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Systems and software engineering — Software life cycle processes —

Part 2: Relation and mapping between ISO/IEC/IEEE 12207:2017 and ISO/IEC 12207:2008

Ingénierie des systèmes et du logiciel — Processus du cycle de vie du logiciel —

Partie 2: Relation et correspondance entre l'ISO/IEC/IEEE 12207:2017 et l'ISO/IEC 12207:2008

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Institute of Electrical and Electronics Engineers, Inc
3 Park Avenue, New York
NY 10016-5997, USA

Email: stds.ipr@ieee.org
Website: www.ieee.org

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Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the rules given in the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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

A list of all parts in the ISO/IEC/IEEE 12207 series can be found on the ISO website.

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

Introduction

The processes in ISO/IEC/IEEE 12207:2017 form a comprehensive set from which an organization can construct software system life cycle models appropriate to its products and services. An organization, depending on its purpose, can select and apply an appropriate subset to fulfil that purpose.

However, ISO/IEC/IEEE 12207:2017 does not include "software-specific processes" as a specialization of system processes, as identified in ISO/IEC 12207:2008, Clause 7. Those processes are partially represented as activities, tasks and NOTEs in processes defined in ISO/IEC/IEEE 12207:2017. This document supports software engineering users of ISO/IEC 12207:2008 in applying their current processes, activities and tasks based on the previous edition to perform effectively and efficiently processes, activities and tasks in ISO/IEC/IEEE 12207:2017. This document also intends to help system engineers using ISO/IEC/IEEE 12207:2017 (or ISO/IEC/IEEE 15288:2015) collaborate with software engineers who have used ISO/IEC 12207:2008.

This document can be used in one or more of the following modes in conjunction with ISO/IEC/IEEE 12207:

— By an organization — to help use the current organizational software processes and assets derived from ISO/IEC 12207:2008 in establishing an environment of desired processes of ISO/IEC/IEEE 12207:2017.

— By a project — to help use the current project's software processes and assets derived from ISO/IEC 12207:2008 and extend these to processes of ISO/IEC/IEEE 12207:2017 to provide software systems as products and services.

— By an acquirer and a supplier — to help use the current agreement concerning processes and activities derived from ISO/IEC 12207:2008 in establishing an environment of desired processes of ISO/IEC/IEEE 12207:2017.

— By process assessors — to serve as an aid to mapping tasks and activities of the previous edition of ISO/IEC 12207:2008 to the process reference model in ISO/IEC/IEEE 12207:2017, Annex C for process assessments that may be used to support organizational process improvement.

Systems and software engineering — Software life cycle processes —

Part 2: Relation and mapping between ISO/IEC/IEEE 12207:2017 and ISO/IEC 12207:2008

1 Scope

This document provides the mapping expressing corresponding relations between software life cycle processes in ISO/IEC/IEEE 12207:2017 and the processes in ISO/IEC 12207:2008.

These relations are demonstrated by means of mapping tables that show relationships between activities and tasks, and process outcomes.

This mapping assists users of ISO/IEC 12207:2008 to transition to using ISO/IEC/IEEE 12207:2017.

This document will help users understand the differences between the reference processes and requirements of the two editions of ISO/IEC/IEEE 12207, and any potential gaps or process enhancements that can be needed in seeking conformance to and/or using ISO/IEC/IEEE 12207:2017. Also, this document provides to such users the mapping which helps to identify corresponding process outcomes, activities and tasks of processes for software systems in ISO/IEC/IEEE 12207:2017.

The mapping between ISO/IEC/IEEE 12207:2017 and ISO/IEC 12207:2008 in this document can be used as a basis to continuously conduct, improve and extend current process assets including software specific process assets based on ISO/IEC 12207:2008 for effective implementation of ISO/IEC/IEEE 12207:2017. These process activities and tasks can be applied iteratively.

2 Normative references

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC/IEEE 12207:2017 apply.

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

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

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

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

NOTE Definitions for software engineering terms typically can be found in ISO/IEC/IEEE 24765, available at www.computer.org/sevocab.

4 Purpose

Users should apply this document to map between their current software life cycle processes consistent with ISO/IEC 12207:2008 and the processes, activities, and tasks required by ISO/IEC/IEEE 12207:2017.

The user may define and document user implemented processes differently from either ISO/IEC 12207:2008 or ISO/IEC/IEEE 12207:2017. Then, the mapping tables of this document may be modified with additional user process information, when the user's processes are mapped to the reference processes of ISO/IEC/IEEE 12207:2017 in order to claim conformance with that standard.

This document will help users (who are presumably users of ISO/IEC 12207:2008 as well) to understand the similarities and differences between the reference process definitions and requirements contained in ISO/IEC 12207:2008 and ISO/IEC/IEEE 12207:2017 and then to help map their own implemented lifecycle processes to ISO/IEC/IEEE 12207:2017. Where ISO/IEC/IEEE 12207:2017 requirements (at the level of processes, outcomes, activities or tasks) differ from those in ISO/IEC 12207:2008, the user will be able to identify elements (again at the level of processes, activities or tasks) which have gaps or will not meet the requirements for conformance with ISO/IEC/IEEE 12207:2017.

Users can identify corresponding process outcomes, activities or tasks from the mapping tables in Clause 6.

This document has none of conformance requirements. However, process outcome or activity/task mapping of this document can be used to support conformance to ISO/IEC/IEEE 12207:2017. Such a case is stated in Clause 1.

NOTE 1 The mappings in this document expand on ISO/IEC/IEEE 12207:2017, Table I.1, "Comparison of processes in ISO/IEC/IEEE 12207:2017 and the previous edition", and ISO/IEC/IEEE 12207:2017, Table I.2, "Comparison of process outcomes in ISO/IEC/IEEE 12207:2017 and software-related outcomes in the previous edition".

NOTE 2 Analysis of the relationships between the tasks and activities of ISO/IEC 12207:2008 and ISO/IEC/IEEE 12207, as detailed in this document, can assist in process assessment and improvement. ISO/IEC 33004 can be used to develop a process reference model.

The following are typical use cases when users of this document can apply mappings:

— users can understand which processes, outcomes, activities, or tasks of ISO/IEC/IEEE 12207:2017 cover or subsume the outcomes, activities, or tasks of processes (including software specific processes) of ISO/IEC 12207:2008;

— users can identify outcomes, activities, or tasks of processes (including software specific processes) of ISO/IEC 12207:2008 that are to be continuously conducted, enhanced, extended or improved to meet the requirements of ISO/IEC/IEEE 12207:2017 and/or to demonstrate achievement of required outcomes, activities and tasks of the software life cycle processes.

5 Overview of the mappings

5.1 General

The process models used in ISO/IEC 12207:2008 and ISO/IEC 15288:2008 were harmonized to the process model used in both ISO/IEC/IEEE 12207:2017 and ISO/IEC/IEEE 15288:2015.

This document provides bi-directional mappings for outcomes, activities, and tasks between ISO/IEC 12207:2008 and ISO/IEC/IEEE 12207:2017.

This document contains the following tables:

— Clause 6 Outcome mappings

  — Mapping from ISO/IEC/IEEE 12207:2017 to ISO/IEC 12207:2008 (Table 1)

  - Mapping from ISO/IEC 12207:2008 to ISO/IEC/IEEE 12207:2017 (Table 2)

- Clause 7 Activity and Task-level mappings
  - Mapping from ISO/IEC/IEEE 12207:2017 to ISO/IEC 12207:2008 (Table 3)
  - Mapping from ISO/IEC 12207:2008 to ISO/IEC/IEEE 12207:2017 (Table 4)

These tables can be used to determine how requirements in ISO/IEC 12207:2008 were treated or requirements in ISO/IEC/IEEE 12207:2017 have originated. Where a relationship is identified, it does not necessarily imply that the intent is identical.

This document provides a correspondence between ISO/IEC 12207:2008 and ISO/IEC/IEEE 12207:2017. It does not provide any explanatory commentary on why a change has been made, or the significance of the change.

NOTE Couplings of associative multiple outcomes or tasks are often mapped, rather than one-to-one mapping, from ISO/IEC 12207:2008 to ISO/IEC/IEEE 12207:2017.

5.2 Compound and singular requirements

A compound requirement is a requirement (i.e. 'shall') containing more than one obligation that needs to be satisfied. There are many instances in ISO/IEC 12207:2008 where the requirement is expressed as

'.. shall do this and do that and do the other'.

Although this may be a single sentence, it represents three separate obligations that will need to be satisfied.

Singular requirements are created from compound requirements by separating out these distinct requirements, when such a separated mapping helps to provide more obvious relations.

By way of example, the following sub-clause fragment is taken from ISO/IEC 12207:2008, 6.4.10.3.1.1, task 'Software Maintenance Process, Process implementation', "The maintainer shall develop, document, and execute plans and procedures for conducting the activities and tasks of the Software Maintenance Process."

Three singular requirements can be identified in this compound requirement:

- "6.4.10.3.1.1-1 The maintainer shall develop[, document, and execute] plans and procedures for conducting the activities and tasks of the Software Maintenance Process."
- "6.4.10.3.1.1-2 The maintainer shall [develop,] document[, and execute] plans and procedures for conducting the activities and tasks of the Software Maintenance Process."
- "6.4.10.3.1.1-3 The maintainer shall [develop, document, and] execute plans and procedures for conducting the activities and tasks of the Software Maintenance Process."

Square brackets (i.e. [ ]) are used to identify the particular requirement(s) to be ignored in reading the numbered compound requirements.

NOTE Additionally, 'should' and 'may' statements and descriptions in NOTEs are used to make mapping, when they are helpful for user to understand reasons for correspondences.

6 Outcome mappings

6.1 Outcome mapping from ISO/IEC/IEEE 12207:2017 to ISO/IEC 12207:2008

Table 1 correlates process outcomes required by ISO/IEC/IEEE 12207:2017 to process outcomes required in ISO/IEC 12207:2008. The mapping indicates related outcomes that may be helpful in meeting

the requirements of ISO/IEC/IEEE 12207:2017. There is no assumption that all the required outcomes of ISO/IEC 12207:2008 are required to fulfil the required outcomes of ISO/IEC/IEEE 12207:2017.

When the subclause is indicated by 'l.m.n.2 x)', it indicates the process outcome x) that is described in the subclause for outcome 'l.m.n.2' of process 'l.m.n' in ISO/IEC/IEEE 12207:2017 and ISO/IEC 12207:2008 respectively.

NOTE An only process outcome with asterisk marking, i.e. ' (*) ', has a discrepancy mapping between the one in ISO/IEC/IEEE 12207:2017, Table I.2 to provide the more obvious relation, though this is extension of ISO/IEC/IEEE 12207:2017, Table I.2.

Table 1 — Outcome mapping from ISO/IEC/IEEE 12207:2017 to ISO/IEC 12207:2008

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
6.1.1 Acquisition process			
Acquisition 2. a) A request for supply is prepared.	6.1.1.2a)	6.1.1.2a)	**Acquisition** 2. a) acquisition needs, goals, product and/or service acceptance criteria and acquisition strategies are defined;
Acquisition 2. b) One or more suppliers are selected.	6.1.1.2b)	6.1.1.2c)	**Acquisition** 2. c) one or more suppliers is selected;
Acquisition 2. c) An agreement is established between the acquirer and supplier.	6.1.1.2c)	6.1.1.2b)	**Acquisition** 2. b) an agreement is developed that clearly expresses the expectation, responsibilities and liabilities of both the acquirer and the supplier;
Acquisition 2. d) A product or service complying with the agreement is accepted.	6.1.1.2d)	6.1.1.2d)	**Acquisition** 2. d) a product and/or service is acquired that satisfies the acquirer's stated need;
	6.1.1.2d)	6.1.1.2e)	**Acquisition** 2. e) the acquisition is monitored so that specified constraints such as cost, schedule and quality are met;
	6.1.1.2d)	6.1.1.2f)	**Acquisition** 2. f) supplier deliverables are accepted;
Acquisition 2. e) Acquirer obligations defined in the agreement are satisfied.	6.1.1.2e)	6.1.1.2g)	**Acquisition** 2. g) any identified open items have a satisfactory conclusion as agreed to by the acquirer and the supplier.
6.1.2 Supply process			
Supply 2. a) An acquirer for a product or service is identified.	6.1.2.2a)	6.1.2.2a)	**Supply** 2. a) an acquirer for a product or service is identified;
Supply 2. b) A response to the acquirer's request is produced.	6.1.2.2b)	6.1.2.2b)	**Supply** 2. b) a response to an acquirer's request is produced;
Supply 2. c) An agreement is established between the acquirer and supplier.	6.1.2.2c)	6.1.2.2c)	**Supply** 2. c) an agreement is established between the acquirer and the supplier for developing, maintaining, operating, packaging, delivering, and installing the product and/or service;
Supply 2. d) A product or service is provided.	6.1.2.2d)	6.1.2.2d)	**Supply** 2. d) a product and/or service that meets the agreed requirements are developed by the supplier;
Supply 2. e) Supplier obligations defined in the agreement are satisfied.	6.1.2.2e)	6.1.2.2e)	**Supply** 2. e) the product and/or service is delivered to the acquirer in accordance with the agreed requirements;
Supply 2. f) Responsibility for the acquired product or service, as directed by the agreement, is transferred.	6.1.2.2f)	6.1.2.2f)	**Supply** 2. f) the product is installed in accordance with the agreed requirements.

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
6.2.1 Life cycle model Management process			
Life cycle model management 2. a) Organizational policies and procedures for the management and deployment of life cycle models and processes are established.	6.2.1.2a)	6.2.1.2a)	**Life Cycle Model Management** 2. a) policies and procedures for the management and deployment of life cycle models and processes are provided;
Life cycle model management 2. b) Responsibility, accountability, and authority within life cycle policies, processes, models, and procedures are defined.	6.2.1.2b)	6.2.1.2b)	**Life Cycle Model Management** 2. b) responsibility, accountability and authority for life cycle management are defined;
Life cycle model management 2. c) Life cycle models and processes for use by the organization are assessed.	6.2.1.2c)	6.2.1.2c)	**Life Cycle Model Management** 2. c) life cycle processes, models and procedures for use by the organization are defined, maintained and improved;
Life cycle model management 2. d) Prioritized process, model, and procedure improvements are implemented.	6.2.1.2d)	6.2.1.2d)	**Life Cycle Model Management** 2. d) prioritized process improvements are implemented.
6.2.2 Infrastructure Management process			
Infrastructure Management 2. a) The requirements for infrastructure are defined.	6.2.2.2a)	6.2.2.2a)	**Infrastructure Management** 2. a) the requirements for infrastructure to support processes are defined;
Infrastructure Management 2. b) The infrastructure elements are identified and specified.	6.2.2.2b)	6.2.2.2b)	**Infrastructure Management** 2. b) the infrastructure elements are identified and specified;
Infrastructure Management 2. c) Infrastructure elements are developed or acquired.	6.2.2.2c)	6.2.2.2c)	**Infrastructure Management** 2. c) the infrastructure elements are acquired;
	6.2.2.2c)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Infrastructure Management 2. d) The infrastructure is available.	6.2.2.2d)	6.2.2.2e)	**Infrastructure Management** 2. e) a stable and reliable infrastructure is maintained and improved.
6.2.3 Portfolio Management process			
Portfolio Management 2.a) Business venture opportunities, investments or necessities are qualified and prioritized.	6.2.3.2a)	6.2.3.2a)	**Project Portfolio Management** 2. a) business venture opportunities, investments or necessities are qualified, prioritized and selected;
Portfolio Management 2. b) Projects are identified.	6.2.3.2b)	6.3.1.2a)	**Project Planning** 2. a) the scope of the work for the project is defined;
Portfolio Management 2. c) Resources and budgets for each project are allocated.	6.2.3.2c)	6.2.3.2b)	**Project Portfolio Management** 2. b) resources and budgets for each project are identified and allocated;
Portfolio Management 2. d) Project management responsibilities, accountability, and authorities are defined.	6.2.3.2d)	6.2.3.2c)	**Project Portfolio Management** 2. c) project management accountability and authorities are defined;
Portfolio Management 2. e) Projects meeting agreement and stakeholder requirements are sustained.	6.2.3.2e)	6.2.3.2d)	**Project Portfolio Management** 2. d) projects meeting agreement and stakeholder requirements are sustained;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Portfolio Management 2. f) Projects not meeting agreement or satisfying stakeholder requirements are redirected or terminated.	6.2.3.2f)	6.2.3.2e)	**Project Portfolio Management** 2. e) projects not meeting agreement or stakeholder requirements are redirected or terminated;
Portfolio Management 2. g) Projects that have completed agreements and satisfied stakeholder requirements are closed.	6.2.3.2g)	None	None of outcomes is mapped.
6.2.4 Human Resource Management process			
Human Resource Management 2. a) Skills required by projects are identified.	6.2.4.2a)	6.2.4.2a)	**Human Resource Management** 2. a) skills required by projects are identified;
Human Resource Management 2. b) Necessary human resources are provided to projects.	6.2.4.2b)	6.2.4.2b)	**Human Resource Management** 2. b) necessary human resources are provided to projects;
Human Resource Management 2. c) Skills of personnel are developed, maintained or enhanced.	6.2.4.2c)	6.2.4.2c)	**Human Resource Management** 2. c) skills of personnel are developed, maintained or enhanced;
	6.2.4.2c)	6.2.4.2e)	**Human Resource Management** 2. e) individual knowledge, information and skills are collected, shared, reused and improved throughout the organization.
Human Resource Management 2. d) Conflicts in multi-project resource demands are resolved.	6.2.4.2d)	6.2.4.2d)	**Human Resource Management** 2. d) conflicts in multi-project resource demands are resolved;
6.2.5 Quality Management process			
Quality Management 2. a) Organizational quality management policies, objectives, and procedures are defined and implemented.	6.2.5.2a)	6.2.5.2a)	**Quality Management** 2. a) organization quality management policies and procedures are defined;
	6.2.5.2a)	6.2.5.2b)	**Quality Management** 2. b) organization quality objectives are defined;
	6.2.5.2a)	6.2.5.2c)	**Quality Management** 2. c) accountability and authority for quality management are defined;
Quality Management 2. b) Quality evaluation criteria and methods are established.	6.2.5.2b)	6.2.5.2a)	**Quality Management** 2. a) organization quality management policies and procedures are defined;
Quality Management 2. c) Resources and information are provided to projects to support the operation and monitoring of project quality assurance activities.	6.2.5.2c)	6.2.4.2b)	**Human Resource Management** 2. b) necessary human resources are provided to projects;
Quality Management 2. d) Quality assurance evaluation results are gathered and analyzed.	6.2.5.2d)	6.2.5.2d)	**Quality Management** 2. d) the status of customer satisfaction is monitored;
Quality Management 2. e) Quality management policies and procedures are improved based upon project and organizational results.	6.2.5.2e)	6.2.5.2e)	**Quality Management** 2. e) appropriate action is taken when quality objectives are not achieved.

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
6.2.6 Knowledge Management process			
Knowledge Management 2. a) A taxonomy for the application of knowledge assets is identified.	6.2.6.2a)	7.3.2.2a)	**Reuse Asset Management** 2. a) an asset management strategy is documented;
	6.2.6.2a)	7.3.2.2b)	**Reuse Asset Management** 2. b) an asset classification scheme is established;
	6.2.6.2a)	7.3.1.2a)	**Domain Engineering** 2. a) the representation forms for the domain models and the domain architectures are selected;
	6.2.6.2a)	7.3.1.2b)	**Domain Engineering** 2. b) the boundaries of the domain and its relationships to other domains are established;
	6.2.6.2a)	7.3.1.2c)	**Domain Engineering** 2. c) a domain model that captures the essential common and different features, capabilities, concepts, and functions in the domain is developed;
	6.2.6.2a)	7.3.1.2d)	**Domain Engineering** 2. d) a domain architecture describing the family of systems within the domain, including their commonalities and variabilities is developed;
	6.2.6.2a)	7.3.3.2a)	**Reuse Program Management** 2. a) the organization's reuse strategy, including its purpose, scope, goals and objectives, is defined;
	6.2.6.2a)	7.3.3.2b)	**Reuse Program Management** 2. b) the domains for potential reuse opportunities are identified;
Knowledge Management 2. b) The organizational knowledge, skills, and knowledge assets are developed or acquired.	6.2.6.2b)	6.2.4.2c)	**Human Resource Management** 2. c) skills of personnel are developed, maintained or enhanced;
	6.2.6.2b)	7.3.1.2e)	**Domain Engineering** 2. e) assets belonging to the domain are specified;
	6.2.6.2b)	7.3.1.2f)	**Domain Engineering** 2. f) assets belonging to the domain are acquired or developed and maintained throughout their life cycles;
	6.2.6.2b)	7.3.2.2c)	**Reuse Asset Management** 2. c) Criteria for asset acceptance, certification and retirement are defined;
	6.2.6.2b)	7.3.3.2c)	**Reuse Program Management** 2. c) the organization's systematic reuse capability is assessed;
	6.2.6.2b)	7.3.3.2d)	**Reuse Program Management** 2. d) the reuse potential of each domain is assessed;
	6.2.6.2b)	7.3.3.2e)	**Reuse Program Management** 2. e) reuse proposals are evaluated to ensure the reuse product is suitable for the proposed application;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Knowledge Management 2. c) The organizational knowledge, skills, and knowledge assets are available.	6.2.6.2c)	6.2.4.2e)	**Human Resource Management** 2. e) individual knowledge, information and skills are collected, shared, reused and improved throughout the organization.
	6.2.6.2c)	7.3.1.2g)	**Domain Engineering** 2. g) the domain models and architectures are maintained throughout their life cycles;
	6.2.6.2c)	7.3.2.2d)	**Reuse Asset Management** 2. d) an asset storage and retrieval mechanism is operated;
	6.2.6.2c)	7.3.2.2f)	**Reuse Asset Management** 2. f) changes to the assets are controlled;
	6.2.6.2c)	7.3.2.2g)	**Reuse Asset Management** 2. g) Users of assets are notified of problems detected, modifications made, new versions created and deletion of assets from the storage and retrieval mechanism.
	6.2.6.2c)	7.3.3.2f)	**Reuse Program Management** 2. f) the reuse strategy is implemented in the organization;
Knowledge Management 2. d) Knowledge management usage data is gathered and analyzed.	6.2.6.2d)	7.3.2.2e)	**Reuse Asset Management** 2. e) the use of assets is recorded;
	6.2.6.2d)	7.3.3.2g)	**Reuse Program Management** 2. g) feedback, communication, and notification mechanisms that operate between affected parties are established;
	6.2.6.2d)	7.3.3.2h)	**Reuse Program Management** 2. h) the reuse program is monitored and evaluated.
6.3.1 Project Planning process			
Project Planning 2. a) Objectives and plans are defined. (*)	6.3.1.2a)	6.3.1.2a)	**Project Planning** 2. a) the scope of the work for the project is defined;
	6.3.1.2a)	6.3.1.2b)	**Project Planning** 2. b) the feasibility of achieving the goals of the project with available resources and constraints are evaluated;
	6.3.1.2a)	6.3.1.2c)	**Project Planning** 2. c) the tasks and resources necessary to complete the work are sized and estimated;
	6.3.1.2a)	6.3.1.2e)	**Project Planning** 2. e) plans for the execution of the project are developed;
Project Planning 2. b) Roles, responsibilities, accountabilities, and authorities are defined. (*)	6.3.1.2b)	6.2.3.2c)	**Project Portfolio Management** 2. c) project management accountability and authorities are defined;
	6.3.1.2b)	6.3.1.2d)	**Project Planning** 2. d) interfaces between elements in the project, and with other project and organizational units, are identified;
	6.3.1.2b)	6.3.1.2e)	**Project Planning** 2. e) plans for the execution of the project are developed;
Project Planning 2. c) Resources and services necessary to achieve the objectives are formally requested and committed. (*)	6.3.1.2c)	6.3.1.2c)	**Project Planning** 2. c) the tasks and resources necessary to complete the work are sized and estimated;
	6.3.1.2c)	6.3.1.2e)	**Project Planning** 2. e) plans for the execution of the project are developed;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Project Planning 2. d) Plans for the execution of the project are activated.	6.3.1.2d)	6.3.1.2f)	**Project Planning** 2. f) plans for the execution of the project are activated.
	6.3.1.2d)	7.2.6.2a)	**Software Review** 2. a) management and technical reviews are held based on the needs of the project;
6.3.2 Project Assessment and Control process			
Project assessment and control 2. a) Performance measures or assessment results are available.	6.3.2.2a)	6.3.2.2a)	**Project Assessment and Control** 2. a) progress of the project is monitored and reported;
	6.3.2.2a)	7.2.6.2c)	**Software Review** 2. c) review results are made known to all affected parties;
	6.3.2.2a)	7.2.6.2e)	**Software Review** 2. e) risks and problems are identified and recorded;
Project assessment and control 2. b) Adequacy of roles, responsibilities, accountabilities, and authorities is assessed.	6.3.2.2b)	6.3.2.2a)	**Project Assessment and Control** 2. a) progress of the project is monitored and reported;
	6.3.2.2b)	6.3.2.2b)	**Project Assessment and Control** 2. b) interfaces between elements in the project, and with other project and organizational units, are monitored;
	6.3.2.2b)	7.2.6.2a)	**Software Review 2.** a) management and technical reviews are held based on the needs of the project;
	6.3.2.2b)	7.2.6.2b)	**Software Review** 2. b) the status and products of an activity of a process are evaluated through review activities;
Project assessment and control 2. c) Adequacy of resources is assessed.	6.3.2.2c)	6.3.1.2b)	**Project Planning** 2. b) the feasibility of achieving the goals of the project with available resources and constraints are evaluated;
	6.3.2.2c)	6.3.2.2a)	**Project Assessment and Control** 2. a) progress of the project is monitored and reported;
	6.3.2.2c)	7.2.6.2a)	**Software Review** 2. a) management and technical reviews are held based on the needs of the project;
	6.3.2.2c)	7.2.6.2b)	**Software Review** 2. b) the status and products of an activity of a process are evaluated through review activities;
Project assessment and control 2. d) Technical progress reviews are performed.	6.3.2.2d)	6.3.2.2a)	**Project Assessment and Control** 2. a) progress of the project is monitored and reported;
	6.3.2.2d)	7.2.6.2a)	**Software Review** 2. a) management and technical reviews are held based on the needs of the project;
Project assessment and control 2. e) Deviations in project performance from plans are investigated and analyzed.	6.3.2.2e)	6.3.2.2a)	**Project Assessment and Control** 2. a) progress of the project is monitored and reported;
	6.3.2.2e)	7.2.6.2b)	**Software Review** 2. b) the status and products of an activity of a process are evaluated through review activities;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Project assessment and control 2. f) Affected stakeholders are informed of project status.	6.3.2.2f)	6.3.2.2a)	**Project Assessment and Control** 2. a) progress of the project is monitored and reported;
	6.3.2.2f)	6.3.2.2b)	**Project Assessment and Control** 2. b) interfaces between elements in the project, and with other project and organizational units, are monitored;
	6.3.2.2f)	7.2.6.2c)	**Software Review** 2. c) review results are made known to all affected parties;
Project assessment and control 2. g) Corrective action is defined and directed, when project achievement is not meeting targets.	6.3.2.2g)	6.3.2.2c)	**Project Assessment and Control** 2. c) actions to correct deviations from the plan and to prevent recurrence of problems identified in the project are taken when project targets are not achieved;
	6.3.2.2g)	7.2.6.2d)	**Software Review** 2. d) action items resulting from reviews are tracked to closure;
Project assessment and control 2. h) Project replanning is initiated, as necessary.	6.3.2.2h)	6.3.2.2c)	**Project Assessment and Control** 2. c) actions to correct deviations from the plan and to prevent recurrence of problems identified in the project are taken when project targets are not achieved;
Project assessment and control 2. i) Project action to progress (or not) from one scheduled milestone or event to the next is authorized.	6.3.2.2i)	None	None of outcomes is mapped.
Project assessment and control 2. j) Project objectives are achieved.	6.3.2.2j)	6.3.2.2d)	**Project Assessment and Control** 2 d) project objectives are achieved and recorded.
6.3.3 Decision Management process			
Decision Management 2. a) Decisions requiring alternative analysis are identified.	6.3.3.2a)	6.3.3.2a)	**Decision Management** 2. a) a decision-making strategy is defined;
Decision Management 2. b) Alternative courses of action are identified and evaluated.	6.3.3.2b)	6.3.3.2b)	**Decision Management** 2. b) alternative courses of action are defined;
Decision Management 2. c) A preferred course of action is selected.	6.3.3.2c)	6.3.3.2c)	**Decision Management** 2. c) a preferred course of action is selected;
Decision Management 2. d) The resolution, decision rationale and assumptions are identified.	6.3.3.2d)	6.3.3.2d)	**Decision Management** 2. d) the resolution, decision rationale and assumptions are captured and reported.
6.3.4 Risk Management process			
Risk Management 2. a) Risks are identified.	6.3.4.2a)	6.3.4.2a)	**Risk Management** 2. a) the scope of risk management to be performed is determined;
	6.3.4.2a)	6.3.4.2c)	**Risk Management** 2. c) risks are identified as they develop and during the conduct of the project;
	6.3.4.2a)	7.2.6.2e)	**Software Review** 2. e) risks and problems are identified and recorded;
Risk Management 2. b) Risks are analyzed.	6.3.4.2b)	6.3.4.2d)	**Risk Management** 2. d) risks are analyzed, and the priority in which to apply resources to treatment of these risks is determined;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Risk Management 2. c) Risk treatment options are identified, prioritized, and selected.	6.3.4.2c)	6.3.4.2b)	**Risk Management** 2. b) appropriate risk management strategies are defined and implemented;
	6.3.4.2c)	6.3.4.2d)	**Risk Management** 2. d) risks are analyzed, and the priority in which to apply resources to treatment of these risks is determined;
	6.3.4.2c)	6.3.4.2e)	**Risk Management** 2. e) risk measures are defined, applied, and assessed to determine changes in the status of risk and the progress of the treatment activities;
Risk Management 2. d) Appropriate treatment is implemented.	6.3.4.2d)	6.3.4.2f)	**Risk Management** 2. f) appropriate treatment is taken to correct or avoid the impact of risk based on its priority, probability, and consequence or other defined risk threshold.
Risk Management 2. e) Risks are evaluated to assess changes in status and progress in treatment.	6.3.4.2e)	6.3.4.2e)	**Risk Management** 2. e) risk measures are defined, applied, and assessed to determine changes in the status of risk and the progress of the treatment activities;
6.3.5 Configuration Management process			
Configuration Management 2. a) Items requiring configuration management are identified and managed.	6.3.5.2a)	6.3.5.2a)	**Configuration Management** 2. a) a configuration management strategy is defined;
	6.3.5.2a)	6.3.5.2b)	**Configuration Management** 2. b) items requiring configuration management are defined;
	6.3.5.2a)	7.2.2.2a)	**Software Configuration Management** 2. a) a software configuration management strategy is developed;
	6.3.5.2a)	7.2.2.2b)	**Software Configuration Management** 2. b) items generated by the process or project are identified, defined and baselined;
Configuration Management 2. b) Configuration baselines are established.	6.3.5.2b)	6.3.5.2c)	**Configuration Management** 2. c) configuration baselines are established;
	6.3.5.2b)	7.2.2.2b)	**Software Configuration Management** 2. b) items generated by the process or project are identified, defined and baselined;
Configuration Management 2. c) Changes to items under configuration management are controlled.	6.3.5.2c)	6.3.5.2d)	**Configuration Management** 2. d) changes to items under configuration management are controlled;
	6.3.5.2c)	7.2.2.2c)	**Software Configuration Management** 2. c) modifications and releases of the items are controlled;
	6.3.5.2c)	7.2.2.2d)	**Software Configuration Management** 2. d) modifications and releases are made available to affected parties;
Configuration Management 2. d) Configuration status information is available.	6.3.5.2d)	6.3.5.2f)	**Configuration Management** 2. f) the status of items under configuration management is made available throughout the life cycle.
	6.3.5.2d)	7.2.2.2e)	**Software Configuration Management** 2. e) the status of the items and modifications are recorded and reported;
Configuration Management 2. e) Required configuration audits are completed.	6.3.5.2e)	7.2.2.2f)	**Software Configuration Management** 2. f) the completeness and consistency of the items is ensured;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Configuration Management 2. f) System releases and deliveries are controlled and approved.	6.3.5.2f)	6.3.5.2e)	**Configuration Management** 2. e) the configuration of released items is controlled;
	6.3.5.2f)	7.2.2.2c)	**Software Configuration Management** 2. c) modifications and releases of the items are controlled;
	6.3.5.2f)	7.2.2.2d)	**Software Configuration Management** 2. d) modifications and releases are made available to affected parties;
	6.3.5.2f)	7.2.2.2g)	**Software Configuration Management** 2. g) the storage, handling and delivery of the items are controlled.
6.3.6 Information Management process			
Information Management 2. a) Information to be managed is identified.	6.3.6.2a)	6.3.6.2a)	**Information Management** 2. a) information to be managed is identified;
	6.3.6.2a)	7.2.1.2a)	**Software Documentation Management** 2. a) a strategy identifying the documentation to be produced during the life cycle of the software product or service is developed;
	6.3.6.2a)	7.2.1.2c)	**Software Documentation Management** 2. c) documentation to be produced by the process or project is identified;
Information Management 2. b) Information representations are defined. (*)	6.3.6.2b)	6.3.6.2b)	**Information Management** 2. b) the forms of the information representations are defined;
	6.3.6.2b)	7.2.1.2d)	**Software Documentation Management** 2. d) the content and purpose of all documentation is specified[, reviewed and approved;]
Information Management 2. c) Information is obtained, developed, transformed, stored, validated, presented, and disposed of.	6.3.6.2c)	6.3.6.2c)	**Information Management** 2. c) information is transformed and disposed of as required;
	6.3.6.2c)	6.3.6.2e)	**Information Management** 2. e) information is current, complete and valid;
	6.3.6.2c)	6.3.7.2e)	**Measurement** 2. e) information products are used to support decisions and provide an objective basis for communication;
	6.3.6.2c)	7.2.1.2d)	**Software Documentation Management** 2. d) the content and purpose of all documentation is [specified,] reviewed and approved;
	6.3.6.2c)	7.2.1.2e)	**Software Documentation Management** 2. e) documentation is developed [and made available in accordance with identified standards];
	6.3.6.2c)	7.2.1.2f)	**Software Documentation Management** 2. f) documentation is maintained in accordance with defined criteria.
Information Management 2. d) The status of information is identified.	6.3.6.2d)	6.3.6.2d)	**Information Management** 2. d) the status of information is recorded;
	6.3.6.2d)	6.3.6.2e)	**Information Management** 2. e) information is current, complete and valid;
	6.3.6.2d)	7.2.1.2f)	**Software Documentation Management** 2. f) documentation is maintained in accordance with defined criteria.

