrees of independence between development activities and validation activities. It may identify a software integrity level and scheme.

10.80 Validation test specification

ISO/IEC 12207:1995 reference: 6.5.2.1

Generic type: Specification

The validation test specification details the conditions for validation testing, including environment, objectives, scenarios or test cases, acceptance criteria, and expected results that will validate that the users can successfully achieve their intended tasks using the system or software.

10.81 Validation report

ISO/IEC 15288:2002 reference: 5.5.9.2 d), 5.5.9.3 d), 5.5.9.3 g), B.3.3 c)

Generic type: Report

The validation report provides the results and conclusions of system or software validation on a software item, system, or subsystem. It enables the acquirer to assess the validation and its results. It includes system identification and overview, validation requirements and criteria, overview of results, identification of items validated and dates of validation, detailed results, problems encountered, and rationale for decisions.

10.82 Verification plan

ISO/IEC 12207:1995 references: 6.4.1.5, AMD 1 F.2.4.

Generic type: Plan

The verification plan presents the verification strategy and how the verification process will be conducted. It identifies the life cycle activities and system and software products subject to verification, and the required verification tasks for each life cycle activity, product and related resources. It identifies the methods used for verification, such as analysis, evaluation, review, inspection, assessment, and testing of the products and the processes that produced the products. It specifies the organizational relationships and degrees of independence between development activities and verification activities. It includes the procedure for forwarding verification reports to those who need them. It may include the software integrity level and scheme, and documentation requirements.

10.83 Verification report

ISO/IEC 12207:1995 references: **6.4.2**, 7.1.4.1

ISO/IEC 15288:2002 reference: 5.5.7.3 e), B.3.3 c)

Generic type: Report

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The verification report provides the results and conclusions of verification on a software item, system, or subsystem. It enables the acquirer to assess the verification and its results. It includes system identification and overview, verification requirements and criteria, overview of results, identification of items verified and dates of verification, detailed results, problems encountered, and rationale for decisions.

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Annex A
(informative)

Procedure for identifying information items and their contents

The following steps should be performed while developing a documentation plan, to determine what information items are needed and the information-item contents (also see ISO/IEC 6592:1999):

1. Review and tailor (as needed) ISO/IEC 15288:2002 or ISO/IEC 12207:1995, to determine the system or software life-cycle model for the project. This includes any tailoring of the Information Management or Documentation Process.

2. Examine Clause 8, Tables 1 and 2 of this International Standard to match the information items with the organization and project's life-cycle tasks.

3. Tailor Clause 8, Tables 1 and 2 of this International Standard to satisfy the project's documentation needs and requirements.

4. Determine and list what information items are deliverable documents, intermediate deliverables, or non-deliverables; and what information items are to be archived.

NOTE This step is performed based on applicable agreements and organizational policies.

5. Determine information item content requirements for the system or software life cycle, organization and project, using Clauses 9 and 10 of this International Standard.

6. Tailor and finalize the content requirements of each required information item.

7. Determine the title, style, format and schedule of each information item or information item type, including provisions for updates of preliminary and intermediate information items.

8. Examine Tables 2 and 3 to identify sources of information-item inputs.

9. Develop a plan for information reuse: consider what is common among information items and applicable information item types, define a hierarchy of information items, and select a method for sharing information sources and content among related information items.

10. Define the procedures for configuration management of intermediate and final information item versions.

11. Determine the quality characteristics of each information item and information item type.

12. Determine how the quality characteristics will be evaluated for each information item and information item type.

13. Define the deliverable information item review and approval criteria and process, including authority, responsibilities and title of individual(s) who can approve each information item.

14. Determine how long the archived information items are to be stored and on what media, for example, paper or disk.

15. Include the actions and results of the above activities in a documentation plan.

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Annex B
(Informative)

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