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Information Management 2. e) Information is available to designated stakeholders.	6.3.6.2e)	6.3.6.2f)	**Information Management** 2. f) information is made available to designated parties.
	6.3.6.2e)	7.2.1.2e)	**Software Documentation Management** 2. e). documentation is [developed and] made available in accordance with identified standards;
6.3.7 Measurement process			
Measurement 2. a) Information needs are identified.	6.3.7.2a)	6.3.7.2a)	**Measurement** 2. a) the information needs of technical and management processes are identified;
Measurement 2. b) An appropriate set of measures, based on the information needs, is identified or developed.	6.3.7.2b)	6.3.7.2b)	**Measurement** 2. b) an appropriate set of measures, driven by the information needs are identified and/or developed;
	6.3.7.2b)	6.3.7.2c)	**Measurement** 2. c) measurement activities are identified and planned;
Measurement 2. c) Required data is collected, verified, and stored.	6.3.7.2c)	6.3.7.2d)	**Measurement** 2. d) the required data are collected, stored, analyzed, and the results interpreted;
Measurement 2. d) The data is analyzed and the results interpreted.	6.3.7.2d)	6.3.7.2d)	**Measurement** 2. d) the required data are collected, stored, analyzed, and the results interpreted;
Measurement 2. e) Information items provide objective information that supports decisions.	6.3.7.2e)	6.3.7.2e)	**Measurement** 2. e) information products are used to support decisions and provide an objective basis for communication;
	6.3.7.2e)	6.3.7.2g)	**Measurement** 2. g) improvements are communicated to the Measurement Process owner.
6.3.8 Quality Assurance process			
Quality Assurance 2. a) Project quality assurance procedures are defined and implemented.	6.3.8.2a)	7.2.3.2a)	**Software Quality Assurance** 2. a) a strategy for conducting software quality assurance is developed;
	6.3.8.2a)	7.2.3.2d)	**Software Quality Assurance** 2. d) adherence of software products, processes and activities to the applicable standards, procedures and requirements is verified;
	6.3.8.2a)	7.2.6.2a)	**Software Review** 2. a) management and technical reviews are held based on the needs of the project;
	6.3.8.2a)	7.2.7.2a)	**Software Audit** 2. a) an audit strategy is developed and implemented;
	6.3.8.2a)	7.2.8.2a)	**Software Problem Resolution** 2. a) a problem management strategy is developed;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Quality Assurance 2. b) Criteria and methods for quality assurance evaluations are defined.	6.3.8.2b)	7.2.3.2a)	**Software Quality Assurance** 2. a) a strategy for conducting software quality assurance is developed;
	6.3.8.2b)	7.2.6.2a)	**Software Review** 2. a) management and technical reviews are held based on the needs of the project;
	6.3.8.2b)	7.2.7.2a)	**Software Audit** 2. a) an audit strategy is developed and implemented;
	6.3.8.2b)	7.2.8.2a)	**Software Problem Resolution** 2. a) a problem management strategy is developed;
Quality Assurance 2. c) Evaluations of the project's products, services, and processes are performed, consistent with quality management policies, procedures, and requirements.	6.3.8.2c)	7.2.3.2d)	**Software Quality Assurance** 2. d) adherence of software products, processes and activities to the applicable standards, procedures and requirements is verified;
	6.3.8.2c)	7.2.6.2a)	**Software Review** 2. a) management and technical reviews are held based on the needs of the project;
	6.3.8.2c)	7.2.6.2b)	**Software Review** 2. b) the status and products of an activity of a process are evaluated through review activities;
	6.3.8.2c)	7.2.7.2b)	**Software Audit** 2. b) compliance of selected software work products and/or services or processes with requirements, plans and agreement is determined according to the audit strategy;
	6.3.8.2c)	7.2.7.2c)	**Software Audit** 2. c) audits are conducted by an appropriate independent party**;**
	6.3.8.2c)	6.4.6.2d)	**System Qualification Testing** 2. d) readiness of the system for delivery is assured.
	6.3.8.2c)	6.3.7.2f)	**Measurement** 6. f) the Measurement Process and measures are evaluated;
Quality Assurance 2. d) Results of evaluations are provided to relevant stakeholders.	6.3.8.2d)	7.2.3.2b)	**Software Quality Assurance** 2. b) evidence of software quality assurance is produced and maintained;
	6.3.8.2d)	7.2.6.2c)	**Software Review** 2. c) review results are made known to all affected parties;
	6.3.8.2d)	7.2.7.2d)	**Software Audit** 2. d) problems detected during an audit are identified and communicated to those responsible for corrective action, and resolution;
	6.3.8.2d)	7.2.8.2f)	**Software Problem Resolution** 2. f) the status of all problems reported is known;
Quality Assurance 2. e) Incidents are resolved.	6.3.8.2e)	None	None of outcomes is mapped.

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Quality Assurance 2. f) Prioritized problems are treated. (*)	6.3.8.2f)	7.2.6.2d)	**Software Review** 2. d) action items resulting from reviews are tracked to closure;
	6.3.8.2f)	7.2.8.2b)	**Software Problem Resolution** 2. b) problems are recorded, identified and classified;
	6.3.8.2f)	7.2.8.2c)	**Software Problem Resolution** 2. c) problems are analyzed and assessed to identify acceptable solution(s);
	6.3.8.2f)	7.2.8.2d)	**Software Problem Resolution** 2. d) problem resolution is implemented;
	6.3.8.2f)	7.2.8.2e)	**Software Problem Resolution** 2. e) problems are tracked to closure;
6.4.1 Business or Mission Analysis process			
Business or Mission Analysis 2. a) The problem or opportunity space is defined.	6.4.1.2a)	None	None of outcomes is mapped.
Business or Mission Analysis 2. b) The solution space is characterized.	6.4.1.2b)	None	None of outcomes is mapped.
Business or Mission Analysis 2. c) Preliminary operational concepts and other concepts in the life cycle stages are defined.	6.4.1.2c)	6.4.1.2a)	**Stakeholder Requirements Definition** 2. a) the required characteristics and context of use of services are specified;
Business or Mission Analysis 2. d) Candidate alternative solution classes are identified and analyzed.	6.4.1.2d)	None	None of outcomes is mapped.
Business or Mission Analysis 2. e) The preferred candidate alternative solution class(es) are selected.	6.4.1.2e)	None	None of outcomes is mapped.
Business or Mission Analysis 2. f) Any enabling systems or services needed for business or mission analysis are available. (*)	6.4.1.2f)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Business or Mission Analysis 2. g) Traceability of business or mission problems and opportunities and the preferred alternative solution classes is established.	6.4.1.2g)	None	None of outcomes is mapped.
6.4.2 Stakeholder Needs and Requirements Definition process			
Stakeholder Needs and Requirements Definition 2. a) Stakeholders of the system are identified.	6.4.2.2a)	None	None of outcomes is mapped.
Stakeholder Needs and Requirements Definition 2. b) Required characteristics and context of use of capabilities and concepts in the life cycle stages, including operational concepts, are defined.	6.4.2.2b)	6.4.1.2a)	**Stakeholder Requirements Definition** 2. a) the required characteristics and context of use of services are specified;
Stakeholder Needs and Requirements Definition 2. c) Constraints on a system are identified.	6.4.2.2c)	6.4.1.2b)	**Stakeholder Requirements Definition** 2. b) the constraints on a system solution are defined;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Stakeholder Needs and Requirements Definition 2 d) Stakeholder needs are defined.	6.4.2.2d)	6.4.1.2a)	**Stakeholder Requirements Definition** 2. a) the required characteristics and context of use of services are specified;
Stakeholder Needs and Requirements Definition 2. e) Stakeholder needs are prioritized and transformed into clearly defined stakeholder requirements.	6.4.2.2e)	6.4.1.2d)	**Stakeholder Requirements Definition** 2. d) the basis for defining the system requirements is described;
	6.4.2.2e)	6.4.1.2e)	**Stakeholder Requirements Definition** 2. e) the basis for validating the conformance of the services is defined;
Stakeholder Needs and Requirements Definition 2. f) Critical performance measures are defined.	6.4.2.2f)	None	None of outcomes is mapped.
Stakeholder Needs and Requirements Definition 2. g) Stakeholder agreement that their needs and expectations are reflected adequately in the requirements is achieved.	6.4.2.2g)	6.4.1.2f)	**Stakeholder Requirements Definition** 2. f) a basis for negotiating and agreeing to supply a service or product is provided.
Stakeholder Needs and Requirements Definition 2. h) Any enabling systems or services needed for stakeholder needs and requirements are available. (*)	6.4.2.2h)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Stakeholder Needs and Requirements Definition 2. i) Traceability of stakeholder requirements to stakeholders and their needs is established.	6.4.2.2i)	6.4.1.2c)	**Stakeholder Requirements Definition** 2. c) traceability of stakeholder requirements to stakeholders and their needs is achieved;
6.4.3 System/Software requirements definition process			
System/Software requirements definition 2. a) The system or element description, including interfaces, functions and boundaries, for a system solution is defined.	6.4.3.2a)	6.4.2.2a)	**System Requirements Analysis** 2. a) a defined set of system functional and non-functional requirements describing the problem to be solved are established;
	6.4.3.2a)	7.1.2.2a)	**Software Requirements Analysis** 2. a) the requirements allocated to the software elements of the system and their interfaces are defined;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
System/Software requirements definition 2. b) System/software requirements (functional, performance, process, non-functional, and interface) and design constraints are defined.	6.4.3.2b)	6.4.2.2a)	**System Requirements Analysis** 2. a) a defined set of system functional and non-functional requirements describing the problem to be solved are established;
	6.4.3.2b)	6.4.2.2e)	**System Requirements Analysis** 2.e) the requirements are prioritized, approved and updated as needed;
	6.4.3.2b)	6.4.2.2h)	**System Requirements Analysis** 2.h) the system requirements are communicated to all affected parties and baselined.
	6.4.3.2b)	7.1.2.2a)	**Software Requirements Analysis** 2. a) the requirements allocated to the software elements of the system and their interfaces are defined;
	6.4.3.2b)	7.1.2.2e)	**Software Requirements Analysis** 2. e) prioritization for implementing the software requirements is defined;
	6.4.3.2b)	7.1.2.2f)	**Software Requirements Analysis** 2. f) the software requirements are approved and updated as needed;
	6.4.3.2b)	7.1.2.2h)	**Software Requirements Analysis** 2. h) the software requirements are baselined and communicated to all affected parties;
System/Software requirements definition 2. c) Critical performance measures are defined.	6.4.3.2c)	6.4.2.2d)	**System Requirements Analysis** 2. d) the impact of the system requirements on the operating environment are understood;
	6.4.3.2c)	7.1.2.2c)	**Software Requirements Analysis** 2. c) the impact of software requirements on the operating environment is understood;
System/Software requirements definition 2. d) The system/software requirements are analyzed.	6.4.3.2d)	6.4.2.2c)	**System Requirements Analysis** 2. c) system requirements are analyzed for correctness and testability;
	6.4.3.2d)	6.4.2.2d)	**System Requirements Analysis** 2. d) the impact of the system requirements on the operating environment are understood;
	6.4.3.2d)	6.4.2.2g)	**System Requirements Analysis** 2. g) changes to the baseline are evaluated for cost, schedule and technical impact;
	6.4.3.2d)	7.1.2.2b)	**Software Requirements Analysis** 2. b) software requirements are analyzed for correctness and testability;
	6.4.3.2d)	7.1.2.2c)	**Software Requirements Analysis** 2. c) the impact of software requirements on the operating environment is understood;
	6.4.3.2d)	7.1.2.2g)	**Software Requirements Analysis** 2. g) changes to the software requirements are evaluated for cost, schedule and technical impact;
System/Software requirements definition 2. e) Any enabling systems or services needed for system/software requirements definition are available. (*)	6.4.3.2e)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
System/Software requirements definition 2. f) Traceability of system/software requirements to stakeholder requirements is developed.	6.4.3.2f)	6.4.2.2f)	**System Requirements Analysis** 2. f) consistency and traceability are established between the system requirements and the customer's requirements baseline;
	6.4.3.2f)	7.1.2.2d)	**Software Requirements Analysis** 2. d) consistency and traceability are established between the software requirements and system requirements;
6.4.4 Architecture Definition process			
Architecture Definition 2. a) Identified stakeholder concerns are addressed by the architecture.	6.4.4.2a)	6.4.3.2a)	**System Architecture Design** 2. a) a system architecture design is defined that identifies the elements of the system and meets the defined requirements;
	6.4.4.2a)	6.4.3.2c)	**System Architecture Design** 2. c) the requirements are allocated to the elements of the system;
	6.4.4.2a)	7.1.3.2a)	**Software Architecture Design** 2. a) a software architectural design is developed and baselined that describes the software items that will implement the software requirements;
	6.4.4.2a)	7.1.3.2c)	**Software Architecture Design** 2. c) consistency and traceability are established between software requirements and software design.
Architecture Definition 2. b) Architecture viewpoints are developed.	6.4.4.2b)	6.4.3.2a)	**System Architecture Design** 2. a) a system architecture design is defined that identifies the elements of the system and meets the defined requirements;
	6.4.4.2b)	7.1.3.2a)	**Software Architecture Design** 2. a) a software architectural design is developed and baselined that describes the software items that will implement the software requirements;
Architecture Definition 2. c) Context, boundaries, and external interfaces of the system are defined.	6.4.4.2c)	7.1.3.2b)	**Software Architecture Design** 2. b) internal and external interfaces of each software item are defined;
	6.4.4.2c)	7.3.1.2b)	**Domain Engineering** 2. b) the boundaries of the domain and its relationships to other domains are established;
Architecture Definition 2. d) Architecture views and models of the system are developed.	6.4.4.2d)	6.4.3.2h)	**System Architecture Design** 2. h) the system requirements, the system architecture design, and their relationships are baselined and communicated to all affected parties;
	6.4.4.2d)	7.1.3.2a)	**Software Architecture Design** 2. a) a software architectural design is developed and baselined that describes the software items that will implement the software requirements;
	6.4.4.2d)	7.3.1.2a)	**Domain Engineering** 2. a) the representation forms for the domain models and the domain architectures are selected;
	6.4.4.2d)	7.3.1.2c)	**Domain Engineering** 2. c) a domain model that captures the essential common and different features, capabilities, concepts, and functions in the domain is developed;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Architecture Definition 2. e) Concepts, properties, characteristics, behaviors, functions, or constraints that are significant to architecture decisions of the system are allocated to architectural entities.	6.4.4.2e)	7.1.3.2a)	**Software Architecture Design** 2. a) a software architectural design is developed and baselined that describes the software items that will implement the software requirements;
	6.4.4.2e)	6.4.3.2a)	**System Architecture Design** 2. a) a system architecture design is defined that identifies the elements of the system and meets the defined requirements;
	6.4.4.2e)	6.4.3.2b)	**System Architecture Design** 2. b) the system's functional and non-functional requirements are addressed;
	6.4.4.2e)	6.4.3.2i)	**System Architecture Design** 2. i) human factors and ergonomic knowledge and techniques are incorporated in system design;
Architecture Definition 2. f) System elements and their interfaces are identified.	6.4.4.2f)	6.4.3.2a)	**System Architecture Design** 2. a) a system architecture design is defined that identifies the elements of the system and meets the defined requirements;
	6.4.4.2f)	6.4.3.2d)	**System Architecture Design** 2. d) internal and external interfaces of each system element are defined;
	6.4.4.2f)	7.1.3.2a)	**Software Architecture Design** 2. a) a software architectural design is developed and baselined that describes the software items that will implement the software requirements;
	6.4.4.2f)	7.1.3.2b)	**Software Architecture Design** 2. b) internal and external interfaces of each software item are defined;
Architecture Definition 2. g) Architecture candidates are assessed.	6.4.4.2g)	6.4.3.2a)	**System Architecture Design** 2. a) a system architecture design is defined that identifies the elements of the system and meets the defined requirements;
	6.4.4.2g)	7.1.3.2a)	**Software Architecture Design** 2. a) a software architectural design is developed and baselined that describes the software items that will implement the software requirements;
Architecture Definition 2. h) An architectural basis for processes throughout the life cycle is achieved.	6.4.4.2h)	6.4.3.2a)	**System Architecture Design** 2. a) a system architecture design is defined that identifies the elements of the system and meets the defined requirements;
	6.4.4.2h)	7.1.3.2a)	**Software Architecture Design** 2. a) a software architectural design is developed and baselined that describes the software items that will implement the software requirements;
	6.4.4.2h)	7.3.1.2d)	**Domain Engineering** 2. d) a domain architecture describing the family of systems within the domain, including their commonalities and variabilities, is developed.

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Architecture Definition 2. i) Alignment of the architecture with requirements and design characteristics is achieved.	6.4.4.2i)	6.4.3.2c)	**System Architecture Design** 2. c) the requirements are allocated to the elements of the system;
	6.4.4.2i)	6.4.3.2e)	**System Architecture Design** 2. e) verification between the system requirements and the system architecture is performed;
	6.4.4.2i)	7.1.3.2a)	**Software Architecture Design** 2. a) a software architectural design is developed and baselined that describes the software items that will implement the software requirements;
	6.4.4.2i)	7.1.3.2c)	**Software Architecture Design** 2. c) consistency and traceability are established between software requirements and software design.
Architecture Definition 2. j) Any enabling systems or services needed for architecture definition are available. (*)	6.4.4.2j)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Architecture Definition 2. k) Traceability of architecture elements to stakeholder and system/software requirements is developed.	6.4.4.2k)	6.4.3.2f)	**System Architecture Design** 2. f) the requirements allocated to the system elements and their interfaces are traceable to the customer's requirements baseline;
	6.4.4.2k)	6.4.3.2g)	**System Architecture Design** 2. g) consistency and traceability between the system requirements and system architecture design is maintained;
	6.4.4.2k)	7.1.3.2c)	**Software Architecture Design** 2. c) consistency and traceability are established between software requirements and software design.
6.4.5 Design Definition process			
Design Definition 2. a) Design characteristics of each system element are defined.	6.4.5.2a)	7.1.4.2a)	**Software Detailed Design** 2. a) a detailed design of each software component, describing the software units to be built, is developed;
Design Definition 2. b) System/software requirements are allocated to system elements.	6.4.5.2b)	7.1.4.2a)	**Software Detailed Design** 2. a) a detailed design of each software component, describing the software units to be built, is developed;
	6.4.5.2b)	7.1.4.2c)	**Software Detailed Design** 2. c) consistency and traceability are established between the detailed design and the requirements and architectural design.
Design Definition 2. c) Design enablers necessary for design definition are selected or defined.	6.4.5.2c)	7.1.4.2a)	**Software Detailed Design** 2. a) a detailed design of each software component, describing the software units to be built, is developed;
Design Definition 2. d) Interfaces between system elements composing the system are defined or refined.	6.4.5.2d)	7.1.4.2b)	**Software Detailed Design** 2. b) external interfaces of each software unit are defined;
Design Definition 2. e) Design alternatives for system elements are assessed.	6.4.5.2e)	7.1.4.2a)	**Software Detailed Design** 2. a) a detailed design of each software component, describing the software units to be built, is developed;
Design Definition 2. f) Design artifacts are developed.	6.4.5.2f)	7.1.4.2a)	**Software Detailed Design** 2. a) a detailed design of each software component, describing the software units to be built, is developed;
Design Definition 2. g) Any enabling systems or services needed for design definition are available. (*)	6.4.5.2g)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Design Definition 2. h) Traceability of the design characteristics to the architectural entities of the system architecture is established.	6.4.5.2h)	7.1.4.2c)	**Software Detailed Design** 2. c) consistency and traceability are established between the detailed design and the requirements and architectural design.
6.4.6 System Analysis process			
System Analysis 2. a) System analyses needed are identified.	6.4.6.2a)	None	None of outcomes is mapped.
System Analysis 2. b) System analysis assumptions and results are validated.	6.4.6.2b)	None	None of outcomes is mapped.
System Analysis 2. c) System analysis results are provided for decisions.	6.4.6.2c)	None	None of outcomes is mapped.
System Analysis 2. d) Any enabling systems or services needed for system analysis are available. (*)	6.4.6.2d)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
System Analysis 2. e) Traceability of the system analysis results is established.	6.4.6.2e)	None	None of outcomes is mapped.
6.4.7 Implementation process			
Implementation 2. a) Implementation constraints that influence the requirements, architecture, or design are identified.	6.4.7.2a)	7.1.1.2a)	**Software Implementation** 2. a) an implementation strategy is defined;
	6.4.7.2a)	7.1.1.2b)	**Software Implementation** 2. b) implementation technology constraints on the design are identified;
	6.4.7.2a)	7.1.5.2a)	**Software Construction** 2. a) verification criteria are defined for all software units against their requirements;
	6.4.7.2a)	7.1.5.2d)	**Software Construction** 2. d) verification of the software units against the requirements and the design is accomplished;
Implementation 2. b) A system element is realized.	6.4.7.2b)	7.1.1.2c)	**Software Implementation** 2. c) a software item is realized;
	6.4.7.2b)	7.1.5.2b)	**Software Construction** 2. b) software units defined by the design are produced;
	6.4.7.2b)	7.1.5.2d)	**Software Construction** 2. d) verification of the software units against the requirements and the design is accomplished;
Implementation 2. c) A system element is packaged or stored.	6.4.7.2c)	7.1.1.2d)	**Software Implementation** 2. d) a software item is packaged and stored in accordance with an agreement for its supply.
Implementation 2. d) Any enabling systems or services needed for implementation are available. (*)	6.4.7.2d)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Implementation 2. e) Traceability is established.	6.4.7.2e)	7.1.5.2c)	**Software Construction** 2. c) consistency and traceability are established between software units and requirements and design;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
6.4.8 Integration process			
Integration 2. a) Integration constraints that influence system requirements, architecture, or design, including interfaces, are identified.	6.4.8.2a)	6.4.5.2a)	**System Integration** 2. a) a strategy is developed to integrate the system according to the priorities of the system requirements;
	6.4.8.2a)	7.1.6.2a)	**Software Integration** 2. a) an integration strategy is developed for software units consistent with the software design and the prioritized software requirements;
Integration 2. b) Approach and checkpoints for the correct operation of the assembled interfaces and system functions are defined.	6.4.8.2b)	6.4.5.2a)	**System Integration** 2. a) a strategy is developed to integrate the system according to the priorities of the system requirements;
	6.4.8.2b)	6.4.5.2b)	**System Integration** 2. b) criteria are developed to verify compliance with the system requirements allocated to the system elements, including the interfaces between system elements;
	6.4.8.2b)	6.4.5.2c)	**System Integration** 2. c) the system integration is verified using the defined criteria;
	6.4.8.2b)	6.4.5.2d)	**System Integration** 2. d) a regression strategy is developed and applied for re-testing the system when changes are made;
	6.4.8.2b)	7.1.6.2a)	**Software Integration** 2. a) an integration strategy is developed for software units consistent with the software design and the prioritized software requirements;
	6.4.8.2b)	7.1.6.2c)	**Software Integration** 2. c) software items are verified using the defined criteria;
Integration 2. c) Any enabling systems or services needed for integration are available.	6.4.8.2c)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Integration 2. d) A system composed of implemented system elements is integrated.	6.4.8.2d)	6.4.5.2f)	**System Integration** 2. f) an integrated system is constructed that demonstrates compliance with the system design;
	6.4.8.2d)	6.4.5.2g)	**System Integration** 2. g) an integrated system is constructed that demonstrates that a complete set of usable deliverable system elements exists.
	6.4.8.2d)	7.1.6.2d)	**Software Integration** 2. d) software items defined by the integration strategy are produced;
Integration 2. e) The interfaces between the implemented system elements that compose the system are checked.	6.4.8.2e)	6.4.5.2b)	**System Integration** 2. b) criteria are developed to verify compliance with the system requirements allocated to the system elements, including the interfaces between system elements;
	6.4.8.2e)	6.4.5.2c)	**System Integration** 2. c) the system integration is verified using the defined criteria;
	6.4.8.2e)	7.1.6.2c)	**Software Integration** 2. c) software items are verified using the defined criteria;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Integration 2. f) The interfaces between the system and the external environment are checked.	6.4.8.2f)	6.4.5.2c)	**System Integration** 2. c) the system integration is verified using the defined criteria;
	6.4.8.2f)	7.1.6.2c)	**Software Integration** 2. c) software items are verified using the defined criteria;
Integration 2. g) Integration results and anomalies are identified.	6.4.8.2g)	6.4.5.2c)	**System Integration** 2. c) the system integration is verified using the defined criteria;
	6.4.8.2g)	7.1.6.2c)	**Software Integration** 2. c) software items are verified using the defined criteria;
	6.4.8.2g)	7.1.6.2e)	**Software Integration** 2. e) results of integration testing are recorded;
Integration 2. h) Traceability of the integrated system elements is established.	6.4.8.2h)	6.4.5.2e)	**System Integration** 2. e) consistency and traceability are established between the system design and the integrated system elements;
	6.4.8.2h)	7.1.6.2f)	**Software Integration** 2. f) consistency and traceability are established between software design and software items;
6.4.9 Verification process			
Verification 2. a) Constraints of verification that influence the requirements, architecture, or design are identified.	6.4.9.2a)	6.4.6.2a)	**System Qualification Testing** 2. a) criteria for evaluating compliance with system requirements are developed;
	6.4.9.2a)	7.2.4.2a)	**Software Verification** 2. a) a software verification strategy is developed and implemented;
	6.4.9.2a)	7.2.4.2b)	**Software Verification** 2. b) criteria for verification of all required software work products are identified;
	6.4.9.2a)	7.1.7.2a)	**Software Qualification Testing** 2. a) criteria for the integrated software are developed that demonstrate compliance with the software requirements;
	6.4.9.2a)	7.1.7.2d)	**Software Qualification Testing** 2. d) a regression strategy is developed and applied for re-testing the integrated software when a change in software items is made;
	6.4.9.2a)	7.1.6.2b)	**Software Integration** 2. b) verification criteria for software items are developed that ensure compliance with the software requirements allocated to the items;
	6.4.9.2a)	7.1.6.2g)	**Software Integration** 2. g) a regression strategy is developed and applied for re-verifying software items when a change in software units (including associated requirements, design and code) occur;
	6.4.9.2a)	7.1.5.2a)	**Software Construction** 2. a) verification criteria are defined for all software units against their requirements;
Verification 2. b) Any enabling systems or services needed for verification are available. (*)	6.4.9.2b)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Verification 2. c) The system or system element is verified.	6.4.9.2c)	6.4.3.2e)	**System Architecture Design** 2. e) verification between the system requirements and the system architecture is performed;
	6.4.9.2c)	6.4.5.2c)	**System Integration** 2. c) the system integration is verified using the defined criteria;
	6.4.9.2c)	6.4.5.2d)	**System Integration** 2. d) a regression strategy is developed and applied for re-testing the system when changes are made;
	6.4.9.2c)	6.4.6.2b)	**System Qualification Testing** 2. b) the integrated system is tested using the defined criteria;
	6.4.9.2c)	7.1.6.2c)	**Software Integration** 2. c) software items are verified using the defined criteria;
	6.4.9.2c)	7.2.4.2c)	**Software Verification** 2. c) required verification activities are performed;
	6.4.9.2c)	7.2.3.2d)	**Software Quality Assurance** 2. d) adherence of software products, processes and activities to the applicable standards, procedures and requirements is verified.
	6.4.9.2c)	7.1.7.2b)	**Software Qualification Testing** 2. b) integrated software is verified using the defined criteria;
	6.4.9.2c)	7.1.7.2d)	**Software Qualification Testing** 2. d) a regression strategy is developed and applied for re-testing the integrated software when a change in software items is made;
Verification 2. d) Data providing information for corrective actions is reported.	6.4.9.2d)	7.2.4.2d)	**Software Verification** 2. d) defects are identified and recorded;
Verification 2. e) Objective evidence that the realized system fulfills the requirements, architecture and design is provided.	6.4.9.2e)	6.4.6.2c)	**System Qualification Testing** 2. c) test results are recorded;
	6.4.9.2e)	7.1.7.2c)	**Software Qualification Testing** 2. c) test results are recorded;
	6.4.9.2e)	7.2.4.2e)	**Software Verification** 2. e) Results of the verification activities are made available to the customer and other involved parties.
Verification 2. f) Verification results and anomalies are identified.	6.4.9.2f)	6.4.6.2c)	**System Qualification Testing** 2. c) test results are recorded;
	6.4.9.2f)	7.1.7.2c)	**Software Qualification Testing** 2. c) test results are recorded;
	6.4.9.2f)	7.2.4.2d)	**Software Verification** 2. d) defects are identified and recorded;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Verification 2. g) Traceability of the verified system elements is established.	6.4.9.2g)	7.1.7.2a)	**Software Qualification Testing** 2. a) criteria for the integrated software are developed that demonstrate compliance with the software requirements;
	6.4.9.2g)	7.2.4.2b)	**Software Verification** 2. b) criteria for verification of all required software work products are identified;
	6.4.9.2g)	7.2.4.2c)	**Software Verification** 2. c) required verification activities are performed;
6.4.10 Transition process			
Transition 2. a) Transition constraints that influence system/software requirements, architecture, or design are identified.	6.4.10.2a)	6.4.7.2a)	**Software Installation** 2. a) a software installation strategy is developed;
	6.4.10.2a)	6.4.7.2b)	**Software Installation** 2. b) criteria for software installation are developed that demonstrate compliance with the software installation requirements;
Transition 2. b) Any enabling systems or services needed for transition are available. (*)	6.4.10.2b)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Transition 2. c) The site is prepared.	6.4.10.2c)	6.4.7.2d)	**Software Installation** 2. d) readiness of the software product for use in its intended environment is assured;
Transition 2. d) The system, as installed in its operational location, is capable of delivering its specified functions. (*)	6.4.10.2d)	6.4.7.2d)	**Software Installation** 2. d) readiness of the software product for use in its intended environment is assured.
	6.4.10.2d)	6.4.8.2a)	**Software Acceptance Support** 2. a) the product is completed and delivered to the acquirer;
	6.4.10.2d)	6.4.8.2b)	**Software Acceptance Support** 2. b) acquirer acceptance tests and reviews are supported;
Transition 2. e) Operators, users and other stakeholders necessary to the system utilization and support are trained.	6.4.10.2e)	6.4.7.2d)	**Software Installation** 2. d) readiness of the software product for use in its intended environment is assured;
	6.4.10.2e)	6.4.8.2c)	**Software Acceptance Support** 2. c) the product is put into operation in the customers' environment;
	6.4.10.2e)	6.2.4.2c)	**Human Resource Management** 2. c) Skills of personnel are developed, maintained or enhanced
Transition 2. f) Transition results and anomalies are identified.	6.4.10.2f)	6.4.7.2d)	**Software Installation** 2. d) readiness of the software product for use in its intended environment is assured;
	6.4.10.2f)	6.4.8.2d)	**Software Acceptance Support** 2. d) Problems detected during acceptance are identified and communicated to those responsible for resolution.

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Transition 2. g) The installed system is activated and ready for operation.	6.4.10.2g)	6.4.7.2c)	**Software Installation** 2. c) the software product is installed in the target environment;
	6.4.10.2g)	6.4.7.2d)	**Software Installation** 2. d) readiness of the software product for use in its intended environment is assured;
	6.4.10.2g)	6.4.8.2c)	**Software Acceptance Support** 2. c) the product is put into operation in the customers' environment;
Transition 2. h) Traceability of the transitioned elements is established.	6.4.10.2h)	6.4.7.2b)	**Software Installation** 2. b) criteria for software installation are developed that demonstrate compliance with the software installation requirements;
6.4.11 Validation process			
Validation 2. a) Validation criteria for stakeholder requirements are defined.	6.4.11.2a)	7.2.5.2a)	**Software Validation** 2. a) a validation strategy is developed and implemented;
	6.4.11.2a)	7.2.5.2b)	**Software Validation** 2. b) criteria for validation of all required work products are identified;
Validation 2. b) The availability of services required by stakeholders is confirmed. (*)	6.4.11.2b)	6.4.8.2b)	**Software Acceptance Support** 2. b) acquirer acceptance tests and reviews are supported;
	6.4.11.2b)	6.4.8.2c)	**Software Acceptance Support** 2. c) the product is put into operation in the customers' environment;
	6.4.11.2b)	7.2.5.2c)	**Software Validation** 2. c) Required validation activities are performed;
Validation 2. c) Constraints of validation that influence the requirements, architecture, or design are identified.	6.4.11.2c)	7.2.5.2a)	**Software Validation** 2. a) a validation strategy is developed and implemented;
	6.4.11.2c)	7.2.5.2b)	**Software Validation** 2. b) criteria for validation of all required work products are identified;
Validation 2. d) The system or system element is validated.	6.4.11.2d)	6.4.8.2b)	**Software Acceptance Support** 2. b) acquirer acceptance tests and reviews are supported;
	6.4.11.2d)	6.4.9.2c)	**Software Operation** 2. c) the software is tested and determined to operate in its intended environment;
	6.4.11.2d)	7.2.5.2c)	**Software Validation** 2. c) required validation activities are performed;
Validation 2. e) Any enabling systems or services needed for validation are available. (*)	6.4.11.2e)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Validation 2. f) Validation results and anomalies are identified.	6.4.11.2f)	6.4.8.2d)	**Software Acceptance Support** 2. d) Problems detected during acceptance are identified and communicated to those responsible for resolution;
	6.4.11.2f)	7.2.5.2d)	**Software Validation** 2. d) problems are identified and recorded;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Validation 2. g) Objective evidence that the realized system or system element satisfies stakeholder needs is provided.	6.4.11.2g)	7.2.5.2e)	**Software Validation** 2. e) evidence is provided that the software work products as developed are suitable for their intended use;
	6.4.11.2g)	7.2.5.2f)	**Software Validation** 2. f) results of the validation activities are made available to the customer and other involved parties;
Validation 2. h) Traceability of the validated system elements is established.	6.4.11.2h)	7.2.5.2b)	**Software Validation** 2. b) criteria for validation of all required work products are identified;
6.4.12 Operation process			
Operation 2. a) Operation constraints that influence system/software requirements, architecture, or design are identified. (*)	6.4.12.2a)	6.4.9.2a)	**Software Operation** 2. a) an operation strategy is defined;
	6.4.12.2a)	6.4.9.2b)	**Software Operation** 2. b) conditions for correct operation of the software in its intended environment are identified and evaluated;
Operation 2. b) Any enabling systems, services, and material needed for operation are available. (*)	6.4.12.2b)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Operation 2. c) Trained, qualified operators are available. (*)	6.4.12.2c)	6.2.4.2c)	**Human Resource Management** 2. c) Skills of personnel are developed, maintained or enhanced;
Operation 2. d) System product services that meet stakeholder requirements are delivered.	6.4.12.2d)	6.4.9.2d)	**Software Operation** 2. d) the software is operated in its intended environment;
	6.4.12.2d)	6.4.8.2c)	**Software Acceptance Support** 2. c) the product is put into operation in the customers' environment;
Operation 2. e) System product performance during operation is monitored.	6.4.12.2e)	6.4.9.2b)	**Software Operation** 2. b) conditions for correct operation of the software in its intended environment are identified and evaluated;
Operation 2. f) Support to the customer is provided.	6.4.12.2f)	6.4.9.2e)	**Software Operation** 2. e) assistance and consultation is provided to the customers of the software product in accordance with the agreement.
6.4.13 Maintenance process			
Maintenance 2. a) Maintenance constraints that influence system requirements, architecture, or design are identified.	6.4.13.2a)	6.4.10.2a)	**Software Maintenance** 2. a) a maintenance strategy is developed to manage modification and migration of products according to the release strategy;
	6.4.13.2a)	6.4.10.2b)	**Software Maintenance** 2. b) the impact of changes to the existing system on organization, operations or interfaces are identified;
Maintenance 2. b) Any enabling systems or services needed for maintenance are available.(*)	6.4.13.2b)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;

Table 1 *(continued)*

Outcomes (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Outcomes (ISO/IEC 12207:2008)
Maintenance 2 c) Replacement, repaired, or revised system elements are made available.	6.4.13.2c)	6.4.10.2c)	**Software Maintenance** 2. c) affected system and software documentation is updated as needed;
	6.4.13.2c)	6.4.10.2d)	**Software Maintenance** 2. d) modified products are developed with associated tests that demonstrate that requirements are not compromised;
	6.4.13.2c)	6.4.10.2e)	**Software Maintenance** 2. e) product upgrades are migrated to the customer's environment;
	6.4.13.2c)	6.4.10.2f)	**Software Maintenance** 6. f) the system software modification is communicated to all affected parties.
	6.4.13.2c)	7.3.1.2f)	**Domain Engineering** 2. f) assets belonging to the domain are acquired or developed and maintained throughout their life cycles.
Maintenance 2. d) The need for changes to address corrective, perfective, or adaptive maintenance is reported.	6.4.13.2d)	6.4.10.2b)	**Software Maintenance** 2. b) the impact of changes to the existing system on organization, operations or interfaces are identified;
Maintenance 2. e) Failure and lifetime data, including associated costs, is determined.	6.4.13.2e)	6.4.10.2b)	**Software Maintenance** 2. b) the impact of changes to the existing system on organization, operations or interfaces are identified;
6.4.14 Disposal process			
Disposal 2. a) Disposal constraints are provided as inputs to requirements, architecture, design, and implementation.	6.4.14.2a)	6.4.11.2a)	**Software Disposal** 2. a) a software disposal strategy is defined;
	6.4.14.2a)	6.4.11.2b)	**Software Disposal** 2. b) disposal constraints are provided as inputs to requirements;
Disposal 2. b) Any enabling systems or services needed for disposal are available.(*)	6.4.14.2b)	6.2.2.2d)	**Infrastructure Management** 2. d) the infrastructure elements are implemented;
Disposal 2. c) The system elements or waste products are destroyed, stored, reclaimed or recycled in accordance with requirements, e.g. , safety and security requirements.	6.4.14.2c)	6.4.11.2c)	**Software Disposal** 2. c) the system's software elements are destroyed or stored;
Disposal 2. d) The environment is returned to its original or an agreed state.	6.4.14.2d)	6.4.11.2d)	**Software Disposal** 2. d) the environment is left in an agreed-upon state;
Disposal 2. e) Records of disposal actions and analysis are available.	6.4.14.2e)	6.4.11.2e)	**Software Disposal** 2. e) records allowing knowledge retention of disposal actions and any analysis of long-term impacts are available.

6.2 Outcome mapping from ISO/IEC 12207:2008 to ISO/IEC/IEEE 12207:2017

Table 2 correlates process outcomes required by ISO/IEC 12207:2008 to process outcomes required in ISO/IEC/IEEE 12207:2017. The mapping indicates related outcomes that may be helpful in meeting the required outcomes of ISO/IEC/IEEE 12207:2017. There is no assumption that all the required outcomes of ISO/IEC 12207:2008 are required to fulfil the required outcomes of ISO/IEC/IEEE 12207:2017. Also, there is no assumption that all the required outcomes of ISO/IEC/IEEE 12207:2017 can be met by achieving the required outcomes of ISO/IEC 12207:2008.

When the subclause is indicated by 'l.m.n.2 x)', it indicates the process outcome x) that is described in the subclause for outcome 'l.m.n.2' of process 'l.m.n' in ISO/IEC/IEEE 12207:2017 and ISO/IEC 12207:2008 respectively.

Table 2 — Outcome mapping from ISO/IEC 12207:2008 to ISO/IEC/IEEE 12207:2017

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
6.1.1 Acquisition Process			
Acquisition 2. a) acquisition needs, goals, product and/or service acceptance criteria and acquisition strategies are defined;	6.1.1.2a)	6.1.1.2a)	**Acquisition** 2. a) A request for supply is prepared.
Acquisition 2. b) an agreement is developed that clearly expresses the expectation, responsibilities and liabilities of both the acquirer and the supplier;	6.1.1.2b)	6.1.1.2c)	**Acquisition** 2. c) An agreement is established between the acquirer and supplier.
Acquisition 2. c) one or more suppliers is selected;	6.1.1.2c)	6.1.1.2b)	**Acquisition** 2. b) One or more suppliers are selected.
Acquisition 2. d) a product and/or service is acquired that satisfies the acquirer's stated need;	6.1.1.2d)	6.1.1.2d)	**Acquisition** 2. d) A product or service complying with the agreement is accepted.
Acquisition 2. e) the acquisition is monitored so that specified constraints such as cost, schedule and quality are met;	6.1.1.2e)	6.1.1.2d)	**Acquisition** 2. d) A product or service complying with the agreement is accepted.
Acquisition 2. f) supplier deliverables are accepted;	6.1.1.2f)	6.1.1.2d)	**Acquisition** 2. d) A product or service complying with the agreement is accepted.
Acquisition 2. g) any identified open items have a satisfactory conclusion as agreed to by the acquirer and the supplier.	6.1.1.2g)	6.1.1.2e)	**Acquisition** 2. e) Acquirer obligations defined in the agreement are satisfied.
6.1.2 Supply Process			
Supply 2. a) an acquirer for a product or service is identified;	6.1.2.2a)	6.1.2.2a)	**Supply** 2. a) An acquirer for a product or service is identified.
Supply 2. b) a response to an acquirer's request is produced;	6.1.2.2b)	6.1.2.2b)	**Supply** 2. b) A response to the acquirer's request is produced.
Supply 2. c) an agreement is established between the acquirer and the supplier for developing, maintaining, operating, packaging, delivering, and installing the product and/or service;	6.1.2.2c)	6.1.2.2c)	**Supply** 2. c) An agreement is established between the acquirer and supplier.
Supply 2. d) a product and/or service that meets the agreed requirements are developed by the supplier;	6.1.2.2d)	6.1.2.2d)	**Supply** 2. d) A product or service is provided.
Supply 2. e) the product and/or service is delivered to the acquirer in accordance with the agreed requirements;	6.1.2.2e)	6.1.2.2e)	**Supply** 2. e) Supplier obligations defined in the agreement are satisfied.
Supply 2. f) the product is installed in accordance with the agreed requirements.	6.1.2.2f)	6.1.2.2f)	**Supply** 2. f) Responsibility for the acquired product or service, as directed by the agreement, is transferred.
6.2.1 Life Cycle Model Management Process			
Life Cycle Model Management 2. a) policies and procedures for the management and deployment of life cycle models and processes are provided;	6.2.1.2a)	6.2.1.2a)	**Life cycle model management** 2. a) Organizational policies and procedures for the management and deployment of life cycle models and processes are established.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Life Cycle Model Management 2. b) responsibility, accountability and authority for life cycle management are defined;	6.2.1.2b)	6.2.1.2b)	**Life cycle model management** 2. b) Responsibility, accountability, and authority within life cycle policies, processes, models, and procedures are defined.
Life Cycle Model Management 2. c) life cycle processes, models and procedures for use by the organization are defined, maintained and improved;	6.2.1.2c)	6.2.1.2c)	**Life cycle model management** 2. c) Life cycle models and processes for use by the organization are assessed.
Life Cycle Model Management 2. d) prioritized process improvements are implemented.	6.2.1.2d)	6.2.1.2d)	**Life cycle model management** 2. d) Prioritized process, model, and procedure improvements are implemented.
6.2.2 Infrastructure Management Process			
Infrastructure Management 2. a) the requirements for infrastructure to support processes are defined;	6.2.2.2a)	6.2.2.2a)	**Infrastructure Management** 2. a) The requirements for infrastructure are defined.
Infrastructure Management 2. b) the infrastructure elements are identified and specified;	6.2.2.2b)	6.2.2.2b)	**Infrastructure Management** 2. b) The infrastructure elements are identified and specified.
Infrastructure Management 2. c) the infrastructure elements are acquired;	6.2.2.2c)	6.2.2.2c)	**Infrastructure Management** 2. c) Infrastructure elements are developed or acquired.
Infrastructure Management 2. d) the infrastructure elements are implemented;[a]	6.2.2.2d)	6.2.2.2e)	**Infrastructure Management** 2. c) Infrastructure elements are developed or acquired.
Infrastructure Management 2. e) a stable and reliable infrastructure is maintained and improved.	6.2.2.2e)	6.2.2.2d)	**Infrastructure Management** 2. d) The infrastructure is available.
6.2.3 Project Portfolio Management Process			
Project Portfolio Management 2. a) business venture opportunities, investments or necessities are qualified, prioritized and selected;	6.2.3.2a)	6.2.3.2a)	**Portfolio Management** 2.a) Business venture opportunities, investments or necessities are qualified and prioritized.
Project Portfolio Management 2. b) resources and budgets for each project are identified and allocated;	6.2.3.2b)	6.2.3.2c)	**Portfolio Management** 2. c) Resources and budgets for each project are allocated.
Project Portfolio Management 2. c) project management accountability and authorities are defined;	6.2.3.2c)	6.2.3.2d)	**Portfolio Management** 2. d) Project management responsibilities, accountability, and authorities are defined.
	6.2.3.2c)	6.3.1.2b)	**Project Planning** 2. b) Roles, responsibilities, accountabilities, and authorities are defined.
Project Portfolio Management 2. d) projects meeting agreement and stakeholder requirements are sustained;	6.2.3.2d)	6.2.3.2e)	**Portfolio Management** 2. e) Projects meeting agreement and stakeholder requirements are sustained.
Project Portfolio Management 2. e) projects not meeting agreement or stakeholder requirements are redirected or terminated;	6.2.3.2e)	6.2.3.2f)	**Portfolio Management** 2. f) Projects not meeting agreement or satisfying stakeholder requirements are redirected or terminated.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
6.2.4 Human Resource Management Process			
Human Resource Management 2. a) skills required by projects are identified;	6.2.4.2a)	6.2.4.2a)	**Human Resource Management** 2. a) Skills required by projects are identified.
Human Resource Management 2. b) necessary human resources are provided to projects;	6.2.4.2b)	6.2.4.2b)	**Human Resource Management** 2. b) Necessary human resources are provided to projects.
	6.2.4.2b)	6.2.5.2c)	**Quality Management** 2. c) Resources and information are provided to projects to support the operation and monitoring of project quality assurance activities.
Human Resource Management 2. c) Skills of personnel are developed, maintained or enhanced; (*)	6.2.4.2c)	6.2.4.2c)	**Human Resource Management** 2. c) Skills of personnel are developed, maintained or enhanced.
	6.2.4.2c)	6.2.6.2b)	**Knowledge Management** 2. b) The organizational knowledge, skills, and knowledge assets are developed or acquired.
	6.2.4.2c)	6.4.10.2e)	**Transition** 2. e) Operators, users and other stakeholders necessary to the system utilization and support are trained.
	6.2.4.2c)	6.2.12.2c)	**Operation** 2. c) Trained, qualified operators are available.
Human Resource Management 2. d) conflicts in multi-project resource demands are resolved;	6.2.4.2d)	6.2.4.2d)	**Human Resource Management** 2. d) Conflicts in multi-project resource demands are resolved.
Human Resource Management 2. e) individual knowledge, information and skills are collected, shared, reused and improved throughout the organization.	6.2.4.2e)	6.2.4.2c)	**Human Resource Management** 2. c) Skills of personnel are developed, maintained or enhanced.
	6.2.4.2e)	6.2.6.2c)	**Knowledge Management** 2. c) The organizational knowledge, skills, and knowledge assets are available.
6.2.5 Quality Management Process			
Quality Management 2. a) organization quality management policies and procedures are defined;	6.2.5.2a)	6.2.5.2a)	**Quality Management** 2. a) Organizational quality management policies, objectives, and procedures are defined and implemented.
	6.2.5.2a)	6.2.5.2b)	**Quality Management** 2. b) Quality evaluation criteria and methods are established.
Quality Management 2. b) organization quality objectives are defined;	6.2.5.2b)	6.2.5.2a)	**Quality Management** 2. a) Organizational quality management policies, objectives, and procedures are defined and implemented.
Quality Management 2. c) accountability and authority for quality management are defined;	6.2.5.2c)	6.2.5.2a)	**Quality Management** 2. a) Organizational quality management policies, objectives, and procedures are defined and implemented.
Quality Management 2. d) the status of customer satisfaction is monitored;	6.2.5.2d)	6.2.5.2d)	**Quality Management** 2. d) Quality assurance evaluation results are gathered and analyzed.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Quality Management 2. e) appropriate action is taken when quality objectives are not achieved.	6.2.5.2e)	6.2.5.2e)	**Quality Management** 2. e) Quality management policies and procedures are improved based upon project and organizational results.
6.3.1 Project Planning Process			
Project Planning 2. a) the scope of the work for the project is defined;	6.3.1.2a)	6.2.3.2b)	**Portfolio Management** 2. b) Projects are identified.
	6.3.1.2a)	6.3.1.2a)	**Project Planning** 2. a) Objectives and plans are defined.
Project Planning 2. b) the feasibility of achieving the goals of the project with available resources and constraints are evaluated;	6.3.1.2b)	6.3.1.2a)	**Project Planning** 2. a) Objectives and plans are defined.
	6.3.1.2b)	6.3.2.2c)	**Project assessment and control** 2. c) Adequacy of resources is assessed.
Project Planning 2. c) the tasks and resources necessary to complete the work are sized and estimated;	6.3.1.2c)	6.3.1.2a)	**Project Planning** 2. a) Objectives and plans are defined.
	6.3.1.2c)	6.3.1.2c)	**Project Planning** 2. c) Resources and services necessary to achieve the objectives are formally requested and committed.
Project Planning 2. d) interfaces between elements in the project, and with other project and organizational units, are identified;	6.3.1.2d)	6.3.1.2b)	**Project Planning** 2. b) Roles, responsibilities, accountabilities, and authorities are defined.
Project Planning 2. e) plans for the execution of the project are developed;	6.3.1.2e)	6.3.1.2a)	**Project Planning** 2. a) Objectives and plans are defined.
	6.3.1.2e)	6.3.1.2b)	**Project Planning** 2. b) Roles, responsibilities, accountabilities, and authorities are defined.
	6.3.1.2e)	6.3.1.2c)	**Project Planning** 2. c) Resources and services necessary to achieve the objectives are formally requested and committed.
Project Planning 2. f) plans for the execution of the project are activated.	6.3.1.2f)	6.3.1.2d)	**Project Planning** 2. d) Plans for the execution of the project are activated.
6.3.2 Project Assessment and Control Process			
Project Assessment and Control 2. a) progress of the project is monitored and reported;	6.3.2.2a)	6.3.2.2a)	**Project assessment and control** 2. a) Performance measures or assessment results are available.
	6.3.2.2a)	6.3.2.2b)	**Project assessment and control** 2. b) Adequacy of roles, responsibilities, accountabilities, and authorities is assessed.
	6.3.2.2a)	6.3.2.2c)	**Project assessment and control** 2. c) Adequacy of resources is assessed.
	6.3.2.2a)	6.3.2.2d)	**Project assessment and control** 2. d) Technical progress reviews are performed.
	6.3.2.2a)	6.3.2.2e)	**Project assessment and control** 2. e) Deviations in project performance from plans are investigated and analyzed.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
	6.3.2.2a)	6.3.2.2f)	**Project assessment and control** 2. f) Affected stakeholders are informed of project status.
Project Assessment and Control 2. b) interfaces between elements in the project, and with other project and organizational units, are monitored;	6.3.2.2b)	6.3.2.2b)	**Project assessment and control** 2. b) Adequacy of roles, responsibilities, accountabilities, and authorities is assessed.
	6.3.2.2b)	6.3.2.2f)	**Project assessment and control** 2. f) Affected stakeholders are informed of project status.
Project Assessment and Control 2. c) actions to correct deviations from the plan and to prevent recurrence of problems identified in the project are taken when project targets are not achieved;	6.3.2.2c)	6.3.2.2g)	**Project assessment and control** 2. g) Corrective action is defined and directed, when project achievement is not meeting targets.
	6.3.2.2c)	6.3.2.2h)	**Project assessment and control** 2. h) Project replanning is initiated, as necessary.
Project Assessment and Control 2 d) project objectives are achieved and recorded.	6.3.2.2d)	6.3.2.2j)	**Project assessment and control** 2. j) Project objectives are achieved.
6.3.3 Decision Management Process			
Decision Management 2. a) a decision-making strategy is defined;	6.3.3.2a)	6.3.3.2a)	**Decision Management** 2. a) Decisions requiring alternative analysis are identified.
Decision Management 2. b) alternative courses of action are defined;	6.3.3.2b)	6.3.3.2b)	**Decision Management** 2. b) Alternative courses of action are identified and evaluated.
Decision Management 2. c) a preferred course of action is selected;	6.3.3.2c)	6.3.3.2c)	**Decision Management** 2. c) A preferred course of action is selected.
Decision Management 2. d) the resolution, decision rationale and assumptions are captured and reported.	6.3.3.2d)	6.3.3.2d)	**Decision Management** 2. d) The resolution, decision rationale and assumptions are identified.
6.3.4 Risk Management Process			
Risk Management 2. a) the scope of risk management to be performed is determined;	6.3.4.2a)	6.3.4.2a)	**Risk Management** 2. a) Risks are identified.
Risk Management 2. b) appropriate risk management strategies are defined and implemented;	6.3.4.2b)	6.3.4.2c)	**Risk Management** 2. c) Risk treatment options are identified, prioritized, and selected.
Risk Management 2. c) risks are identified as they develop and during the conduct of the project;	6.3.4.2c)	6.3.4.2a)	**Risk Management** 2. a) Risks are identified.
Risk Management 2. d) risks are analyzed, and the priority in which to apply resources to treatment of these risks is determined;	6.3.4.2d)	6.3.4.2b)	**Risk Management** 2. b) Risks are analyzed.
	6.3.4.2d)	6.3.4.2c)	**Risk Management** 2. c) Risk treatment options are identified, prioritized, and selected.
Risk Management 2. e) risk measures are defined, applied, and assessed to determine changes in the status of risk and the progress of the treatment activities;	6.3.4.2e)	6.3.4.2c)	**Risk Management** 2. c) Risk treatment options are identified, prioritized, and selected.
	6.3.4.2e)	6.3.4.2e)	**Risk Management** 2. e) Risks are evaluated to assess changes in status and progress in treatment.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Risk Management 2. f) appropriate treatment is taken to correct or avoid the impact of risk based on its priority, probability, and consequence or other defined risk threshold.	6.3.4.2f)	6.3.4.2d)	**Risk Management** 2. d) Appropriate treatment is implemented.
6.3.5 Configuration Management Process			
Configuration Management 2. a) a configuration management strategy is defined;	6.3.5.2a)	6.3.5.2a)	**Configuration Management** 2. a) Items requiring configuration management are identified and managed.
Configuration Management 2. b) items requiring configuration management are defined;	6.3.5.2b)	6.3.5.2a)	**Configuration Management** 2. a) Items requiring configuration management are identified and managed.
Configuration Management 2. c) configuration baselines are established;	6.3.5.2c)	6.3.5.2b)	**Configuration Management** 2. b) Configuration baselines are established.
Configuration Management 2. d) changes to items under configuration management are controlled;	6.3.5.2d)	6.3.5.2c)	**Configuration Management** 2. c) Changes to items under configuration management are controlled.
Configuration Management 2. e) the configuration of released items is controlled;	6.3.5.2e)	6.3.5.2f)	**Configuration Management** 2. f) System releases and deliveries are controlled and approved.
Configuration Management 2. f) the status of items under configuration management is made available throughout the life cycle.	6.3.5.2f)	6.3.5.2d)	**Configuration Management** 2. d) Configuration status information is available.
6.3.6 Information Management Process			
Information Management 2. a) information to be managed is identified;	6.3.6.2a)	6.3.6.2a)	**Information Management** 2. a) Information to be managed is identified.
Information Management 2. b) the forms of the information representations are defined;	6.3.6.2b)	6.3.6.2b)	**Information Management** 2. b) Information representations are defined.
Information Management 2. c) information is transformed and disposed of as required;	6.3.6.2c)	6.3.6.2c)	**Information Management** 2. c) Information is obtained, developed, transformed, stored, validated, presented, and disposed of.
Information Management 2. d) the status of information is recorded;	6.3.6.2d)	6.3.6.2d)	**Information Management** 2. d) The status of information is identified.
Information Management 2. e) information is current, complete and valid;	6.3.6.2e)	6.3.6.2c)	**Information Management** 2. c) Information is obtained, developed, transformed, stored, validated, presented, and disposed of.
	6.3.6.2e)	6.3.6.2d)	**Information Management** 2. d) The status of information is identified.
Information Management 2. f) information is made available to designated parties.	6.3.6.2f)	6.3.6.2e)	**Information Management** 2. e) Information is available to designated stakeholders.
6.3.7 Measurement Process			
Measurement 2. a) the information needs of technical and management processes are identified;	6.3.7.2a)	6.3.7.2a)	**Measurement** 2. a) Information needs are identified.
Measurement 2. b) an appropriate set of measures, driven by the information needs are identified and/or developed;	6.3.7.2b)	6.3.7.2b)	**Measurement** 2. b) An appropriate set of measures, based on the information needs, is identified or developed.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Measurement 2. c) measurement activities are identified and planned;	6.3.7.2c)	6.3.7.2b)	**Measurement** 2. b) An appropriate set of measures, based on the information needs, is identified or developed.
Measurement 2. d) the required data are collected, stored, analyzed, and the results interpreted;	6.3.7.2d)	6.3.7.2c)	**Measurement** 2. c) Required data is collected, verified, and stored.
	6.3.7.2d)	6.3.7.2d)	**Measurement** 2. d) The data is analyzed and the results interpreted.
Measurement 2. e) information products are used to support decisions and provide an objective basis for communication;	6.3.7.2e)	6.3.6.2c)	**Information Management** 2. c) Information is obtained, developed, transformed, stored, validated, presented, and disposed of.
	6.3.7.2e)	6.3.7.2e)	**Measurement** 2. e) Information items provide objective information that supports decisions.
Measurement 6. f) the Measurement Process and measures are evaluated;	6.3.7.2f)	6.3.8.2c)	**Quality Assurance** 2. c) Evaluations of the project's products, services, and processes are performed, consistent with quality management policies, procedures, and requirements.
Measurement 2. g) improvements are communicated to the Measurement Process owner.	6.3.7.2g)	6.3.7.2e)	**Measurement** 2. e) Information items provide objective information that supports decisions.
6.4.1 Stakeholder Requirements Definition Process			
Stakeholder Requirements Definition 2. a) the required characteristics and context of use of services are specified;	6.4.1.2a)	6.4.1.2c)	**Business or Mission Analysis** 2. c) Preliminary operational concepts and other concepts in the life cycle stages are defined.
	6.4.1.2a)	6.4.2.2b)	**Stakeholder Needs and Requirements Definition** 2. b) Required characteristics and context of use of capabilities and concepts in the life cycle stages, including operational concepts, are defined.
	6.4.1.2a)	6.4.2.2d)	**Stakeholder Needs and Requirements Definition** 2. d) Stakeholder needs are defined.
Stakeholder Requirements Definition 2. b) the constraints on a system solution are defined;	6.4.1.2b)	6.4.2.2c)	**Stakeholder Needs and Requirements Definition** 2. c) Constraints on a system are identified.
Stakeholder Requirements Definition 2. c) traceability of stakeholder requirements to stakeholders and their needs is achieved;	6.4.1.2d)	6.4.2.2 i)	**Stakeholder Needs and Requirements Definition** 2. i) Traceability of stakeholder requirements to stakeholders and their needs is established.
Stakeholder Requirements Definition 2. d) the basis for defining the system requirements is described;	6.4.1.2d)	6.4.2.2e)	**Stakeholder Needs and Requirements Definition** 2. e) Stakeholder needs are prioritized and transformed into clearly defined stakeholder requirements.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Stakeholder Requirements Definition 2. e) the basis for validating the conformance of the services is defined;	6.4.1.2e)	6.4.2.2e)	**Stakeholder Needs and Requirements Definition** 2. e) Stakeholder needs are prioritized and transformed into clearly defined stakeholder requirements.
Stakeholder Requirements Definition 2. f) a basis for negotiating and agreeing to supply a service or product is provided.	6.4.1.2f)	6.4.2.2g)	**Stakeholder Needs and Requirements Definition** 2. g) Stakeholder agreement that their needs and expectations are reflected adequately in the requirements is achieved.
6.4.2 System Requirements Analysis Process			
System Requirements Analysis 2. a) a defined set of system functional and non-functional requirements describing the problem to be solved are established;	6.4.2.2a)	6.4.3.2a)	**System/Software requirements definition** 1. a) The system or element description, including interfaces, functions and boundaries, for a system solution is defined.
	6.4.2.2a)	6.4.3.2b)	**System/Software requirements definition** 2. b) System/software requirements (functional, performance, process, non-functional, and interface) and design constraints are defined.
System Requirements Analysis 2. b) the appropriate techniques are performed to optimize the preferred project solution;	6.4.2.2b)	None	None of outcomes is mapped.
System Requirements Analysis 2. c) system requirements are analyzed for correctness and testability;	6.4.2.2c)	6.4.3.2d)	**System/Software requirements definition** 2. d) The system/software requirements are analyzed.
System Requirements Analysis 2. d) the impact of the system requirements on the operating environment are understood;	6.4.2.2d)	6.4.3.2c)	**System/Software requirements definition** 2. c) Critical performance measures are defined.
	6.4.2.2d)	6.4.3.2d)	**System/Software requirements definition** 2. d) The system/software requirements are analyzed.
System Requirements Analysis 2.e) the requirements are prioritized, approved and updated as needed;	6.4.2.2e)	6.4.3.2b)	**System/Software requirements definition** 2. b) System/software requirements (functional, performance, process, non-functional, and interface) and design constraints are defined.
System Requirements Analysis 2. f) consistency and traceability are established between the system requirements and the customer's requirements baseline;	6.4.2.2f)	6.4.3.2f)	**System/Software requirements definition** 2. f) Traceability of system/software requirements to stakeholder requirements is developed.
System Requirements Analysis 2. g) changes to the baseline are evaluated for cost, schedule and technical impact;	6.4.2.2g)	6.4.3.2d)	**System/Software requirements definition** 2. d) The system/software requirements are analyzed.
System Requirements Analysis 2.h) the system requirements are communicated to all affected parties and baselined.	6.4.2.2h)	6.4.3.2b)	**System/Software requirements definition** 2. b) System/software requirements (functional, performance, process, non-functional, and interface) and design constraints are defined.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
6.4.3 System Architectural Design Process			
System Architecture Design 2. a) a system architecture design is defined that identifies the elements of the system and meets the defined requirements;	6.4.3.2a)	6.4.4.2a)	**Architecture Definition** 2. a) Identified stakeholder concerns are addressed by the architecture.
	6.4.3.2a)	6.4.4.2b)	**Architecture Definition** 2. b) Architecture viewpoints are developed.
	6.4.3.2a)	6.4.4.2e)	**Architecture Definition** 2. e) Concepts, properties, characteristics, behaviors, functions, or constraints that are significant to architecture decisions of the system are allocated to architectural entities.
	6.4.3.2a)	6.4.4.2f)	**Architecture Definition** 2. f) System elements and their interfaces are identified.
	6.4.3.2a)	6.4.4.2g)	**Architecture Definition** 2. g) Architecture candidates are assessed.
	6.4.3.2a)	6.4.4.2h)	**Architecture Definition** 2. h) An architectural basis for processes throughout the life cycle is achieved.
System Architecture Design 2. b) the system's functional and non-functional requirements are addressed;	6.4.3.2b)	6.4.4.2e)	**Architecture Definition** 2. e) Concepts, properties, characteristics, behaviors, functions, or constraints that are significant to architecture decisions of the system are allocated to architectural entities.
System Architecture Design 2. c) the requirements are allocated to the elements of the system;	6.4.3.2c)	6.4.4.2a)	**Architecture Definition** 2. a) Identified stakeholder concerns are addressed by the architecture.
	6.4.3.2c)	6.4.4.2 i)	**Architecture Definition** 2. i) Alignment of the architecture with requirements and design characteristics is achieved.
System Architecture Design 2. d) internal and external interfaces of each system element are defined;	6.4.3.2d)	6.4.4.2f)	**Architecture Definition** 2. f) System elements and their interfaces are identified.
System Architecture Design 2. e) verification between the system requirements and the system architecture is performed;	6.4.3.2e)	6.4.4.2 i)	**Architecture Definition** 2. i) Alignment of the architecture with requirements and design characteristics is achieved.
System Architecture Design 2. e) verification between the system requirements and the system architecture is performed;	6.4.3.2e)	6.4.9.2c)	**Verification** 2. c) The system or system element is verified.
System Architecture Design 2. f) the requirements allocated to the system elements and their interfaces are traceable to the customer's requirements baseline;	6.4.3.2f)	6.4.4.2k)	**Architecture Definition** 2. k) Traceability of architecture elements to stakeholder and system/software requirements is developed.
System Architecture Design 2. g) consistency and traceability between the system requirements and system architecture design is maintained;	6.4.3.2g)	6.4.4.2k)	**Architecture Definition** 2. k) Traceability of architecture elements to stakeholder and system/software requirements is developed.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
System Architecture Design 2. h) the system requirements, the system architecture design, and their relationships are baselined and communicated to all affected parties;	6.4.3.2h)	6.4.4.2d)	**Architecture Definition** 2. d) Architecture views and models of the system are developed.
System Architecture Design 2. i) human factors and ergonomic knowledge and techniques are incorporated in system design;	6.4.3.2 i)	6.4.4.2e)	**Architecture Definition** 2. e) Concepts, properties, characteristics, behaviors, functions, or constraints that are significant to architecture decisions of the system are allocated to architectural entities.
System Architecture Design 2. j) human-centred design activities are identified and performed.	6.4.3.2 j)	None	None of outcomes is mapped.
6.4.4 Implementation Process[b]			
6.4.5 System Integration Process			
System Integration 2. a) a strategy is developed to integrate the system according to the priorities of the system requirements;	6.4.5.2a)	6.4.8.2a)	**Integration** 2. a) Integration constraints that influence system requirements, architecture, or design, including interfaces, are identified.
	6.4.5.2a)	6.4.8.2b)	**Integration** 2. b) Approach and checkpoints for the correct operation of the assembled interfaces and system functions are defined.
System Integration 2. b) criteria are developed to verify compliance with the system requirements allocated to the system elements, including the interfaces between system elements;	6.4.5.2b)	6.4.8.2b)	**Integration** 2. b) Approach and checkpoints for the correct operation of the assembled interfaces and system functions are defined.
	6.4.5.2b)	6.4.8.2e)	**Integration** 2. e) The interfaces between the implemented system elements that compose the system are checked.
System Integration 2. c) the system integration is verified using the defined criteria;	6.4.5.2c)	6.4.8.2b)	**Integration** 2. b) Approach and checkpoints for the correct operation of the assembled interfaces and system functions are defined.
	6.4.5.2c)	6.4.8.2e)	**Integration** 2. e) The interfaces between the implemented system elements that compose the system are checked.
	6.4.5.2c)	6.4.8.2f)	**Integration** 2. f) The interfaces between the system and the external environment are checked.
	6.4.5.2c)	6.4.8.2g)	**Integration** 2. g) Integration results and anomalies are identified.
	6.4.5.2c)	6.4.9.2c)	**Verification** 2. c) The system or system element is verified.
System Integration 2. d) a regression strategy is developed and applied for re-testing the system when changes are made;	6.4.5.2d)	6.4.8.2b)	**Integration** 2. b) Approach and checkpoints for the correct operation of the assembled interfaces and system functions are defined.
	6.4.5.2d)	6.4.9.2c)	**Verification** 2. c) The system or system element is verified.

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Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
System Integration 2. e) consistency and traceability are established between the system design and the integrated system elements;	6.4.5.2e)	6.4.8.2h)	**Integration** 2. h) Traceability of the integrated system elements is established.
System Integration 2. f) an integrated system is constructed that demonstrates compliance with the system design;	6.4.5.2f)	6.4.8.2d)	**Integration** 2. d) A system composed of implemented system elements is integrated.
System Integration 2. g) an integrated system is constructed that demonstrates that a complete set of usable deliverable system elements exists.	6.4.5.2g)	6.4.8.2d)	**Integration** 2. d) A system composed of implemented system elements is integrated.
6.4.6 System Qualification Testing Process			
System Qualification Testing 2. a) criteria for evaluating compliance with system requirements are developed;	6.4.6.2a)	6.4.9.2a)	**Verification** 2. a) Constraints of verification that influence the requirements, architecture, or design are identified.
System Qualification Testing 2. b) the integrated system is tested using the defined criteria;	6.4.6.2b)	6.4.9.2c)	**Verification** 2. c) The system or system element is verified.
System Qualification Testing 2. c) test results are recorded;	6.4.6.2c)	6.4.9.2e)	**Verification** 2. e) Objective evidence that the realized system fulfills the requirements, architecture and design is provided.
	6.4.6.2c)	6.4.9.2f)	**Verification** 2. f) Verification results and anomalies are identified.
System Qualification Testing 2. d) readiness of the system for delivery is assured.	6.4.6.2d)	6.3.8.2c)	**Quality Assurance** 2. c) Evaluations of the project's products, services, and processes are performed, consistent with quality management policies, procedures, and requirements.
6.4.7 Software Installation Process			
Software Installation 2. a) a software installation strategy is developed;	6.4.7.2a)	6.4.10.2a)	**Transition** 2. a) Transition constraints that influence system/software requirements, architecture, or design are identified.
Software Installation 2. b) criteria for software installation are developed that demonstrate compliance with the software installation requirements;	6.4.7.2b)	6.4.10.2a)	**Transition** 2. a) Transition constraints that influence system/software requirements, architecture, or design are identified.
	6.4.7.2b)	6.4.10.2h)	**Transition** 2. h) Traceability of the transitioned elements is established.
Software Installation 2. c) the software product is installed in the target environment;	6.4.7.2c)	6.4.10.2g)	**Transition** 2. g) The installed system is activated and ready for operation.
Software Installation 2. d) readiness of the software product for use in its intended environment is assured. (*)	6.4.7.2d)	6.4.10.2c)	**Transition** 2. c) The site is prepared.
	6.4.7.2d)	6.4.10.2d)	**Transition** 2. d) The system, as installed in its operational location, is capable of delivering its specified functions.
	6.4.7.2d)	6.4.10.2e)	**Transition** 2. e) Operators, users and other stakeholders necessary to the system utilization and support are trained.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
	6.4.7.2d)	6.4.10.2f)	**Transition** 2. f) Transition results and anomalies are identified.
	6.4.7.2d)	6.4.10.2g)	**Transition** 2. g) The installed system is activated and ready for operation.
6.4.8 Software Acceptance Support Process			
Software Acceptance Support 2. a) the product is completed and delivered to the acquirer; (*)	6.4.8.2a)	6.4.10.2d)	**Transition** 2. d) The system, as installed in its operational location, is capable of delivering its specified functions.
Software Acceptance Support 2. b) acquirer acceptance tests and reviews are supported;	6.4.8.2b)	6.4.10.2d)	**Transition** 2. d) The system, as installed in its operational location, is capable of delivering its specified functions.
	6.4.8.2b)	6.4.11.2b)	**Validation** 2. b) The availability of services required by stakeholders is confirmed.
	6.4.8.2b)	6.4.11.2d)	**Validation** 2. d) The system or system element is validated.
Software Acceptance Support 2. c) the product is put into operation in the customers' environment;	6.4.8.2c)	6.4.10.2e)	**Transition** 2. e) Operators, users and other stakeholders necessary to the system utilization and support are trained.
	6.4.8.2c)	6.4.10.2g)	**Transition** 2. g) The installed system is activated and ready for operation.
	6.4.8.2c)	6.4.11.2b)	**Validation** 2. b) The availability of services required by stakeholders is confirmed.
	6.4.8.2c)	6.4.12.2d)	**Operation** 2. d) System product services that meet stakeholder requirements are delivered.
Software Acceptance Support 2. d) Problems detected during acceptance are identified and communicated to those responsible for resolution.	6.4.8.2d)	6.4.10.2f)	**Transition** 2. f) Transition results and anomalies are identified.
	6.4.8.2d)	6.4.11.2f)	**Validation** 2. f) Validation results and anomalies are identified.
6.4.9 Software Operation Process			
Software Operation 2. a) an operation strategy is defined;	6.4.9.2a)	6.4.12.2a)	**Operation** 2. a) Operation constraints that influence system/software requirements, architecture, or design are identified.
Software Operation 2. b) conditions for correct operation of the software in its intended environment are identified and evaluated; (*)	6.4.9.2b)	6.4.12.2a)	**Operation** 2. a) Operation constraints that influence system/software requirements, architecture, or design are identified.
	6.4.9.2b)	6.4.12.2e)	**Operation** 2. e) System product performance during operation is monitored.
Software Operation 2. c) the software is tested and determined to operate in its intended environment;	6.4.9.2c)	6.4.11.2d)	**Validation** 2. d) The system or system element is validated.
Software Operation 2. d) the software is operated in its intended environment;	6.4.9.2d)	6.4.12.2d)	**Operation** 2. d) System product services that meet stakeholder requirements are delivered.

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Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Software Operation 2. e) assistance and consultation is provided to the customers of the software product in accordance with the agreement.	6.4.9.2e)	6.4.12.2f)	**Operation** 2. f) Support to the customer is provided.
6.4.10 Software Maintenance Process			
Software Maintenance 2. a) a maintenance strategy is developed to manage modification and migration of products according to the release strategy;	6.4.10.2a)	6.4.13.2a)	**Maintenance** 2. a) Maintenance constraints that influence system requirements, architecture, or design are identified.
Software Maintenance 2. b) the impact of changes to the existing system on organization, operations or interfaces are identified;	6.4.10.2b)	6.4.13.2a)	**Maintenance** 2. a) Maintenance constraints that influence system requirements, architecture, or design are identified.
	6.4.10.2b)	6.4.13.2d)	**Maintenance** 2. d) The need for changes to address corrective, perfective, or adaptive maintenance is reported.
	6.4.10.2b)	6.4.13.2e)	**Maintenance** 2. e) Failure and lifetime data, including associated costs, is determined.
Software Maintenance 2. c) affected system and software documentation is updated as needed;	6.4.10.2c)	6.4.13.2c)	**Maintenance** 2 c) Replacement, repaired, or revised system elements are made available.
Software Maintenance 2. d) modified products are developed with associated tests that demonstrate that requirements are not compromised; (*)	6.4.10.2d)	6.4.13.2c)	**Maintenance** 2 c) Replacement, repaired, or revised system elements are made available.
Software Maintenance 2. e) product upgrades are migrated to the customer's environment; (*)	6.4.10.2e)	6.4.13.2c)	**Maintenance** 2 c) Replacement, repaired, or revised system elements are made available.
Software Maintenance 6. f) the system software modification is communicated to all affected parties.	6.4.10.2f)	6.4.13.2c)	**Maintenance** 2 c) Replacement, repaired, or revised system elements are made available.

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Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
6.4.11 Software Disposal Process			
Software Disposal 2. a) a software disposal strategy is defined; (*)	6.4.11.2a)	6.4.14.2a)	**Disposal** 2. a) Disposal constraints are provided as inputs to requirements, architecture, design, and implementation.
Software Disposal 2. b) disposal constraints are provided as inputs to requirements;	6.4.11.2b)	6.4.14.2a)	**Disposal** 2. a) Disposal constraints are provided as inputs to requirements, architecture, design, and implementation.
Software Disposal 2. c) the system's software elements are destroyed or stored;(*)	6.4.11.2c)	6.4.14.2c)	**Disposal** 2. c) The system elements or waste products are destroyed, stored, reclaimed or recycled in accordance with requirements, e.g. , safety and security requirements.
Software Disposal 2. d) the environment is left in an agreed-upon state;	6.4.11.2d)	6.4.14.2d)	**Disposal** 2. d) The environment is returned to its original or an agreed state.
Software Disposal 2. e) records allowing knowledge retention of disposal actions and any analysis of long-term impacts are available.	6.4.11.2e)	6.4.14.2e)	**Disposal** 2. e) Records of disposal actions and analysis are available.
7.1.1 Software Implementation Process			
Software Implementation 2. a) an implementation strategy is defined;	7.1.1.2a)	6.4.7.2a)	**Implementation** 2. a) Implementation constraints that influence the requirements, architecture, or design are identified.
Software Implementation 2. b) implementation technology constraints on the design are identified;	7.1.1.2b)	6.4.7.2a)	**Implementation** 2. a) Implementation constraints that influence the requirements, architecture, or design are identified.
Software Implementation 2. c) a software item is realized;	7.1.1.2c)	6.4.7.2b)	**Implementation** 2. b) A system element is realized.
Software Implementation 2. d) a software item is packaged and stored in accordance with an agreement for its supply.	7.1.1.2d)	6.4.7.2c)	**Implementation** 2. c) A system element is packaged or stored.
7.1.2 Software Requirements Analysis Process			
Software Requirements Analysis 2. a) the requirements allocated to the software elements of the system and their interfaces are defined;	7.1.2.2a)	6.4.3.2a)	**System/Software requirements definition** 2. a) The system or element description, including interfaces, functions and boundaries, for a system solution is defined.
	7.1.2.2a)	6.4.3.2b)	**System/Software requirements definition** 2. b) System/software requirements (functional, performance, process, non-functional, and interface) and design constraints are defined.
Software Requirements Analysis 2. b) software requirements are analyzed for correctness and testability;	7.1.2.2b)	6.4.3.2d)	**System/Software requirements definition** 2. d) The system/software requirements are analyzed.
Software Requirements Analysis 2. c) the impact of software requirements on the operating environment is understood;	7.1.2.2c)	6.4.3.2c)	**System/Software requirements definition** 2. c) Critical performance measures are defined.

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Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
	7.1.2.2c)	6.4.3.2d)	**System/Software requirements definition** 2. d) The system/software requirements are analyzed.
Software Requirements Analysis 2. d) consistency and traceability are established between the software requirements and system requirements;	7.1.2.2d)	6.4.3.2f)	**System/Software requirements definition** 2. f) Traceability of system/software requirements to stakeholder requirements is developed.
Software Requirements Analysis 2. e) prioritization for implementing the software requirements is defined;	7.1.2.2e)	6.4.3.2b)	**System/Software requirements definition** 2. b) System/software requirements (functional, performance, process, non-functional, and interface) and design constraints are defined.
Software Requirements Analysis 2. f) the software requirements are approved and updated as needed;	7.1.2.2f)	6.4.3.2b)	**System/Software requirements definition** 2. b) System/software requirements (functional, performance, process, non-functional, and interface) and design constraints are defined.
Software Requirements Analysis 2. g) changes to the software requirements are evaluated for cost, schedule and technical impact;	7.1.2.2g)	6.4.3.2d)	**System/Software requirements definition** 2. d) The system/software requirements are analyzed.
Software Requirements Analysis 2. h) the software requirements are baselined and communicated to all affected parties;	7.1.2.2h)	6.4.3.2b)	**System/Software requirements definition** 2. b) System/software requirements (functional, performance, process, non-functional, and interface) and design constraints are defined.
7.1.3 Software Architectural Design Process			
Software Architecture Design 2. a) a software architectural design is developed and baselined that describes the software items that will implement the software requirements;	7.1.3.2a)	6.4.4.2a)	**Architecture Definition** 2. a) Identified stakeholder concerns are addressed by the architecture.
	7.1.3.2a)	6.4.4.2b)	**Architecture Definition** 2. b) Architecture viewpoints are developed.
	7.1.3.2a)	6.4.4.2d)	**Architecture Definition** 2. d) Architecture views and models of the system are developed.
	7.1.3.2a)	6.4.4.2e)	**Architecture Definition** 2. e) Concepts, properties, characteristics, behaviors, functions, or constraints that are significant to architecture decisions of the system are allocated to architectural entities.
	7.1.3.2a)	6.4.4.2f)	**Architecture Definition** 2. f) System elements and their interfaces are identified.
	7.1.3.2a)	6.4.4.2g)	**Architecture Definition** 2. g) Architecture candidates are assessed.
	7.1.3.2a)	6.4.4.2h)	**Architecture Definition** 2. h) An architectural basis for processes throughout the life cycle is achieved.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

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Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
	7.1.3.2a)	6.4.4.2 i)	**Architecture Definition** 2. i) Alignment of the architecture with requirements and design characteristics is achieved.
Software Architecture Design 2. b) internal and external interfaces of each software item are defined;	7.1.3.2b)	6.4.4.2c)	**Architecture Definition** 2. c) Context, boundaries, and external interfaces of the system are defined.
	7.1.3.2b)	6.4.4.2f)	**Architecture Definition** 2. f) System elements and their interfaces are identified.
Software Architecture Design 2. c) consistency and traceability are established between software requirements and software design.	7.1.3.2c)	6.4.4.2a)	**Architecture Definition** 2. a) Identified stakeholder concerns are addressed by the architecture.
	7.1.3.2c)	6.4.4.2 i)	**Architecture Definition** 2. i) Alignment of the architecture with requirements and design characteristics is achieved.
	7.1.3.2c)	6.4.4.2k)	**Architecture Definition** 2. k) Traceability of architecture elements to stakeholder and system/software requirements is developed.
7.1.4 Software Detailed Design Process			
Software Detailed Design 2. a) a detailed design of each software component, describing the software units to be built, is developed;	7.1.4.2a)	6.4.5.2a)	**Design Definition** 2. a) Design characteristics of each system element are defined.
	7.1.4.2a)	6.4.5.2b)	**Design Definition** 2. b) System/software requirements are allocated to system elements.
	7.1.4.2a)	6.4.5.2c)	**Design Definition** 2. c) Design enablers necessary for design definition are selected or defined.
	7.1.4.2a)	6.4.5.2e)	**Design Definition** 2. e) Design alternatives for system elements are assessed.
	7.1.4.2a)	6.4.5.2f)	**Design Definition** 2. f) Design artifacts are developed.
Software Detailed Design 2. b) external interfaces of each software unit are defined;	7.1.4.2b)	6.4.5.2d)	**Design Definition** 2. d) Interfaces between system elements composing the system are defined or refined.
Software Detailed Design 2. c) consistency and traceability are established between the detailed design and the requirements and architectural design.	7.1.4.2c)	6.4.5.2b)	**Design Definition** 2. b) System/software requirements are allocated to system elements.
	7.1.4.2c)	6.4.5.2h)	**Design Definition** 2. h) Traceability of the design characteristics to the architectural entities of the system architecture is established.
7.1.5 Software Construction Process			
Software Construction 2. a) verification criteria are defined for all software units against their requirements;	7.1.5.2a)	6.4.7.2a)	**Implementation** 2. a) Implementation constraints that influence the requirements, architecture, or design are identified.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
	7.1.5.2a)	6.4.9.2a)	**Verification** 2. a) Constraints of verification that influence the requirements, architecture, or design are identified.
Software Construction 2. b) software units defined by the design are produced;	7.1.5.2b)	6.4.7.2b)	**Implementation** 2. b) A system element is realized.
Software Construction 2. c) consistency and traceability are established between software units and requirements and design;	7.1.5.2c)	6.4.7.2e)	**Implementation** 2. e) Traceability is established.
Software Construction 2. d) verification of the software units against the requirements and the design is accomplished;	7.1.5.2d)	6.4.7.2a)	**Implementation** 2. a) Implementation constraints that influence the requirements, architecture, or design are identified.
	7.1.5.2d)	6.4.7.2b)	**Implementation** 2. b) A system element is realized.
7.1.6 Software Integration Process			
Software Integration 2. a) an integration strategy is developed for software units consistent with the software design and the prioritized software requirements;	7.1.6.2a)	6.4.8.2a)	**Integration** 2. a) Integration constraints that influence system requirements, architecture, or design, including interfaces, are identified.
	7.1.6.2a)	6.4.8.2b)	**Integration** 2. b) Approach and checkpoints for the correct operation of the assembled interfaces and system functions are defined.
Software Integration 2. b) verification criteria for software items are developed that ensure compliance with the software requirements allocated to the items;	7.1.6.2b)	6.4.9.2a)	**Verification** 2. a) Constraints of verification that influence the requirements, architecture, or design are identified.
Software Integration 2. c) software items are verified using the defined criteria;	7.1.6.2c)	6.4.8.2b)	**Integration** 2. b) Approach and checkpoints for the correct operation of the assembled interfaces and system functions are defined.
	7.1.6.2c)	6.4.8.2e)	**Integration** 2. e) The interfaces between the implemented system elements that compose the system are checked.
	7.1.6.2c)	6.4.8.2f)	**Integration** 2. f) The interfaces between the system and the external environment are checked.
	7.1.6.2c)	6.4.8.2g)	**Integration** 2. g) Integration results and anomalies are identified.
	7.1.6.2c)	6.4.9.2c)	**Verification** 2. c) The system or system element is verified.
Software Integration 2. d) software items defined by the integration strategy are produced;	7.1.6.2d)	6.4.8.2d)	**Integration** 2. d) A system composed of implemented system elements is integrated.
Software Integration 2. e) results of integration testing are recorded;	7.1.6.2e)	6.4.8.2g)	**Integration** 2. g) Integration results and anomalies are identified.
Software Integration 2. f) consistency and traceability are established between software design and software items;	7.1.6.2f)	6.4.8.2h)	**Integration** 2. h) Traceability of the integrated system elements is established.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Software Integration 2. g) a regression strategy is developed and applied for re-verifying software items when a change in software units (including associated requirements, design and code) occur;	7.1.6.2g)	6.4.9.2a)	**Verification** 2. a) Constraints of verification that influence the requirements, architecture, or design are identified.
7.1.7 Software Qualification Testing Process			
Software Qualification Testing 2. a) criteria for the integrated software are developed that demonstrate compliance with the software requirements;	7.1.7.2a)	6.4.9.2a)	**Verification** 2. a) Constraints of verification that influence the requirements, architecture, or design are identified.
	7.1.7.2a)	6.4.9.2g)	**Verification** 2. g) Traceability of the verified system elements is established.
Software Qualification Testing 2. b) integrated software is verified using the defined criteria;	7.1.7.2b)	6.4.9.2c)	**Verification** 2. c) The system or system element is verified.
Software Qualification Testing 2. c) test results are recorded;	7.1.7.2c)	6.4.9.2e)	**Verification** 2. e) Objective evidence that the realized system fulfills the requirements, architecture and design is provided.
	7.1.7.2c)	6.4.9.2f)	**Verification** 2. f) Verification results and anomalies are identified.
Software Qualification Testing 2. d) a regression strategy is developed and applied for re-testing the integrated software when a change in software items is made.	7.1.7.2d)	6.4.9.2a)	**Verification** 2. a) Constraints of verification that influence the requirements, architecture, or design are identified.
	7.1.7.2d)	6.4.9.2c)	**Verification** 2. c) The system or system element is verified.
7.2.1 Software Documentation Management Process			
Software Documentation Management 2. a) a strategy identifying the documentation to be produced during the life cycle of the software product or service is developed;	7.2.1.2a)	6.3.6.2a)	**Information Management** 2. a) Information to be managed is identified.
Software Documentation Management 2. b) the standards to be applied for the development of the software documentation are identified; (*)	7.2.1.2b)	None	None of outcomes is mapped.
Software Documentation Management 2. c) documentation to be produced by the process or project is identified;	7.2.1.2c)	6.3.6.2a)	**Information Management** 2. a) Information to be managed is identified.
Software Documentation Management 2. d) the content and purpose of all documentation is specified[, reviewed and approved;]	7.2.1.2d)	6.3.6.2b)	**Information Management** 2. b) Information representations are defined.
	7.2.1.2d)	6.3.6.2c)	**Information Management** 2. c) Information is obtained, developed, transformed, stored, validated, presented, and disposed of.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Software Documentation Management 2. e) documentation is developed [and made available in accordance with identified standards];	7.2.1.2e)	6.3.6.2c)	**Information Management** 2. c) Information is obtained, developed, transformed, stored, validated, presented, and disposed of.
	7.2.1.2e)	6.3.6.2e)	**Information Management** 2. e) Information is available to designated stakeholders.
Software Documentation Management 2. f) documentation is maintained in accordance with defined criteria.	7.2.1.2f)	6.3.6.2c)	**Information Management** 2. c) Information is obtained, developed, transformed, stored, validated, presented, and disposed of.
	7.2.1.2f)	6.3.6.2d)	**Information Management** 2. d) The status of information is identified.
7.2.2 Software Configuration Management Process			
Software Configuration Management 2. a) a software configuration management strategy is developed;	7.2.2.2a)	6.3.5.2a)	**Configuration Management** 2. a) Items requiring configuration management are identified and managed.
Software Configuration Management 2. b) items generated by the process or project are identified, defined and baselined;	7.2.2.2b)	6.3.5.2a)	**Configuration Management** 2. a) Items requiring configuration management are identified and managed.
	7.2.2.2b)	6.3.5.2b)	**Configuration Management** 2. b) Configuration baselines are established.
Software Configuration Management 2. c) modifications and releases of the items are controlled;	7.2.2.2c)	6.3.5.2c)	**Configuration Management** 2. c) Changes to items under configuration management are controlled.
	7.2.2.2c)	6.3.5.2f)	**Configuration Management** 2. f) System releases and deliveries are controlled and approved.
Software Configuration Management 2. d) modifications and releases are made available to affected parties;	7.2.2.2d)	6.3.5.2c)	**Configuration Management** 2. c) Changes to items under configuration management are controlled.
	7.2.2.2d)	6.3.5.2f)	**Configuration Management** 2. f) System releases and deliveries are controlled and approved.
Software Configuration Management 2. e) the status of the items and modifications are recorded and reported;	7.2.2.2e)	6.3.5.2d)	**Configuration Management** 2. d) Configuration status information is available.
Software Configuration Management 2. f) the completeness and consistency of the items is ensured;	7.2.2.2f)	6.3.5.2e)	**Configuration Management** 2. e) Required configuration audits are completed.
Software Configuration Management 2. g) the storage, handling and delivery of the items are controlled.	7.2.2.2g)	6.3.5.2f)	**Configuration Management** 2. f) System releases and deliveries are controlled and approved.
7.2.3 Software Quality Assurance Process			
Software Quality Assurance 2. a) a strategy for conducting software quality assurance is developed;	7.2.3.2a)	6.3.8.2a)	**Quality Assurance** 2. a) Project quality assurance procedures are defined and implemented.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
	7.2.3.2a)	6.3.8.2b)	**Quality Assurance** 2. b) Criteria and methods for quality assurance evaluations are defined.
Software Quality Assurance 2. b) evidence of software quality assurance is produced and maintained;	7.2.3.2b)	6.3.8.2d)	**Quality Assurance** 2. d) Results of evaluations are provided to relevant stakeholders.
Software Quality Assurance 2. c) problems and/or non-conformance with requirements are identified and recorded; (*)	7.2.3.2c)	None	None of outcomes is mapped.
Software Quality Assurance 2. d) adherence of software products, processes and activities to the applicable standards, procedures and requirements is verified;	7.2.3.2d)	6.3.8.2a)	**Quality Assurance** 2. a) Project quality assurance procedures are defined and implemented.
	7.2.3.2d)	6.3.8.2c)	**Quality Assurance** 2. c) Evaluations of the project's products, services, and processes are performed consistent with quality management policies, procedures, and requirements.
	7.2.3.2d)	6.4.9.2c)	**Verification** 2. c) The system or system element is verified.
7.2.4 Software Verification Process			
Software Verification 2. a) a software verification strategy is developed and implemented; (*)	7.2.4.2a)	6.4.9.2a)	**Verification** 2. a) Constraints of verification that influence the requirements, architecture, or design are identified.
Software Verification 2. b) criteria for verification of all required software work products are identified;	7.2.4.2b)	6.4.9.2a)	**Verification** 2. a) Constraints of verification that influence the requirements, architecture, or design are identified.
	7.2.4.2b)	6.4.9.2g)	**Verification** 2. g) Traceability of the verified system elements is established.
Software Verification 2. c) required verification activities are performed;	7.2.4.2c)	6.4.9.2c)	**Verification** 2. c) The system or system element is verified.
	7.2.4.2c)	6.4.9.2g)	**Verification** 2. g) Traceability of the verified system elements is established.
Software Verification 2. d) defects are identified and recorded;	7.2.4.2d)	6.4.9.2d)	**Verification** 2. d) Data providing information for corrective actions is reported.
	7.2.4.2d)	6.4.9.2f)	**Verification** 2. f) Verification results and anomalies are identified.
Software Verification 2. e) Results of the verification activities are made available to the customer and other involved parties.	7.2.4.2e)	6.4.9.2e)	**Verification** 2. e) Objective evidence that the realized system fulfills the requirements, architecture and design is provided.
7.2.5 Software Validation Process			
Software Validation 2. a) a validation strategy is developed and implemented;	7.2.5.2a)	6.4.11.2a)	**Validation** 2. a) Validation criteria for stakeholder requirements are defined.
	7.2.5.2a)	6.4.11.2c)	**Validation** 2. c) Constraints of validation that influence the requirements, architecture, or design are identified.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Software Validation 2. b) criteria for validation of all required work products are identified;	7.2.5.2b)	6.4.11.2a)	**Validation** 2. a) Validation criteria for stakeholder requirements are defined.
	7.2.5.2b)	6.4.11.2c)	**Validation** 2. c) Constraints of validation that influence the requirements, architecture, or design are identified.
	7.2.5.2b)	6.4.11.2h)	**Validation** 2. h) Traceability of the validated system elements is established.
Software Validation 2. c) Required validation activities are performed;	7.2.5.2c)	6.4.11.2b)	**Validation** 2. b) The availability of services required by stakeholders is confirmed.
	7.2.5.2c)	6.4.11.2d)	**Validation** 2. d) The system or system element is validated.
Software Validation 2. d) problems are identified and recorded;	7.2.5.2d)	6.4.11.2f)	**Validation** 2. f) Validation results and anomalies are identified.
Software Validation 2. e) evidence is provided that the software work products as developed are suitable for their intended use;	7.2.5.2e)	6.4.11.2g)	**Validation** 2. g) Objective evidence that the realized system or system element satisfies stakeholder needs is provided.
Software Validation 2. f) results of the validation activities are made available to the customer and other involved parties;	7.2.5.2f)	6.4.11.2g)	**Validation** 2. g) Objective evidence that the realized system or system element satisfies stakeholder needs is provided.
7.2.6 Software Review Process			
Software Review 2. a) management and technical reviews are held based on the needs of the project;(*)	7.2.6.2a)	6.3.1.2d)	**Project Planning** 2. d) Plans for the execution of the project are activated.
	7.2.6.2a)	6.3.2.2b)	**Project assessment and control** 2. b) Adequacy of roles, responsibilities, accountabilities, and authorities is assessed.
	7.2.6.2a)	6.3.2.2c)	**Project assessment and control** 2. c) Adequacy of resources is assessed.
	7.2.6.2a)	6.3.2.2d)	**Project assessment and control** 2. d) Technical progress reviews are performed.
	7.2.6.2a)	6.3.8.2a)	**Quality Assurance** 2. a) Project quality assurance procedures are defined and implemented.
	7.2.6.2a)	6.3.8.2b)	**Quality Assurance** 2. b) Criteria and methods for quality assurance evaluations are defined.
	7.2.6.2a)	6.3.8.2c)	**Quality Assurance** 2. c) Evaluations of the project's products, services, and processes are performed, consistent with quality management policies, procedures, and requirements.
Software Review 2. b) the status and products of an activity of a process are evaluated through review activities;	7.2.6.2b)	6.3.2.2b)	**Project assessment and control** 2. b) Adequacy of roles, responsibilities, accountabilities, and authorities is assessed.
	7.2.6.2b)	6.3.2.2c)	**Project assessment and control** 2. c) Adequacy of resources is assessed.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
	7.2.6.2b)	6.3.2.2e)	**Project assessment and control** 2. e) Deviations in project performance from plans are investigated and analyzed.
	7.2.6.2b)	6.3.8.2c)	**Quality Assurance** 2. c) Evaluations of the project's products, services, and processes are performed, consistent with quality management policies, procedures, and requirements.
Software Review 2. c) review results are made known to all affected parties;	7.2.6.2c)	6.3.2.2a)	**Project assessment and control** 2. a) Performance measures or assessment results are available.
	7.2.6.2c)	6.3.2.2f)	**Project assessment and control** 2. f) Affected stakeholders are informed of project status.
	7.2.6.2c)	6.3.8.2d)	**Quality Assurance** 2. d) Results of evaluations are provided to relevant stakeholders.
Software Review 2. d) action items resulting from reviews are tracked to closure;	7.2.6.2d)	6.3.2.2g)	**Project assessment and control** 2. g) Corrective action is defined and directed, when project achievement is not meeting targets.
	7.2.6.2d)	6.3.8.2f)	**Quality Assurance** 2. f) Prioritized problems are treated.
Software Review 2. e) risks and problems are identified and recorded;(*)	7.2.6.2e)	6.3.2.2a)	**Project assessment and control** 2. a) Performance measures or assessment results are available.
	7.2.6.2e)	6.3.4.2a)	**Risk Management** 2. a) Risks are identified.
7.2.7 Software Audit Process			
Software Audit 2. a) an audit strategy is developed and implemented;	7.2.7.2a)	6.3.8.2a)	**Quality Assurance** 2. a) Project quality assurance procedures are defined and implemented.
	7.2.7.2a)	6.3.8.2b)	**Quality Assurance** 2. b) Criteria and methods for quality assurance evaluations are defined.
Software Audit 2. b) compliance of selected software work products and/or services or processes with requirements, plans and agreement is determined according to the audit strategy;	7.2.7.2b)	6.3.8.2c)	**Quality Assurance** 2. c) Evaluations of the project's products, services, and processes are performed, consistent with quality management policies, procedures, and requirements.
Software Audit 2. c) audits are conducted by an appropriate independent party;	7.2.7.2c)	6.3.8.2c)	**Quality Assurance** 2. c) Evaluations of the project's products, services, and processes are performed, consistent with quality management policies, procedures, and requirements.
Software Audit 2. d) problems detected during an audit are identified and communicated to those responsible for corrective action, and resolution;	7.2.7.2d)	6.3.8.2d)	**Quality Assurance** 2. d) Results of evaluations are provided to relevant stakeholders.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
7.2.8 Software Problem Resolution Process			
Software Problem Resolution 2. a) a problem management strategy is developed;	7.2.8.2a)	6.3.8.2a)	**Quality Assurance** 2. a) Project quality assurance procedures are defined and implemented.
	7.2.8.2a)	6.3.8.2b)	**Quality Assurance** 2. b) Criteria and methods for quality assurance evaluations are defined.
Software Problem Resolution 2. b) problems are recorded, identified and classified;	7.2.8.2b)	6.3.8.2f)	**Quality Assurance** 2. f) Prioritized problems are treated.
Software Problem Resolution 2. c) problems are analyzed and assessed to identify acceptable solution(s);	7.2.8.2c)	6.3.8.2f)	**Quality Assurance** 2. f) Prioritized problems are treated.
Software Problem Resolution 2. d) problem resolution is implemented;	7.2.8.2d)	6.3.8.2f)	**Quality Assurance** 2. f) Prioritized problems are treated.
Software Problem Resolution 2. e) problems are tracked to closure;	7.2.8.2e)	6.3.8.2f)	**Quality Assurance** 2. f) Prioritized problems are treated.
Software Problem Resolution 2. f) the status of all problems reported is known.	7.2.8.2f)	6.3.8.2d)	**Quality Assurance** 2. d) Results of evaluations are provided to relevant stakeholders.
7.3.1 Domain Engineering Process			
Domain Engineering 2. a) the representation forms for the domain models and the domain architectures are selected;	7.3.1.2a)	6.2.6.2a)	**Knowledge Management** 2. a) A taxonomy for the application of knowledge assets is identified.
	7.3.1.2a)	6.4.4.2d)	**Architecture Definition** 2. d) Architecture views and models of the system are developed.
Domain Engineering 2. b) the boundaries of the domain and its relationships to other domains are established;	7.3.1.2b)	6.2.6.2a)	**Knowledge Management** 2. a) A taxonomy for the application of knowledge assets is identified.
	7.3.1.2b)	6.4.4.2c)	**Architecture Definition** 2. c) Context, boundaries, and external interfaces of the system are defined.
Domain Engineering 2. c) a domain model that captures the essential common and different features, capabilities, concepts, and functions in the domain is developed;	7.3.1.2c)	6.2.6.2a)	**Knowledge Management** 2. a) A taxonomy for the application of knowledge assets is identified.
	7.3.1.2c)	6.4.4.2d)	**Architecture Definition** 2. d) Architecture views and models of the system are developed.
Domain Engineering 2. d) a domain architecture describing the family of systems within the domain, including their commonalities and variabilities is developed;	7.3.1.2d)	6.2.6.2a)	**Knowledge Management** 2. a) A taxonomy for the application of knowledge assets is identified.
	7.3.1.2d)	6.4.4.2h)	**Architecture Definition** 2. h) An architectural basis for processes throughout the life cycle is achieved.
Domain Engineering 2. e) assets belonging to the domain are specified;	7.3.1.2e)	6.2.6.2b)	**Knowledge Management** 2. b) The organizational knowledge, skills, and knowledge assets are developed or acquired.

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[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Domain Engineering 2. f) assets belonging to the domain are acquired or developed and maintained throughout their life cycles;	7.3.1.2f)	6.2.6.2b)	**Knowledge Management** 2. b) The organizational knowledge, skills, and knowledge assets are developed or acquired.
	7.3.1.2f)	6.4.13.2c)	**Maintenance** 2 c) Replacement, repaired, or revised system elements are made available.
Domain Engineering 2. g) the domain models and architectures are maintained throughout their life cycles.	7.3.1.2g)	6.2.6.2c)	**Knowledge Management** 2. c) The organizational knowledge, skills, and knowledge assets are available.
7.3.2 Reuse Asset Management Process			
Reuse Asset Management 2. a) an asset management strategy is documented;	7.3.2.2a)	6.2.6.2a)	**Knowledge Management** 2. a) A taxonomy for the application of knowledge assets is identified.
Reuse Asset Management 2. b) an asset classification scheme is established;	7.3.2.2b)	6.2.6.2a)	**Knowledge Management** 2. a) A taxonomy for the application of knowledge assets is identified.
Reuse Asset Management 2. c) Criteria for asset acceptance, certification and retirement are defined;	7.3.2.2c)	6.2.6.2b)	**Knowledge Management** 2. b) The organizational knowledge, skills, and knowledge assets are developed or acquired.
Reuse Asset Management 2. d) an asset storage and retrieval mechanism is operated;	7.3.2.2d)	6.2.6.2c)	**Knowledge Management** 2. c) The organizational knowledge, skills, and knowledge assets are available.
Reuse Asset Management 2. e) the use of assets is recorded;	7.3.2.2e)	6.2.6.2d)	**Knowledge Management** 2. d) Knowledge management usage data is gathered and analyzed.
Reuse Asset Management 2. f) changes to the assets are controlled;	7.3.2.2f)	6.2.6.2c)	**Knowledge Management** 2. c) The organizational knowledge, skills, and knowledge assets are available.
Reuse Asset Management 2. g) Users of assets are notified of problems detected, modifications made, new versions created and deletion of assets from the storage and retrieval mechanism.	7.3.2.2g)	6.2.6.2c)	**Knowledge Management** 2. c) The organizational knowledge, skills, and knowledge assets are available.
7.3.3 Reuse Program Management Process			
Reuse Program Management 2. a) the organization's reuse strategy, including its purpose, scope, goals and objectives, is defined;	7.3.3.2a)	6.2.6.2a)	**Knowledge Management** 2. a) A taxonomy for the application of knowledge assets is identified.
Reuse Program Management 2. b) the domains for potential reuse opportunities are identified;	7.3.3.2b)	6.2.6.2a)	**Knowledge Management** 2. a) A taxonomy for the application of knowledge assets is identified.
Reuse Program Management 2. c) the organization's systematic reuse capability is assessed;	7.3.3.2c)	6.2.6.2b)	**Knowledge Management** 2. b) The organizational knowledge, skills, and knowledge assets are developed or acquired.
Reuse Program Management 2. d) the reuse potential of each domain is assessed;	7.3.3.2d)	6.2.6.2b)	**Knowledge Management** 2. b) The organizational knowledge, skills, and knowledge assets are developed or acquired.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

Table 2 *(continued)*

Outcomes (ISO/IEC 12207:2008)	Sub clause	Sub clause	Outcomes (ISO/IEC/IEEE 12207:2017)
Reuse Program Management 2. e) reuse proposals are evaluated to ensure the reuse product is suitable for the proposed application;	7.3.3.2e)	6.2.6.2b)	**Knowledge Management** 2. b) The organizational knowledge, skills, and knowledge assets are developed or acquired.
Reuse Program Management 2. f) the reuse strategy is implemented in the organization;	7.3.3.2f)	6.2.6.2c)	**Knowledge Management** 2. c) The organizational knowledge, skills, and knowledge assets are available.
Reuse Program Management 2. g) feedback, communication, and notification mechanisms that operate between affected parties are established;	7.3.3.2g)	6.2.6.2d)	**Knowledge Management** 2. d) Knowledge management usage data is gathered and analyzed.
Reuse Program Management 2. h) the reuse program is monitored and evaluated.	7.3.3.2h)	6.2.6.2d)	**Knowledge Management** 2. d) Knowledge management usage data is gathered and analyzed.

[a] 6.2.2 Infrastructure Management 2.d) of ISO/IEC 12207:2008 contributes to such outcome of each technical process in clause 6.4 of ISO/IEC/IEEE 12207:2017 that includes the phrase "Any enabling systems or services needed are available".

[b] See outcomes for 7.1.1 Software Implementation Process of ISO/IEC 12207:2008, because 6.4.4 does not provide outcomes and describes 7.1.1 replaces this process to implement a software product, service or a software element of a system.

7 Activity and task-level mappings

7.1 Activity and task-level mapping from ISO/IEC/IEEE 12207:2017 to ISO/IEC 12207:2008 edition

Table 3 correlates activities and tasks required by ISO/IEC/IEEE 12207:2017 to activities and tasks found in ISO/IEC 12207:2008. The mapping indicates related activities and tasks that may be helpful in meeting the requirements of ISO/IEC/IEEE 12207:2017. Many of these activities and tasks were not required by ISO/IEC 12207:2008. Only activities and tasks using "shall" or worded in the imperative were required. There is no assumption that recommended or optional tasks from the ISO/IEC 12207:2008 are required to meet the requirements of ISO/IEC/IEEE 12207:2017. There is also no assumption that all the required activities and tasks of ISO/IEC 12207:2008 are required to fulfil the requirements of ISO/IEC/IEEE 12207:2017.

When the subclause is indicated by '6.m.n.3 x)y.z' for ISO/IEC/IEEE 12207:2017, it indicates the z-th sentence of task y of activity '6.m.n x)' in process '6.m.n'.
When the subclause is indicated by 'l.m.n.3.w.x' for ISO/IEC 12207:2008, it indicates the task x of activity 'l.m.n.3.w' in process 'l.m.n'.

When the subclause is indicated by expressions such as 'x.y-z' in the column of "Activities & tasks (ISO/IEC 12207:2008)", it indicates the z-th verb of y-th sentence in a paragraph of task x in activity 'l.m.n.3.w'.

Table 3 — Activity and task mapping from ISO/IEC/IEEE 12207:2017 to ISO/IEC 12207:2008

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.1.1 Acquisition process			
Prepare for the acquisition a)1. Define a strategy for how the acquisition will be conducted.	6.1.1.3 a)1	6.1.1.3.1.6	6.1.1 Acquisition Process- 3.1 **Acquisition preparation** 6. The acquirer shall consider options for acquisition against analysis of appropriate criteria to include risk, cost and benefits for each option. Options include: a) Purchase an off-the-shelf software product that satisfies the requirements. b) Develop the software product or obtain the software service internally. c) Develop the software product or obtain the software service through contract. d) A combination of a, b, and c above. e) Enhance an existing software product or service.
	6.1.1.3 a)1	6.1.1.3.1.7	**Acquisition preparation** 7. When an off-the-shelf software product is to be acquired, the acquirer shall ensure the following conditions are satisfied: a) The requirements for the software product are satisfied. b) The required documentation is available. c) Proprietary, usage, ownership, warranty and licensing rights are satisfied. d) Future support for the software product is planned.
	6.1.1.3 a)1	6.1.1.3.1.8	**Acquisition preparation** 8.1-1&2 The acquirer should prepare, document [and execute] an acquisition plan.
	6.1.1.3 a)1	6.1.1.3.1.8	**Acquisition preparation** 8.4 The plan should contain the following: a) Requirements for the system. b) Planned employment of the system. c) Type of contract to be employed. d) Responsibilities of the organizations involved. e) Support concept to be used. f) Risks considered as well as methods to manage the risks.
	6.1.1.3 a)1	6.1.1.3.1.9	**Acquisition preparation** 9.1-1&2 The acquirer shall define and document the acceptance strategy and conditions (criteria).
Prepare for the acquisition a)2. Prepare a request for the supply of a product or service that includes the requirements.	6.1.1.3 a)2	6.1.1.3.1.1	**Acquisition preparation** 1. The acquirer begins the acquisition process by describing a concept or a need to acquire, develop, or enhance a system, software product or software service.
	6.1.1.3 a)2	6.1.1.3.1.2	**Acquisition preparation** 2.1 The acquirer will define and analyze the system requirements.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.1.1.3 a)2	6.1.1.3.1.2	**Acquisition preparation** 2.2 The system requirements should include business, organizational and user as well as safety, security, and other criticality requirements along with related design, testing, and compliance standards and procedures.
	6.1.1.3 a)2	6.1.1.3.1.3	**Acquisition preparation** 3. The acquirer may perform the definition and analysis of software requirements by itself or may retain a supplier to perform this task.
	6.1.1.3 a)2	6.1.1.3.1.4	**Acquisition preparation** 4. If the acquirer retains a supplier to perform system requirements analysis, the acquirer will approve the analyzed requirements.
	6.1.1.3 a)2	6.1.1.3.1.5	**Acquisition preparation** 5.1 The Technical Processes (subclause 6.4) should be used to perform the tasks in subclauses 6.1.1.3.1.2 and 6.1.1.3.1.4.
	6.1.1.3 a)2	6.1.1.3.1.5	**Acquisition preparation** 5.2 The acquirer may use the Stakeholder Requirements Definition Process to establish the customer requirements.
	6.1.1.3 a)2	6.1.1.3.1.10	**Acquisition preparation** 10.1 The acquirer should document the acquisition requirements (e.g., request for proposal), the content of which depends upon the acquisition option selected in subclause 6.1.1.3.1.6.
	6.1.1.3 a)2	6.1.1.3.1.10	**Acquisition preparation** 10.2 The acquisition documentation should include, as appropriate: a) System requirements. b) Scope statement. c) Instructions for bidders. d) List of software products. e) Terms and conditions. f) Control of subcontracts. g) Technical constraints (e.g., target environment).
	6.1.1.3 a)2	6.1.1.3.1.11	**Acquisition preparation** 11.1 The acquirer should determine which processes of this International Standard are appropriate for the acquisition and specify any acquirer requirements for tailoring those processes.
Prepare for the acquisition a)2. Prepare a request for the supply of a product or service that includes the requirements.	6.1.1.3 a)2	6.1.1.3.1.11	**Acquisition preparation** 11.2 The acquirer should specify if any of the processes are to be performed by parties other than the supplier, so that suppliers may, in their proposals, define their approach to supporting the work of other parties.
	6.1.1.3 a)2	6.1.1.3.1.11	**Acquisition preparation** 11.3 The acquirer shall define the scope of those tasks that reference the contract.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.1.1.3 a)2	6.1.1.3.1.12	**Acquisition preparation** 12. The acquisition documentation shall also define the contract milestones at which the supplier's progress shall be reviewed and audited as part of monitoring the acquisition (see subclauses 7.2.6 and 7.2.7).
Advertise the acquisition and select the supplier	6.1.1.3 b)	6.1.1.3.1.8	**Acquisition preparation** 8.1-3 The acquirer should [prepare, document and] execute an acquisition plan.
Advertise the acquisition and select the supplier b)1. Communicate the request for the supply of a product or service to potential suppliers;	6.1.1.3 b)1	6.1.1.3.1.13	**Acquisition preparation** 13. The acquisition requirements should be given to the organization selected for performing the acquisition activities.
	6.1.1.3 b)1	6.1.1.3.2.1	**Acquisition advertisement** 1. The acquirer shall communicate the request for the supply of a product or service to identified suppliers.
Advertise the acquisition and select the supplier b)2. Select one or more suppliers.	6.1.1.3 b)2	6.1.1.3.3.2	**Supplier selection** 2. The acquirer should select a supplier based upon the evaluation of the suppliers' proposals, capabilities, and other factors that need to be considered.
Establish and maintain an agreement	6.1.1.3 c)	6.1.1.3.1.8	**Acquisition preparation** 8.1-3 The acquirer should [prepare, document and] execute an acquisition plan.
Establish and maintain an agreement c)1. Develop an agreement with the supplier that includes acceptance criteria.	6.1.1.3 c)1	6.1.1.3.4.1	**Contract agreement** 1.1 The acquirer may involve other parties, including potential suppliers or any necessary third parties (such as regulators), before contract award, in determining the acquirer's requirements for tailoring of this International Standard for the project.
	6.1.1.3 c)1	6.1.1.3.4.1	**Contract agreement** 1.2 In making this determination, the acquirer shall consider the effect of the tailoring requirements upon the supplier's organizationally-adopted processes.
	6.1.1.3 c)1	6.1.1.3.4.1	**Contract agreement** 1.3 The acquirer shall include or reference the tailoring requirements in the contract.
	6.1.1.3 c)1	6.1.1.3.4.2	**Contract agreement** 2.1 The acquirer shall then prepare and negotiate a contract with the supplier that addresses the acquisition requirements, including the cost and schedule, of the software product or service to be delivered.
	6.1.1.3 c)1	6.1.1.3.4.2	**Contract agreement** 2.2 The contract shall address proprietary, usage, ownership, warranty and licensing rights associated with the reusable off-the-shelf software products.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Establish and maintain an agreement c)2. Identify necessary changes to the agreement.	6.1.1.3 c)2	6.1.1.3.4.3	**Contract agreement.** 3.1 Once the contract is underway, the acquirer shall control changes to the contract through negotiation with the supplier as part of a change control mechanism.
Establish and maintain an agreement c)3. Evaluate impact of changes on the agreement.	6.1.1.3 c)3	6.1.1.3.4.3	**Contract agreement** 3.2 Changes to the contract shall be investigated for impact on project plans, costs, benefits, quality, and schedule
Establish and maintain an agreement c)4. Negotiate the agreement with the supplier.	6.1.1.3 c)4	6.1.1.3.4.2	**Contract agreement** 2.1 The acquirer shall then prepare and negotiate a contract with the supplier that addresses the acquisition requirements, including the cost and schedule, of the software product or service to be delivered.
Establish and maintain an agreement c)5. Update the agreement with the supplier, as necessary.	6.1.1.3 c)5	6.1.1.3.4.3	**Contract agreement** 3.1 Once the contract is underway, the acquirer shall control changes to the contract through negotiation with the supplier as part of a change control mechanism.
	6.1.1.3 c)5	6.1.1.3.4.3	**Contract agreement** 3.2 Changes to the contract shall be investigated for impact on project plans, costs, benefits, quality, and schedule
Monitor the agreement	6.1.1.3 d)	6.1.1.3.1.8	**Acquisition preparation** 8.1-3 The acquirer should [prepare, document and] execute an acquisition plan.
Monitor the agreement d)1. Assess the execution of the agreement.	6.1.1.3 d)1	6.1.1.3.6.2	**Acquirer acceptance** 2.1 The acquirer shall conduct acceptance review and acceptance testing of the deliverable software product or service [and shall accept it from the supplier when all acceptance conditions are satisfied.]
	6.1.1.3 d)1	6.1.1.3.5.1	**Agreement monitoring** 1.1 The acquirer shall monitor the supplier's activities in accordance with the Software Review Process (subclause 7.2.6) and the Software Audit Process (subclause 7.2.7).
	6.1.1.3 d)1	6.1.1.3.5.1	**Agreement monitoring** 1.2 The acquirer should supplement the monitoring with the Software Verification Process (subclause 7.2.4) and the Software Validation Process (subclause 7.2.5) as needed.
Monitor the agreement d)2. Provide data needed by the supplier and resolve issues in a timely manner.	6.1.1.3 d)2	6.1.1.3.5.2	**Agreement monitoring** 2. The acquirer will cooperate with the supplier to provide all necessary information in a timely manner and resolve all pending items.
Accept the product or service	6.1.1.3 e)	6.1.1.3.1.8	**Acquisition preparation** 8.1-3 The acquirer should [prepare, document and] execute an acquisition plan.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Accept the product or service e)1. Confirm that the delivered product or service complies with the agreement.	6.1.1.3 e)1	6.1.1.3.6.2	**Acquirer acceptance** 2.1 The acquirer shall conduct acceptance review and acceptance testing of the deliverable software product or service [and shall accept it from the supplier when all acceptance conditions are satisfied.]
	6.1.1.3 e)1	6.1.1.3.6.1	**Acquirer acceptance** 1. The acquirer should prepare for acceptance based on the defined acceptance strategy and criteria. The preparation of test cases, test data, test procedures, and test environment should be included. The extent of supplier involvement should be defined.
Accept the product or service e)2. Provide payment or other agreed consideration.	6.1.1.3 e)2	6.1.1.3.7.1	**Closure** 1. The acquirer shall make payment or provide other agreed consideration to the supplier for the product or service rendered.
	6.1.1.3 e)2	6.1.2.3.6.1	6.1.2 Supply Process- 3.6 **Closure** 1. The supplier shall accept and acknowledge payment or other agreed consideration.
Accept the product or service e)3. Accept the product or service from the supplier, or other party, as directed by the agreement.	6.1.1.3 e)3	6.1.1.3.6.2	**Acquirer acceptance** 2.2 The acquirer [shall conduct acceptance review and acceptance testing of the deliverable software product or service and] shall accept it from the supplier when all acceptance conditions are satisfied.
Accept the product or service e)4. Close the agreement.	6.1.1.3 e)4	None	None of activities and tasks is mapped.
6.1.2 Supply process			
Prepare for the supply a)1. Determine the existence and identity of an acquirer who has a need for a product or service.	6.1.2.3 a)1	6.1.2.3.1.1	6.1.2 Supply Process- 3.1 **Opportunity identification** 1. The supplier should determine the existence and identity of an acquirer who has, or who represents an organization or organizations having, a need for a product or service.
Prepare for the supply a)2. Define a supply strategy.	6.1.2.3 a)2	6.1.2.3.2.1	**Supplier tendering** 1. The supplier should conduct a review of requirements in the request for proposal taking into account organizational policies and other regulations. NOTE This may include supply chain management partnering which exchanges information with related suppliers and acquirers to achieve a harmonized or collective approach to common technical and commercial issues.
	6.1.2.3 a)2	6.1.2.3.2.2	**Supplier tendering** 2. The supplier should make a decision to bid or accept the contract.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Respond to a request for supply of products or services b)1. Evaluate a request for the supply of a product or service) to determine feasibility and how to respond.	6.1.2.3 b)1	6.1.2.3.4.1	**Contract execution** 1. The supplier shall conduct a review of the acquisition requirements to define the framework for managing and assuring the project and for assuring the quality of the deliverable software product or service.
Respond to a request for supply of products or services b)2. Prepare a response that satisfies the solicitation.	6.1.2.3 b)2	6.1.2.3.2.3	**Supplier tendering** 3. The supplier should prepare a proposal in response to the request for proposal.
Establish and maintain an agreement c)1. Negotiate an agreement with the acquirer that includes acceptance criteria.	6.1.2.3 c)1	6.1.2.3.3.1	**Contract agreement** 1. The supplier shall negotiate and enter into a contract with the acquirer to provide the software product or service.
Establish and maintain an agreement c)2. Identify necessary changes to the agreement.	6.1.2.3 c)2	6.1.2.3.3.2	**Contract agreement** 2. The supplier may request modification to the contract as part of the change control mechanism.
Establish and maintain an agreement c)3. Evaluate impact of changes on the agreement.	6.1.2.3 c)3	None	None of activities and tasks is mapped..
Establish and maintain an agreement c)4. Negotiate the agreement with the acquirer, as necessary.	6.1.2.3 c)4	6.1.2.3.3.1	**Contract agreement** 1. The supplier shall negotiate and enter into a contract with the acquirer to provide the software product or service.
Establish and maintain an agreement c)5. Update the agreement with the acquirer, as necessary.	6.1.2.3 c)5	6.1.2.3.3.2	**Contract agreement** 2. The supplier may request modification to the contract as part of the change control mechanism.
Execute the agreement d)1. Execute the agreement according to the established project plans.	6.1.2.3 d)1	6.1.2.3.4.6	**Contract execution** 6. The supplier shall implement and execute the project management plan(s) developed in clause 5.2.4.
	6.1.2.3 d)1	6.1.2.3.4.7	**Contract execution** 7. The supplier shall:a) Develop the software product in accordance with the Technical Processes (subclause 6.4).b) Operate the software product in accordance with the Software Operation Process (subclause 6.4.9).c) Maintain the software product in accordance with the Software Maintenance Process (subclause 6.4.10).
	6.1.2.3 d)1	6.1.2.3.4.8	**Contract execution** 8.1 The supplier shall monitor and control the progress and the quality of the software products or services of the project throughout the contracted life cycle.
	6.1.2.3 d)1	6.1.2.3.4.8	**Contract execution** 8.2 This shall be an ongoing, iterative task, which shall provide for: a) Monitoring progress of technical performance, costs, and schedules and reporting of project status. b) Problem identification, recording, analysis, and resolution.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.1.2.3 d)1	6.1.2.3.4.9	**Contract execution** 9.1 The supplier shall manage and control the subcontractors in accordance with the Acquisition Process (clause 5.1).
	6.1.2.3 d)1	6.1.2.3.4.9	**Contract execution** 9.2 The supplier shall pass down all contractual requirements necessary to ensure that the software product or service delivered to the acquirer is developed or performed in accordance with the prime-contract requirements.
	6.1.2.3 d)1	6.1.2.3.4.10	**Contract execution** 10. The supplier shall interface with the independent verification, validation, or test agent as specified in the contract and project plans.
	6.1.2.3 d)1	6.1.2.3.4.11	**Contract execution** 11. The supplier shall interface with other parties as specified in the contract and project plans.
	6.1.2.3 d)1	6.1.2.3.4.12	**Contract execution** 12. The supplier should coordinate contract review activities, interfaces, and communication with the acquirer's organization.
	6.1.2.3 d)1	6.1.2.3.4.13	**Contract execution** 13.1 The supplier shall conduct or support the informal meetings, acceptance review, acceptance testing, joint reviews, and audits with the acquirer as specified in the contract and project plans.
	6.1.2.3 d)1	6.1.2.3.4.13	**Contract execution** 13.2 The joint reviews shall be conducted in accordance with clause 6.6, audits in accordance with clause 6.7.
	6.1.2.3 d)1	6.1.2.3.4.14	**Contract execution** 14. The supplier shall perform verification and validation in accordance with subclauses 7.2.4 and 7.2.5 respectively to demonstrate that the software products or services and processes fully satisfy their respective requirements.
Execute the agreement d)1. Execute the agreement according to the established project plans.	6.1.2.3 d)1	6.1.2.3.4.16	**Contract execution** 16. The supplier shall provide the acquirer access to the supplier's and subcontractors' facilities for review of software products or services as specified in the contract and project plans.
	6.1.2.3 d)1	6.1.2.3.4.17	**Contract execution** 17. The supplier shall perform quality assurance activities in accordance with subclause 7.2.3.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Execute the agreement d)2. Assess the execution of the agreement.	6.1.2.3 d)2	6.1.2.3.4.14	**Contract execution** 14. The supplier shall perform verification and validation in accordance with subclauses 7.2.4 and 7.2.5 respectively to demonstrate that the software products or services and processes fully satisfy their respective requirements.
	6.1.2.3 d)2	6.1.2.3.4.17	**Contract execution** 17. The supplier shall perform quality assurance activities in accordance with subclause 7.2.3.
Deliver and support the product or service e)1. Deliver the product or service in accordance with the agreement criteria.	6.1.2.3 e)1	6.1.2.3.5.1	**Product/service delivery and support** 1. The supplier shall deliver the software product or service as specified in the contract.
Deliver and support the product or service e)2. Provide assistance to the acquirer in support of the delivered product or service, per the agreement.	6.1.2.3 e)2	6.1.2.3.4.15	**Contract execution** 15. The supplier shall make available to the acquirer the reports of evaluation, reviews, audits, testing, and problem resolutions as specified in the contract.
	6.1.2.3 e)2	6.1.2.3.5.2	**Product/service delivery and support** 2. The supplier shall provide assistance to the acquirer in support of the delivered software product or service as specified in the contract.
Deliver and support the product or service e)3. Accept and acknowledge payment or other agreed consideration.	6.1.2.3 e)3	6.1.2.3.6.1	**Closure** 1. The supplier shall accept and acknowledge payment or other agreed consideration.
Deliver and support the product or service e)4. Transfer the product or service to the acquirer, or other party, as directed by the agreement.	6.1.2.3 e)4	6.1.2.3.6.2	**Closure** 2. The supplier shall transfer the responsibility for the product or service to the acquirer, or other party, as directed by the agreement.
Deliver and support the product or service e)5. Close the agreement.	6.1.2.3 e)5	6.1.2.3.6.2	**Closure** 2. The supplier shall transfer the responsibility for the product or service to the acquirer, or other party, as directed by the agreement.
6.2.1 Life cycle model management process			
Establish the process a)1. Establish policies and procedures for process management and deployment that are consistent with organizational strategies.	6.2.1.3 a)1	6.1.1.3.3.1	6.1.1 Acquisition Process- 3.3 **Supplier selection** 1. The acquirer should establish a procedure for supplier selection including proposal evaluation criteria and requirements compliance weighting.
	6.2.1.3 a)1	6.2.1.3.1.1	6.2.1 Life Cycle Model Management Process- 3.1 **Process establishment** 1.1 The organization shall establish a suite of organizational processes for all software life cycle processes and life cycle models as they apply to its business activities.
	6.2.1.3 a)1	6.2.1.3.1.1	**Process establishment** 1.3 As appropriate, a process control mechanism should be established to develop, monitor, control, and improve the process(es).

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Establish the process a)1. Establish policies and procedures for process management and deployment that are consistent with organizational strategies.	6.2.1.3 a)1	6.2.1.3.2.1	**Process assessment** 1.1-1&2 The organization should **develop**, document [and apply] a process assessment procedure.
	6.2.1.3 a)1	7.1.1.3.1.1	7.1.1 Software Implementation Process- 3.1 **Software implementation strategy** 1.1 If not stipulated in the contract, the developer shall define or select a life cycle model appropriate to the scope, magnitude, and complexity of the project.
	6.2.1.3 a)1	7.1.1.3.1.1	**Software implementation strategy** 1.2 The life cycle model shall be comprised of stages and the purpose and outcomes of each stage.
	6.2.1.3 a)1	7.3.1.3.1.3	7.3.1 Domain Engineering Process- 3.1 **Process implementation** 3. The domain engineer shall establish procedures for receiving, resolving, and providing feedback to the asset manager whenever problems or change requests occur for assets developed by the domain engineer.
Establish the process a)2. Establish the processes that implement the requirements of this document and that are consistent with organizational strategies.	6.2.1.3 a)2	6.2.1.3.1.1	**Process establishment** 1.1 The organization shall establish a suite of organizational processes for all software life cycle processes and life cycle models as they apply to its business activities.
	6.2.1.3 a)2	6.2.1.3.1.1	**Process establishment** 1.2 The processes and their application to specific cases shall be documented in the organization's publications.
Establish the process a)3. Define the roles, responsibilities, accountabilities, and authorities to facilitate implementation of processes and the strategic management of life cycles.	6.2.1.3 a)3	6.2.1.3.1.1	**Process establishment** 1.1 The organization shall establish a suite of organizational processes for all software life cycle processes and life cycle models as they apply to its business activities.
Establish the process a)4. Define business criteria that control progression through the life cycle.	6.2.1.3 a)4	None	None of activities and tasks is mapped.
Establish the process a)5. Establish standard life cycle models for the organization that are comprised of stages and define the purpose and outcomes for each stage.	6.2.1.3 a)5	6.2.1.3.1.1	**Process establishment** 1.1 The organization shall establish a suite of organizational processes for all software life cycle processes and life cycle models as they apply to its business activities.
Assess the process b)1. Monitor process execution across the organization.	6.2.1.3 b).1	6.2.1.3.2.1	**Process assessment** 1.1-3 The organization should [develop,] [document] and apply a process assessment procedure.
	6.2.1.3 b)1	6.2.1.3.2.1	**Process assessment** 1.2 Assessment records should be produced and maintained.
	6.2.1.3 b)1	6.2.1.3.2.2	**Process assessment** 2.1 The organization shall plan [and carry out] reviews of the processes at appropriate intervals to ensure their continuing suitability and effectiveness in the light of assessment results.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.2.1.3 b)1	6.2.1.3.3.3	**Process improvement** 3.1 Quality cost data should be collected, maintained, and used to improve the organization's processes as a management activity.
	6.2.1.3 b)1	6.2.1.3.3.3	**Process improvement** 3.2 These data shall serve the purpose of establishing the cost of both the prevention and resolution of problems and non-conformity in software products and services.
Assess the process b)2. Conduct periodic reviews of the life cycle models used by the projects.	6.2.1.3 b)2	6.2.1.3.2.2	**Process assessment** 2 The organization shall plan and carry out reviews of the processes at appropriate intervals to ensure their continuing suitability and effectiveness in the light of assessment results.
	6.2.1.3 b)2	6.2.1.3.3.2	**Process improvement** 2.1 Historical, technical, and evaluation data should be collected and analyzed to gain an understanding of the strengths and weaknesses of the employed processes.
Assess the process b)3. Identify improvement opportunities from assessment results.	6.2.1.3 b)3	6.2.1.3.3.1	**Process improvement** 1.1 The organization shall effect such improvements to its processes as it determines to be necessary as a result of process assessment and review.
	6.2.1.3 b)3	6.2.1.3.3.2	**Process improvement** 2.2 These analyses should be used as feedback to improve these processes, to recommend changes in the direction of the projects (or subsequent projects), and to determine technology advancement needs.
Improve the process c)1. Prioritize and plan improvement opportunities.	6.2.1.3 c)1	6.2.1.3.3.2	**Process improvement** 2.2 These analyses should be used as feedback to improve these processes, to recommend changes in the direction of the projects (or subsequent projects), and to determine technology advancement needs.
Improve the process c)2. Implement improvement opportunities and inform relevant stakeholders.	6.2.1.3 c)2	6.2.1.3.3.1	**Process improvement** 1.1 The organization shall effect such improvements to its processes as it determines to be necessary as a result of process assessment and review.
	6.2.1.3 c)2	6.2.1.3.3.1	**Process improvement** 1.2 Process documentation should be updated to reflect improvement in the organizational processes.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.2.2 Infrastructure Management process			
Establish the infrastructure a)1. Define project infrastructure requirements.	6.2.2.3 a)1	6.2.2.3.1.1	6.2.2 Infrastructure Management Process- 3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
	6.2.2.3 a)1	6.2.2.3.2.1	**Establishment of the infrastructure** 1.1-1&2 The configuration of the infrastructure should be planned and documented. 1.2 Functionality, performance, safety, security, availability, space requirements, equipment, costs, and time constraints should be considered.
Establish the infrastructure a)2. Identify, obtain and provide infrastructure resources and services that are needed to implement and support projects.	6.2.2.3 a)2	6.2.2.3.1.2	**Process implementation** 2.1-1&2 The establishment of the infrastructure should be planned and documented.
	6.2.2.3 a)2	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Maintain the infrastructure b)1. Evaluate the degree to which delivered infrastructure resources satisfy project needs.	6.2.2.3 b)1	6.2.2.3.3.1	**Maintenance of the infrastructure** 1.1 The infrastructure shall be maintained, monitored, and modified as necessary to ensure that it continues to satisfy the requirements of the process employing this process.
Maintain the infrastructure b)2. Identify and provide improvements or changes to the infrastructure resources as the project requirements change.	6.2.2.3 b)2	6.2.2.3.3.1	**Maintenance of the infrastructure** 1.1 The infrastructure shall be maintained, monitored, and modified as necessary to ensure that it continues to satisfy the requirements of the process employing this process.
	6.2.2.3 b)2	6.2.2.3.3.1	**Maintenance of the infrastructure** 1.2 As part of maintaining the infrastructure, the extent to which the infrastructure is under configuration management shall be defined.
6.2.3 Portfolio Management process			
Define and authorize projects a)1. Identify potential new or modified capabilities or missions.	6.2.3.3 a)1	6.2.3.3.1.1	6.2.3 Project Portfolio Management Process- 3.1 **Project initiation** 1. The organization shall identify, prioritize, select and establish new business opportunities, ventures or undertakings in a manner that is consistent with the business strategy and action plans of the organization.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Define and authorize projects a)2. Prioritize, select and establish new business opportunities, ventures or undertakings.	6.2.3.3 a)2	6.2.3.3.1.1	**Project initiation** 1. The organization shall identify, prioritize, select and establish new business opportunities, ventures or undertakings in a manner that is consistent with the business strategy and action plans of the organization.
Define and authorize projects a)3. Define projects, accountabilities and authorities.	6.2.3.3 a)3	6.2.3.3.1.2	**Project initiation** 2. The organization shall define accountabilities and authorities for each project.
Define and authorize projects a)4. Identify the expected goals, objectives, and outcomes of each project.	6.2.3.3 a)4	6.2.3.3.1.3	**Project initiation** 3. The organization shall identify the expected outcomes of the projects.
Define and authorize projects a)5. Identify and allocate resources for the achievement of project goals and objectives.	6.2.3.3 a)5	6.2.3.3.1.4	**Project initiation** 4. The organization shall allocate resources for the achievement of project objectives.
Define and authorize projects a)6. Identify multi-project interfaces and dependencies to be managed or supported by each project.	6.2.3.3 a)6	6.2.3.3.1.5	**Project initiation** 5. The organization shall identify any multi-project interfaces that must be managed or supported by the project.
Define and authorize projects a)7. Specify the project reporting requirements and review milestones that govern the execution of each project.	6.2.3.3 a)7	6.2.3.3.1.6	**Project initiation** 6. The organization shall specify the project reporting requirements and review milestones that will govern the execution of the project.
Define and authorize projects a)8. Authorize each project to commence execution of project plans.	6.2.3.3 a)8	6.2.3.3.1.7	**Project initiation** 7. The organization shall authorize the project to commence execution of approved project plans, including the technical plans.
	6.2.3.3 a)8	6.3.1.3.3.1	**Project activation** 1. The manager shall obtain authorization for the project.
Evaluate the portfolio of projects b)1. Evaluate projects to confirm ongoing viability.	6.2.3.3 b)1	6.2.3.3.2.1	**Portfolio evaluation** 1. The organization shall evaluate ongoing projects to confirm that: a) Projects are making progress towards achieving established goals. b) Projects are complying with project directives. c) Projects are being conducted according to system life cycle plans and procedures. d) Projects remain viable, as indicated by, for example, continuing need for the service, practicable product implementation, acceptable investment benefits.
	6.2.3.3 b)1	6.3.2.3.3.2	**Project assessment** 2. The manager shall assess the evaluation results of the software products, activities, and tasks completed during the execution of the project for achievement of the objectives and completion of the plans.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.2.3.3 b)1	7.3.3.3.5.2	7.3.3 Reuse Program Management Process- 3.5 **Execution and Control** 2. The reuse program administrator shall monitor the progress of the reuse program against the organization's reuse strategy, and make any necessary adjustments to the plan to realize the strategy.
	6.2.3.3 b)1	7.3.3.3.5.4	**Execution and Control** 4. The reuse program administrator shall periodically reaffirm management sponsorship, support, and commitment to the reuse program.
Evaluate the portfolio of projects b)2. Act to continue or redirect projects that are satisfactorily progressing or can be expected to progress satisfactorily by appropriate redirection.	6.2.3.3 b)2	6.2.3.3.2.2	**Portfolio evaluation** 2. The organization shall act to continue or redirect projects that are satisfactorily progressing or can be expected to progress satisfactorily by appropriate redirection.
Terminate projects c)1. Where agreements permit, act to cancel or suspend projects whose disadvantages or risks to the organization outweigh the benefits of continued investments.	6.2.3.3 c)1	6.2.3.3.3.1	**Project closure** 1. The organization shall act to cancel or suspend projects whose disadvantages or risks to the organization outweigh the benefits of continued investments, where agreements permit this.
Terminate projects c)2. After completion of the agreement for products and services, act to close the projects.	6.2.3.3 c)2	6.2.3.3.3.2	**Project closure** 2. After completion of the agreement for products and services, the organization shall act to close the project per organizational policies and procedures and the agreement.
	6.2.3.3 c)2	6.3.2.3.4.1	6.3.2 Project Assessment and Control Process- 3.4 **Project closure** 1. When all software products, activities, and tasks are completed, the manager shall determine whether the project is complete, taking into account the criteria as specified in the contract or as part of organization's procedure.
6.2.4 Human Resource Management process			
Identify skills a)1. Identify skill needs based on current and expected projects.	6.2.4.3 a)1	6.2.4.3.1.1	6.2.4 Human Resource Management Process- 3.1 **Skill identification** 1.1 A review of the organization and project requirements shall be conducted to establish and make timely provision for acquiring or developing the resources and skills required by the management and technical staff.
	6.2.4.3 a)1	6.2.4.3.1.2	**Skill identification** 2. The types and levels of training and knowledge needed to satisfy organization and project requirements shall be determined.
Identify skills a)2. Identify and record skills of personnel.	6.2.4.3 a)2	6.2.4.3.3.5	**Skill acquisition and provision** 5. Maintain adequate records of staff performance including information on skills, training completed, and performance evaluations.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Develop skills b)1. Establish skills development strategy.	6.2.4.3 b)1	6.2.4.3.1.1	**Skill identification** 1.1 A review of the organization and project requirements shall be conducted to establish and make timely provision for acquiring or developing the resources and skills required by the management and technical staff.
	6.2.4.3 b)1	6.2.4.3.1.1	**Skill identification** 1.2 These needs may be met through training, recruitment or other staff development mechanisms.
	6.2.4.3 b)1	6.2.4.3.1.2	**Skill identification** 2. The types and levels of training and knowledge needed to satisfy organization and project requirements shall be determined.
	6.2.4.3 b)1	6.2.4.3.2.1	**Skill development** 1.1-1&2 A training plan, addressing implementation schedules, resource requirements, and training needs, should be developed and documented.
	6.2.4.3 b)1	6.2.4.3.3.2	**Skill acquisition and provision** 2. Define objective criteria that can be used to evaluate staff performance.
Develop skills b)2. Obtain or develop training, education or mentoring resources.	6.2.4.3 b)2	6.2.4.3.2.2	**Skill development** 2. Training manuals, including presentation materials used in providing training should be developed or acquired.
Develop skills b)3. Provide planned skill development.	6.2.4.3 b)3	6.2.4.3.2.3	**Skill development** 3.1 The training plan shall be implemented to provide training to personnel.
Develop skills b)4. Maintain records of skill development.	6.2.4.3 b)4	6.2.4.3.2.3	**Skill development** 3.2 Training records should be maintained.
	6.2.4.3 b)4	6.2.4.3.3.5	**Skill acquisition and provision** 5. Maintain adequate records of staff performance including information on skills, training completed, and performance evaluations.
Acquire and provide skills c)1. Obtain qualified personnel when skill deficits are identified.	6.2.4.3 c)1	6.2.4.3.3.1	**Skill acquisition and provision** 1.1 Establish a systematic program for recruitment of staff qualified to meet the needs of the organization and projects.
Acquire and provide skills c)2. Maintain and manage the pool of skilled personnel necessary to staff ongoing projects.	6.2.4.3 c)2	6.2.4.3.3.1	**Skill acquisition and provision** 1.1 Establish a systematic program for recruitment of staff qualified to meet the needs of the organization and projects.
Acquire and provide skills c)3. Make project assignments based on project and staff-development needs.	6.2.4.3 c)3	6.2.4.3.3.6	**Skill acquisition and provision** 6.1 Define the organization's and project's need for project teams.
	6.2.4.3 c)3	6.2.4.3.3.6	**Skill acquisition and provision** 6.2 Define team structure and operating rules.
	6.2.4.3 c)3	6.2.4.3.3.8	**Skill acquisition and provision** 8. It should be ensured that the right mix and categories of appropriately trained personnel are available for the planned activities and tasks in a timely manner.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Acquire and provide skills c)4. Motivate personnel, e.g. , through career development and reward mechanisms.	6.2.4.3 c)4	6.2.4.3.3.1	**Skill acquisition and provision** 1.2 Provide opportunities for the career development of existing staff.
	6.2.4.3 c)4	6.2.4.3.3.3	**Skill acquisition and provision** 3. Evaluate the performance of the staff in respect of their contributions to the goals of the organization or project.
	6.2.4.3 c)4	6.2.4.3.3.4	**Skill acquisition and provision** 4. Ensure that feedback is provided to the staff on the results of any evaluations performed.
	6.2.4.3 c)4	6.2.4.3.3.7	**Skill acquisition and provision** 7. Empower teams to perform their role by ensuring the teams have: a) An understanding of their role on the project. b) A shared vision or sense of common interests on the success of the project. c) Appropriate mechanisms or facilities for communication and interactions among teams. d) Support from appropriate management to accomplish project requirements.
Acquire and provide skills c)5. Control multi-project management interfaces to resolve personnel conflicts.	6.2.4.3 c)5	6.2.4.3.3.6	**Skill acquisition and provision** 6.1 Define the organization's and project's need for project teams. 6.2 Define team structure and operating rules. NOTE Conflicts in multi-project resource demands should be resolved.
6.2.5 Quality Management process			
Plan quality management a)1. Establish quality management policies, objectives, and procedures.	6.2.5.3 a)1	6.2.5.3.1.1	6.2.5 Quality Management Process- 3.1 **Quality management** 1. The organization shall establish quality management policies, standards and procedures.
Plan quality management a)2. Define responsibilities and authority for implementation of quality management.	6.2.5.3 a)2	6.2.5.3.1.3	**Quality management** 3. The organization shall define responsibilities and authority for implementation of quality management.
Plan quality management a)3. Define quality evaluation criteria and methods.	6.2.5.3 a)3	6.2.5.3.1.2	**Quality management** 2. The organization shall establish organization quality management goals and objectives based on business strategy for customer satisfaction.
Plan quality management a)4. Provide resources and information for quality management.	6.2.5.3 a)4	None	None of activities and tasks is mapped..
Evaluate quality management b)1. Gather and analyze quality assurance evaluation results, in accordance with the defined criteria.	6.2.5.3 b)1	None	None of activities and tasks is mapped..
Evaluate quality management b)2. Assess customer satisfaction.	6.2.5.3 b)2	6.2.5.3.1.4	**Quality management** 4. The organization shall assess customer satisfaction and report.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Evaluate quality management b)3. Conduct periodic reviews of project Quality Assurance activities for compliance with the Quality Management policies, objectives, and procedures.	6.2.5.3 b)3	6.2.1.3.3.3	6.2.1 Life Cycle Model Management Process- **Process improvement** 3.1 Quality cost data should be collected, maintained, and used to improve the organization's processes as a management activity.
	6.2.5.3 b)3	6.2.5.3.1.5	**Quality management** 5 The organization shall conduct periodic reviews of project quality plans. NOTE Assure that quality objectives based on the stakeholder requirements are established for each project.
Evaluate quality management b)4. Monitor the status of quality improvements on processes, products, and services.	6.2.5.3 b)4	6.2.5.3.1.6	**Quality management** 6. The organization shall monitor the status of quality improvements on products and services.
Perform corrective and preventive action c)1. Plan corrective actions when quality management objectives are not achieved.	6.2.5.3 c)1	6.2.5.3.2.1	**Quality management corrective action** 1. The organization shall take corrective actions when quality management goals are not achieved.
Perform corrective and preventive action c)2. Plan preventive actions when there is a sufficient risk that quality management objectives will not be achieved.	6.2.5.3 c)2	None	None of activities and tasks is mapped.
Perform corrective and preventive action c)3. Monitor corrective and preventive actions to completion and inform relevant stakeholders.	6.2.5.3 c)3	6.2.5.3.2.2	**Quality management corrective action** 2. The organization shall implement corrective actions and communicate results through the organization.
6.2.6 Knowledge Management process			
Plan knowledge management a)1. Define the knowledge management strategy.	6.2.6.3 a)1	6.2.4.3.4.1	6.2.4 Human Resource Management Process- 3.4 **Knowledge Management** 1.1 The organization shall plan the requirements for managing the organization's knowledge assets.
	6.2.6.3 a)1	6.2.4.3.4.1	**Knowledge Management** 1.2 The planning shall include the definition of the infrastructure and training to support the contributors and the users of the organization's knowledge assets, the classification schema for the assets and the asset criteria.
	6.2.6.3 a)1	6.2.4.3.4.3	6.2.4 Human Resource Management Process- 3.4 **Knowledge Management** 3.1 The organization shall establish a mechanism to support the exchange of information between the experts and the flow of expert information to the organization's projects.
	6.2.6.3 a)1	6.2.4.3.4.3	**Knowledge Management** 3.2 The mechanism shall support the organization's access, storage and retrieval requirements.,

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.2.6.3 a)1	7.3.1.3.1.1	7.3.1 Domain Engineering Process- 3.1 **Process implementation** 1.1-1 The domain engineer shall create [and execute] a domain engineering plan.
	6.2.6.3 a)1	7.3.1.3.1.1	**Process implementation** 1.2 The domain engineer shall establish procedures for receiving, resolving, and providing feedback to the asset manager whenever problems or change requests occur for assets developed by the domain engineer.
	6.2.6.3 a)1	7.3.2.3.1.1	7.3.2 Reuse Asset Management Process- 3.1 **Process implementation** 1. The asset manager shall create an asset management plan to define the resources and procedures for managing assets.
	6.2.6.3 a)1	7.3.3.3.1.1	7.3.3 Reuse Program Management Process- 3.1 **Initiation** 1 The reuse program for an organization shall be initiated by establishing the organization's reuse strategy that includes its reuse goals, purposes, objectives, and scope.
	6.2.6.3 a)1	7.3.3.3.1.2	**Initiation** 2 A reuse sponsor should be named.
	6.2.6.3 a)1	7.3.3.3.1.3	**Initiation** 3 Reuse program participants shall be identified and their roles shall be assigned.
	6.2.6.3 a)1	7.3.3.3.1.4	**Initiation** 4. A reuse steering function shall be established to assume the authority and responsibility for the organization's reuse program.
	6.2.6.3 a)1	7.3.3.3.1.5	**Initiation** 5. A reuse program support function shall be established.
	6.2.6.3 a)1	7.3.3.3.4.1	7.3.3 Reuse Program Management Process- 3.4 **Planning** 1 A reuse program implementation plan shall be created, documented, and maintained to define the resources and procedures for implementing a reuse program.
	6.2.6.3 a)1	7.3.3.3.4.2	**Planning** 2 The plan shall be reviewed and evaluated for completeness, feasibility of implementation, and ability to realize the organization's reuse strategy.
	6.2.6.3 a)1	7.3.3.3.4.3	**Planning** 3 Approval and support for the reuse program implementation plan shall be obtained from the reuse steering function, and the appropriate managers.
Plan knowledge management a)1. Define the knowledge management strategy.	6.2.6.3 a)1	7.3.3.3.4.4	**Planning** 4.1 The reuse program administrator shall conduct review(s) in accordance with the Software Review Process. 4.2 Members of the reuse steering function and the appropriate managers shall be included in the reviews

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Plan knowledge management a)2. Identify the knowledge, skills, and knowledge assets to be managed.	6.2.6.3 a)2	7.3.1.3.2.2	**Domain analysis** 2. The domain engineer shall identify the current and anticipated needs of stakeholders of software products within this domain.
Plan knowledge management a)3. Identify projects that can benefit from the application of the knowledge, skills, and knowledge assets.	6.2.6.3 a)3	None	None of activities and tasks is mapped..
Share knowledge and skills throughout the organization b)1. Establish and maintain a classification for capturing and sharing knowledge and skills across the organization.	6.2.6.3 b)1	6.2.4.3.4.2	**Knowledge Management** 2.2 The network shall contain the identification of the organization's experts, a list of their area of expertise and the identification of available information within a classification schema, e.g., knowledge area.
Share knowledge and skills throughout the organization b)2. Capture or acquire knowledge and skills.	6.2.6.3 b)2	6.2.4.3.4.2	**Knowledge Management** 2.1 The organization shall establish a network of experts within the organization.
Share knowledge and skills throughout the organization b)3. Share knowledge and skills across the organization.	6.2.6.3 b)3	6.2.4.3.4.2	**Knowledge Management** 2.3 The organization shall ensure that the network is maintained current.
Share knowledge assets throughout the organization c)1. Establish a taxonomy to organize knowledge assets.	6.2.6.3 c)1	7.3.1.3.1.2	**Process implementation** 2. The domain engineer shall select the form(s) of representation to be used for domain architectures and models.
	6.2.6.3 c)1	7.3.1.3.2.1	**Domain analysis** 1. The domain engineer shall define the boundaries of the domain and the relationships between this domain and other domains.
	6.2.6.3 c)1	7.3.1.3.2.4	**Domain analysis** 4. The domain engineer shall construct a vocabulary that provides the terminology to describe the important domain concepts and the relationships among similar or common assets of the domain.
	6.2.6.3 c)1	7.3.1.3.2.5	**Domain analysis** 5.1-1&2 The domain engineer shall **classify** and **document** the domain models.
	6.2.6.3 c)1	7.3.1.3.4.2	**Asset provision** 2. The domain engineer shall document and classify the asset.
	6.2.6.3 c)1	7.3.2.3.2.2	**Asset storage and retrieval definition** 2. The asset manager should develop, document, and maintain a classification scheme to be used in classifying the assets.
	6.2.6.3 c)1	7.3.2.3.3.3	**Asset management and control** 3. The asset shall be classified in accordance with the reuse classification scheme, if any exists.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Share knowledge assets throughout the organization c)1. Establish a taxonomy to organize knowledge assets.	6.2.6.3 c)1	7.3.3.3.2.1	**Domain identification** 1. The reuse program administrator, aided by the appropriate manager, domain engineers, users, and software developers, shall identify and document the domains in which to investigate reuse opportunities or in which the organization intends to practice reuse.
Share knowledge assets throughout the organization c)2. Develop or acquire knowledge assets.	6.2.6.3 c)2	6.2.4.3.4.2	**Knowledge Management** 2.2 The network shall contain the identification of the organization's experts, a list of their area of expertise and the identification of available information within a classification schema, e.g., knowledge area.
	6.2.6.3 c)2	6.2.4.3.4.3	**Knowledge Management** 3.1 The organization shall establish a mechanism to support the exchange of information between the experts and the flow of expert information to the organization's projects.
	6.2.6.3 c)2	6.2.4.3.4.4	**Knowledge Management** 4. The organization shall perform configuration management of assets in accordance with the Configuration Management Process specified in subclause 6.4.2.
	6.2.6.3 c)2	6.2.4.3.4.5	**Knowledge Management** 5. The organizations shall capture and maintain information for access by the organization per the plan.
	6.2.6.3 c)2	6.2.4.3.4.2	**Knowledge Management** 2.1 The organization shall establish a network of experts within the organization.
	6.2.6.3 c)2	6.2.4.3.4.3	**Knowledge Management** 3.2 The mechanism shall support the organization's access, storage and retrieval requirements.
	6.2.6.3 c)2	7.3.1.3.2.3	**Domain analysis** 3. The domain engineer shall build the domain models using the representation forms selected in the Process Implementation Activity for this process.
	6.2.6.3 c)2	7.3.1.3.2.8	**Domain analysis** 8. The domain engineer shall submit domain models to the asset manager.
	6.2.6.3 c)2	7.3.1.3.3.1	**Domain design** 1.1-1&2 The domain engineer shall create and document the domain architecture, consistent with the domain model and following the organization's standards.
	6.2.6.3 c)2	7.3.1.3.3.3	**Domain design** 3.1-1&2 For each entity selected to be designed for reuse, the domain engineer shall develop and document an asset specification.
	6.2.6.3 c)2	7.3.1.3.3.6	**Domain design** 6. The domain engineer shall submit the domain architecture to the asset manager.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.2.6.3 c)2	7.3.1.3.4.1	**Asset provision** 1. The domain engineer shall obtain the asset by acquisition or by development.
Share knowledge assets throughout the organization c)2. Develop or acquire knowledge assets.	6.2.6.3 c)2	7.3.2.3.2.1	**Asset storage and retrieval definition** 1. The asset manager shall implement and maintain an asset storage and retrieval mechanism.
Share knowledge assets throughout the organization c)3. Share knowledge assets across the organization.	6.2.6.3 c)3	7.3.1.3.4.5	**Asset provision** 5. The domain engineer shall submit the asset to the asset manager.
	6.2.6.3 c)3	7.3.2.3.3.2	**Asset management and control** 2. For each asset accepted, it shall be made available for reuse through the asset storage and retrieval mechanism.
	6.2.6.3 c)3	7.3.2.3.3.5	**Asset management and control** 5. The asset manager shall keep track of each reuse of the asset and report to the domain engineer information about actual reuses of the asset.
	6.2.6.3 c)3	7.3.2.3.3.8	**Asset management and control** 8. The asset manager shall notify all asset reusers, and the domain engineer, of the problems detected in the asset, modifications made to the asset, new versions of the asset, and deletion of the asset from the asset storage and retrieval mechanism.
	6.2.6.3 c)3	7.3.3.3.5.4	**Execution and Control** 4. The reuse program administrator shall periodically reaffirm management sponsorship, support, and commitment to the reuse program.
Manage knowledge, skills, and knowledge assets d)1. Maintain knowledge, skills, and knowledge assets.	6.2.6.3 d)1	6.2.4.3.4.2	**Knowledge Management** 2.3 The organization shall ensure that the network is maintained current.
	6.2.6.3 d)1	7.3.1.3.2.6	**Domain analysis** 6. The domain engineer shall evaluate the domain models and domain vocabulary in accordance with the provisions of the modelling technique selected and in accordance with the organization's asset acceptance and certification procedures.
	6.2.6.3 d)1	7.3.1.3.2.7	**Domain analysis** 7.1 The domain engineer shall conduct domain analysis review(s). 7.2 Software developers, asset managers, domain experts, and users shall be included in the reviews.
	6.2.6.3 d)1	7.3.1.3.3.2	**Domain design** 2. The domain architecture shall be evaluated in accordance with the provisions of the architecture design technique selected and the organization's asset acceptance and certification procedures.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.2.6.3 d)1	7.3.1.3.3.4	**Domain design** 4. For each asset specified, the specification shall be evaluated in accordance with the organization's asset acceptance and certification procedures.
	6.2.6.3 d)1	7.3.1.3.3.5	**Domain design** 5.1 The domain engineer shall conduct domain design review(s). 5.2 Software developers, domain experts, and asset managers shall be included in the reviews.
	6.2.6.3 d)1	7.3.1.3.4.3	**Asset provision** 3. The domain engineer shall evaluate the asset in accordance with the organization's asset acceptance and certification procedures.
	6.2.6.3 d)1	7.3.1.3.4.4	**Asset provision** 4.1 The domain engineer shall conduct asset review(s). 4.2 Software developers and asset managers shall be included in the reviews.
	6.2.6.3 d)1	7.3.2.3.1.2	**Process implementation** 2. The asset manager shall execute the (asset management) plan.
	6.2.6.3 d)1	7.3.2.3.1.3	**Process implementation** 3.1 The asset management plan shall be reviewed in accordance with the Software Review Process. 3.2 Domain engineers and reuse program administrators shall be included in the review.
	6.2.6.3 d)1	7.3.2.3.2.3	**Asset storage and retrieval definition** 3.1 The asset manager shall conduct review(s) of the asset storage and retrieval mechanism in accordance with the Software Review Process. 3.2 Reuse program administrators and domain engineers shall be included in the review(s).
	6.2.6.3 d)1	7.3.2.3.3.1	**Asset management and control** 1. For each asset submitted to the asset manager, the asset shall be evaluated based on the asset acceptance and certification criteria.
	6.2.6.3 d)1	7.3.2.3.3.4	**Asset management and control** 4. The asset manager shall perform configuration management for the asset using the Software Configuration Management Process.
	6.2.6.3 d)1	7.3.3.3.2.2	**Domain identification** 2. The reuse program administrator, aided by the appropriate managers, domain engineers, users, and software developers, shall evaluate the domains to assure that they accurately reflect the organization's reuse strategy.
	6.2.6.3 d)1	7.3.3.3.2.3	**Domain identification** 3.1 The reuse program administrator shall conduct reviews in accordance with the Software Review Process. 3.2 Software developers, domain engineers, and users shall be included in the reviews.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Manage knowledge, skills, and knowledge assets d)1. Maintain knowledge, skills, and knowledge assets.	6.2.6.3 d)1	7.3.3.3.6.3	**Review and evaluation** 3 The reuse program administrator shall recommend and make changes to the reuse program, expand the reuse program, and improve the reuse program in accordance.
Manage knowledge, skills, and knowledge assets d)2. Monitor and record the reuse of knowledge, skills, and knowledge assets.	6.2.6.3 d)2	7.3.1.3.5.1	**Asset maintenance** 1. When analyzing requests for asset modification and choosing implementation options, the domain engineer shall consider: a) Conformance with the domain models and the domain architecture; b) Impact on the systems and software products that use the asset; c) Impact on future users of the asset; d) Impact on the reusability of the asset.
	6.2.6.3 d)2	7.3.2.3.3.6	**Asset management and control** 6. The asset manager shall forward asset modification requests and problem reports received from asset reusers to the domain engineer for review and correction/modification plans and actions.
	6.2.6.3 d)2	7.3.2.3.3.7	**Asset management and control** 7. The asset manager shall monitor and record these asset requests/reports and the subsequent actions taken.
	6.2.6.3 d)2	7.3.3.3.5.2	**Execution and Control** 2 The reuse program administrator shall monitor the progress of the reuse program against the organization's reuse strategy, and make any necessary adjustments to the plan to realize the strategy.
	6.2.6.3 d)2	7.3.3.3.5.3	**Execution and Control** 3 Problems and non-conformances that occur during the execution of the reuse program implementation plan shall be recorded and resolved.
Manage knowledge, skills, and knowledge assets d)3. Periodically reassess the currency of technology and market needs for the knowledge assets.	6.2.6.3 d)3	7.3.2.3.3.9	**Asset management and control** 9. The asset manager shall retire assets from the asset storage and retrieval mechanism according to the asset retirement procedures and criteria.
	6.2.6.3 d)3	7.3.3.3.3.1	**Reuse assessment** 1 The reuse program administrator shall assess the organization's systematic reuse capability.
	6.2.6.3 d)3	7.3.3.3.3.2	**Reuse assessment** 2 The reuse program administrator shall assess each domain being considered for reuse to determine the potential for reuse success in the domain.
	6.2.6.3 d)3	7.3.3.3.3.3	**Reuse assessment** 3 The reuse program administrator shall make recommendations for refining the organization's reuse strategy and reuse program implementation plan based on the results of the reuse assessments.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.2.6.3 d)3	7.3.3.3.3.4	**Reuse assessment** 4 The reuse program administrator, in conjunction with the appropriate acquirers, suppliers, developers, operators, maintainers, asset managers, and domain engineers, shall incrementally improve the skills, technology, reuse processes, organizational structure, and metrics that together comprise the reuse infrastructure.
	6.2.6.3 d)3	7.3.3.3.6.1	**Review and evaluation** 1 The reuse program administrator shall periodically assess the reuse program for achievement of the organization's reuse strategy, and the continued suitability and effectiveness of the reuse program.
	6.2.6.3 d)3	7.3.3.3.6.2	**Review and evaluation** 2 The reuse program administrator shall provide assessment results and lessons learned to the reuse steering function, and to the appropriate managers.
6.3.1 Project Planning process			
Define the project a)1. Identify the project objectives and constraints.	6.3.1.3 a)1	6.1.1.3.1.8	6.1.1 Acquisition Process-3.1 **Acquisition preparation** 8.4 The plan should contain the following: a) Requirements for the system .b) Planned employment of the system. c) Type of contract to be employed. d) Responsibilities of the organizations involved. e) Support concept to be used. f) Risks considered as well as methods to manage the risks.
	6.3.1.3 a)1	6.3.1.3.1.1	6.3.1 Project Planning Process- 3.1 **Project initiation** 1. The manager shall establish the requirements of the project to be undertaken.
	6.3.1.3 a)1	6.3.1.3.1.2	**Project initiation** 2. Once the project requirements are established, the manager shall establish the feasibility of the project by checking that the resources (personnel, materials, technology, and environment) required to execute and manage the project are available, adequate, and appropriate and that the timescales to completion are achievable.
	6.3.1.3 a)1	6.3.1.3.1.3	**Project initiation** 3. As necessary, and by agreement of all parties concerned, the requirements of the project may be modified at this point to achieve the completion criteria.
Define the project a)2. Define the project scope as established in the agreement.	6.3.1.3 a)2	6.2.3.3.1.3	6.2.3 Project Portfolio Management Process- 3.1 **Project initiation** 3. The organization shall identify the expected outcomes of the projects.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Define the project a)3. Define and maintain a life cycle model that is comprised of stages using the defined life cycle models of the organization.	6.3.1.3 a)3	6.1.2.3.4.2	6.1.2 Supply Process- 3.4 **Contract execution** 2.1 If not stipulated in the contract, the supplier shall define or select a software life cycle model appropriate to the scope, magnitude, and complexity of the project.
	6.3.1.3 a)3	6.1.2.3.4.2	**Contract execution** 2.2 The life cycle model shall be comprised of stages and the purpose and outcomes of each stage.
	6.3.1.3 a)3	6.1.2.3.4.2	**Contract execution** 2.3 The processes, activities, and tasks shall be selected and mapped onto the life cycle model.
	6.3.1.3 a)3	6.3.1.3.2.1	**Project planning** 1.1 The manager shall prepare the plans for execution of the project.
	6.3.1.3 a)3	6.3.1.3.2.1	**Project planning** 1.3 These plans shall include, but are not limited to, the following: a) Schedules for the timely completion of tasks. b) Estimation of effort. c) Adequate resources needed to execute the tasks. d) Allocation of tasks. e) Assignment of responsibilities. f) Quantification of risks associated with the tasks or the process itself. g) Quality assurance measures to be employed throughout the project. h) Costs associated with the process execution. i) Provision of environment and infrastructure. j) Definition and maintenance of a life cycle model that is comprised of stages using the defined life cycle models for projects of the organization.
Define the project a)4. Establish a work breakdown structure (WBS) based on the deliverable products or the evolving architecture of the software system.	6.3.1.3 a)4	6.1.2.3.4.5	**Contract execution** 5.1-1 The supplier shall develop [and document] project management plan(s) based upon the planning requirements and options selected in subclause 6.1.2.3.4.4. c) Work breakdown structure of the life cycle processes and activities, including the software products, software services and non-deliverable items, to be performed together with budgets, staffing, physical resources, software size, and schedules associated with the tasks.
Define the project a)5. Define and maintain the processes that will be applied on the project.	6.3.1.3 a).5	6.3.1.3.2.1	**Project planning** 1.1 The manager shall prepare the plans for execution of the project.
	6.3.1.3 a).5	6.3.1.3.2.1	**Project planning** 1.2 The plans associated with the execution of the project shall contain descriptions of the associated activities and tasks and identification of the software products that will be provided.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.1.3 a).5	6.3.1.3.2.1	**Project planning** 1.3 These plans shall include, but are not limited to, the following: a) - j) Definition and maintenance of a life cycle model that is comprised of stages using the defined life cycle models for projects of the organization.
Plan project and technical management	6.3.1.3 b)	6.1.2.3.4.3	**Contract execution** 3.1 The supplier shall establish requirements for the plans for managing and assuring the project and for assuring the quality of the deliverable software product or service.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.1.3 b)	6.1.2.3.4.5	**Contract execution** 5.1-1 The supplier shall develop [and document] project management plan(s) based upon the planning requirements and options selected in subclause 6.1.2.3.4.4. NOTE Items to be considered in the plan include but are not limited to the following: a) Project organizational structure and authority and responsibility of each organizational unit, including external organizations. b) Engineering environment (for development, operation, or maintenance, as applicable), including test environment, library, equipment, facilities, standards, procedures, and tools. c) Work breakdown structure of the life cycle processes and activities, including the software products, software services and non-deliverable items, to be performed together with budgets, staffing, physical resources, software size, and schedules associated with the tasks. d) Management of the quality characteristics of the software products or services. Separate plans for quality may be developed. e) Management of the safety, security, and other critical requirements of the software products or services. Separate plans for safety and security may be developed. f) Subcontractor management, including subcontractor selection and involvement between the subcontractor and the acquirer, if any. g) Quality assurance (see subclause 7.2.3). h) Verification (see subclause 7.2.4) and validation (see subclause 7.2.5), including the approach for interfacing with the verification and validation agent, if specified. i) Acquirer involvement; that is, by such means as reviews (see subclause 7.2.6), audits (see subclause 7.2.7), informal meetings, reporting, modification and change; implementation, approval, acceptance, and access to facilities. j) User involvement; by such means as requirements setting exercises, prototype demonstrations and evaluations. k) Risk management; that is, management of the areas of the project that involve potential technical, cost, or schedule risks. l) Security policy; that is, the rules for need-to-know and access-to-information at each project organization level. m) Approval required by such means as regulations, required certifications, proprietary, usage, ownership, warranty and licensing rights. n) Means for scheduling, tracking, and reporting. o) Training of personnel (see subclause 6.2.4).

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Plan project and technical management b)1. Define and maintain a project schedule based on management and technical objectives and work estimates.	6.3.1.3 b)1	6.1.2.3.4.3	**Contract execution** 3.2 Requirements for the plans should include resource needs and acquirer involvement.
	6.3.1.3 b)1	6.1.2.3.4.5	**Contract execution** 5.1-1 The supplier shall develop [and document] project management plan(s) based upon the planning requirements and options selected in subclause 6.1.2.3.4.4. NOTE Items to be considered in the plan include but are not limited to the following: c) Work breakdown structure of the life cycle processes and activities, including the software products, software services and non-deliverable items, to be performed together with budgets, staffing, physical resources, software size, and schedules associated with the tasks. h) Means for scheduling, tracking, and reporting.
	6.3.1.3 b)1	6.3.1.3.2.1	**Project planning** 1.1 The manager shall prepare the plans for execution of the project.
	6.3.1.3 b)1	6.3.1.3.2.1	**Project planning** 1.3 These plans shall include, but are not limited to, the following: a) Schedules for the timely completion of tasks. b) Estimation of effort. c) Adequate resources needed to execute the tasks. d) Allocation of tasks. e) Assignment of responsibilities.
Plan project and technical management b)2. Define achievement criteria for the life cycle stage decision gates, delivery dates and major dependencies on external inputs or outputs.	6.3.1.3 b)2	6.1.2.3.4.5	**Contract execution** 5.1-1 The supplier shall develop [and document] project management plan(s) based upon the planning requirements and options selected in subclause 6.1.2.3.4.4. NOTE Items to be considered in the plan include but are not limited to the following: d) Management of the quality characteristics of the software products or services. Separate plans for quality may be developed. e) Management of the safety, security, and other critical requirements of the software products or services. Separate plans for safety and security may be developed. g) Quality assurance (see subclause 7.2.3). h) Verification (see subclause 7.2.4) and validation (see subclause 7.2.5), including the approach for interfacing with the verification and validation agent, if specified. m) Approval required by such means as regulations, required certifications, proprietary, usage, ownership, warranty and licensing rights.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.1.3 b)2	6.3.1.3.2.1	**Project planning** 1.3 These plans shall include, but are not limited to, the following: a) Schedules for the timely completion of tasks. f) Quantification of risks associated with the tasks or the process itself. g) Quality assurance measures to be employed throughout the project. j) Definition and maintenance of a life cycle model that is comprised of stages using the defined life cycle models for projects of the organization.
Plan project and technical management b)3. Define the costs and plan a budget.	6.3.1.3 b)3	6.3.1.3.2.1	**Project planning** 1.3 These plans shall include, but are not limited to, the following: a) Schedules for the timely completion of tasks. b) Estimation of effort. h) Costs associated with the process execution. i) Provision of environment and infrastructure.
Plan project and technical management b)4. Define roles, responsibilities, accountabilities, and authorities.	6.3.1.3 b)4	6.1.2.3.4.5	**Contract execution** 5.1-1 The supplier shall develop [and document] project management plan(s) based upon the planning requirements and options selected in subclause 6.1.2.3.4.4. NOTE Items to be considered in the plan include but are not limited to the following: a) Project organizational structure and authority and responsibility of each organizational unit, including external organizations.
	6.3.1.3 b)4	6.2.4.3.3.6	6.2.4 Human Resource Management Process- 3.3 **Skill acquisition and provision** 6.2 Define team structure and operating rules.
	6.3.1.3 b)4	6.3.1.3.2.1	**Project planning** 1.3 These plans shall include, but are not limited to, the following: a) Schedules for the timely completion of tasks. b) Estimation of effort. c) Adequate resources needed to execute the tasks. d) Allocation of tasks. e) Assignment of responsibilities.
	6.3.1.3 b)4	6.3.2.3.2.1	6.3.2 Project Assessment and Control Process- 3.2 **Project control** 1.3 It is the manager's responsibility to ensure the impact of any changes is determined, controlled, and monitored.
	6.3.1.3 b)4	7.3.1.3.2.7	7.3.1 Domain Engineering Process- 3.2 **Domain analysis** 7.2 Software developers, asset managers, domain experts, and users shall be included in the reviews.
	6.3.1.3 b)4	7.3.1.3.3.5	**Domain design** 5.2 Software developers, domain experts, and asset managers shall be included in the reviews.
	6.3.1.3 b)4	7.3.1.3.4.4	**Asset provision** 4.2 Software developers and asset managers shall be included in the reviews.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.1.3 b)4	7.3.2.3.1.3	7.3.2 Reuse Asset Management Process- 3.1 **Process implementation** 3.2 Domain engineers and reuse program administrators shall be included in the review.
	6.3.1.3 b)4	7.3.2.3.2.3	3.2 **Asset storage and retrieval definition** 3.2 Reuse program administrators and domain engineers shall be included in the review(s).
	6.3.1.3 b)4	7.3.3.3.2.3	7.3.3 Reuse Program Management Process - 3.2 **Domain identification** 3.2 Software developers, domain engineers, and users shall be included in the reviews.
Plan project and technical management b)4. Define roles, responsibilities, accountabilities, and authorities.	6.3.1.3 b)4	7.3.3.3.4.4	**Planning** 4.2 Members of the reuse steering function and the appropriate managers shall be included in the reviews.
Plan project and technical management b)5. Define the infrastructure and services required.	6.3.1.3 b)5	6.1.2.3.4.5	**Contract execution** 5.1-1 The supplier shall develop [and document] project management plan(s) based upon the planning requirements and options selected in subclause 6.1.2.3.4.4. NOTE Items to be considered in the plan include but are not limited to the following: b) Engineering environment (for development, operation, or maintenance, as applicable), including test environment, library, equipment, facilities, standards, procedures, and tools.
	6.3.1.3 b)5	6.3.1.3.2.1	**Project planning** 1.3 These plans shall include, but are not limited to, the following: i) Provision of environment and infrastructure.
	6.3.1.3 b)5	7.2.7.3.1.3	7.2.7 Software Audit Process- 3.1 **Process implementation** 3.1 All resources required to conduct the audits shall be agreed by the parties. Process implementation. 3.2 These resources include support personnel, location, facilities, hardware, software, and tools.
Plan project and technical management b)6. Plan the acquisition of materials and enabling systems and services supplied from outside the project.	6.3.1.3 b)6	6.3.1.3.2.1	**Project planning** 1.3 These plans shall include, but are not limited to, the following: i) Provision of environment and infrastructure.
Plan project and technical management b)7.1 Generate [and communicate] a plan for project and technical management and execution, including reviews.	6.3.1.3 b)7	6.1.2.3.4.5	**Contract execution** 5.1-2 The supplier shall [develop and] document project management plan(s) based upon the planning requirements and options selected in subclause 6.1.2.3.4.4.
	6.3.1.3 b)7	6.3.1.3.2.1	**Project planning** 1.1 The manager shall prepare the plans for execution of the project.
	6.3.1.3 b)7	7.3.2.3.1.1	**Process implementation** 1. The asset manager shall create an asset management plan to define the resources and procedures for managing assets.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.1.3 b)7	7.2.6.3.1.1	7.2.6 Software Review Process- 3.1 **Process implementation** 1.1 Periodic reviews shall be held at predetermined milestones as specified in the project plan(s). 1.2 Stakeholders should determine the need for any ad hoc reviews in which agreeing parties may participate.
Plan project and technical management b)7.2 [Generate and] communicate a plan for project and technical management and execution, including reviews.	6.3.1.3 b)7	7.2.6.3.1.3	**Process implementation** 3 The parties that participate in a review should agree on the following items at each review: meeting agenda, software products (results of an activity) and problems to be reviewed; scope and procedures; and entry and exit criteria for the review.
	6.3.1.3 b)7	7.2.6.3.1.4	**Process implementation** 4 Problems detected during the reviews shall be recorded and entered into the Software Problem Resolution Process (subclause 7.2.8) as required.
Activate the project c)1. Obtain approval to start the project.	6.3.1.3 c)1	6.2.3.3.1.7	**Project initiation** 7. The organization shall authorize the project to commence execution of approved project plans, including the technical plans.
	6.3.1.3 c)1	6.3.1.3.3.1	**Project activation** 1. The manager shall obtain authorization for the project.
Activate the project c)2. Submit requests and obtain commitments for necessary resources to perform the project.	6.3.1.3 c)2	6.3.1.3.3.2	**Project activation** 2. The manager shall submit requests for necessary resources to perform the project.
	6.3.1.3 c)2	7.2.6.3.1.2	**Process implementation** 2 All resources that are required to conduct the reviews shall be provided. These resources include personnel, location, facilities, hardware, software, and tools.
Activate the project c)3. Implement project plans.	6.3.1.3 c)3	6.3.1.3.3.3	**Project activation** 3. The manager shall initiate the implementation of the project plan/s to satisfy the objectives and criteria set, exercising control over the project.
	6.3.1.3 c)3	7.1.1.3.1.4	7.1.1 Software Implementation Process- 3.1 **Software implementation strategy** 4.4-2 These plans shall be [documented and] executed.
	6.3.1.3 c)3	7.3.1.3.1.1	**Process implementation** 1.1-2 The domain engineer shall [create and] execute a domain engineering plan.
	6.3.1.3 c)3	7.3.3.3.5.1	7.3.3 Reuse Program Management Process- 3.5 **Execution and Control** 1. Activities in the reuse program implementation plan shall be executed in accordance with the plan.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.3.2 Project Assessment and Control process			
Plan for project assessment and control a)1. Define the project assessment and control strategy.	6.3.2.3 a)1	None	None of activities and tasks is mapped.
Assess the project b)1. Assess alignment of project objectives and plans with the project context.	6.3.2.3 b)1	7.2.6.3.2.1	7.2.6 Software Review Process- 3.2 **Project management reviews** 1.1 Project status shall be evaluated relative to the applicable project plans, schedules, standards, and guidelines.
	6.3.2.3 b)1	7.2.6.3.2.1	**Project management reviews** 1.2 The outcome of the review should be considered by appropriate management and should provide for the following: a) Making activities progress according to plan, based on an evaluation of the activity or software product status. b) Maintaining global control of the project through adequate allocation of resources. c) Changing project direction or determining the need for alternate planning. d) Evaluating and managing the risk issues that may jeopardize the success of the project.
Assess the project b)2. Assess management and technical plans against objectives to determine adequacy and feasibility.	6.3.2.3 b)2	6.3.1.3.1.2	6.3.1 Project Planning Process- 3.1 **Project initiation** 2. Once the project requirements are established, the manager shall establish the feasibility of the project by checking that the resources (personnel, materials, technology, and environment) required to execute and manage the project are available, adequate, and appropriate and that the timescales to completion are achievable.
	6.3.2.3 b)2	7.2.6.3.3.1	**Technical reviews** 1. Technical reviews shall be held to evaluate the software products or services under consideration and provide evidence that: a) They are complete. b) They comply with their standards and specifications. c) Changes to them are properly implemented and affect only those areas identified by the Configuration Management Process (subclause 7.2.2). d) They are adhering to applicable schedules. e) They are ready for the next planned activity. f) The development, operation, or maintenance is being conducted according to the plans, schedules, standards, and guidelines of the project.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Assess the project b)3. Assess project and technical status against appropriate plans to determine actual and projected cost, schedule, and performance variances.	6.3.2.3 b)3	6.3.2.3.1.1	6.3.2 Project Assessment and Control Process- 3.1 **Project monitoring** 1. The manager shall monitor the overall execution of the project, providing both internal reporting of the project progress and external reporting to the acquirer as defined in the contract.
	6.3.2.3 b)3	7.2.6.3.2.1	**Project management reviews** 1.2 The outcome of the review should be considered by appropriate management and should provide for the following: a) Making activities progress according to plan, based on an evaluation of the activity or software product status.
	6.3.2.3 b)3	7.2.6.3.3.1	**Technical reviews** 1. Technical reviews shall be held to evaluate the software products or services under consideration and provide evidence that: a) They are complete. d) They are adhering to applicable schedules. e) They are ready for the next planned activity.
Assess the project b)4. Assess the adequacy of roles, responsibilities, accountabilities, and authorities.	6.3.2.3 b)4	7.2.6.3.2.1	**Project management reviews** 1.2 The outcome of the review should be considered by appropriate management and should provide for the following: a) Making activities progress according to plan, based on an evaluation of the activity or software product status. b) Maintaining global control of the project through adequate allocation of resources.
Assess the project b)5. Assess the adequacy and availability of resources.	6.3.2.3 b)5	7.2.6.3.2.1	**Project management reviews** 1.2 The outcome of the review should be considered by appropriate management and should provide for the following: b) Maintaining global control of the project through adequate allocation of resources..
Assess the project b)6. Assess progress using measured achievement and milestone completion.	6.3.2.3 b)6	7.2.6.3.1.1	**Process implementation** 1.1 Periodic reviews shall be held at predetermined milestones as specified in the project plan(s). 1.2 Stakeholders should determine the need for any ad hoc reviews in which agreeing parties may participate.
	6.3.2.3 b)6	7.2.6.3.2.1	**Project management reviews** 1.2 The outcome of the review should be considered by appropriate management and should provide for the following: a) Making activities progress according to plan, based on an evaluation of the activity or software product status.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.2.3 b)6	7.2.6.3.3.1	**Technical reviews** 1. Technical reviews shall be held to evaluate the software products or services under consideration and provide evidence that: d) They are adhering to applicable schedules. e) They are ready for the next planned activity. f) The development, operation, or maintenance is being conducted according to the plans, schedules, standards, and guidelines of the project.
Assess the project b)7. Conduct required management and technical reviews, audits and inspections.	6.3.2.3 b)7	7.2.6.3.1.1	**Process implementation** 1.1 Periodic reviews shall be held at predetermined milestones as specified in the project plan(s).
	6.3.2.3 b)7	7.2.6.3.1.1	**Process implementation** 1.2 Stakeholders should determine the need for any ad hoc reviews in which agreeing parties may participate.
	6.3.2.3 b)7	7.2.6.3.1.3	**Process implementation** 3 The parties that participate in a review should agree on the following items at each review: meeting agenda, software products (results of an activity) and problems to be reviewed; scope and procedures; and entry and exit criteria for the review.
	6.3.2.3 b)7	7.2.6.3.1.6	**Process implementation** 6. Participating parties shall agree on the outcome of the review and any action item responsibilities and closure criteria.
	6.3.2.3 b)7	7.2.6.3.2.1	**Project Management Reviews** 1.1 Project status shall be evaluated relative to the applicable project plans, schedules, standards, and guidelines.
	6.3.2.3 b)7	7.2.6.3.3.1	**Technical reviews** 1. Technical reviews shall be held to evaluate the software products or services under consideration and provide evidence that: a) They are complete. b) They comply with their standards and specifications. c) Changes to them are properly implemented and affect only those areas identified by the Configuration Management Process (subclause 7.2.2). d) They are adhering to applicable schedules. e) They are ready for the next planned activity. f) The development, operation, or maintenance is being conducted according to the plans, schedules, standards, and guidelines of the project.
	6.3.2.3 b)7	7.2.7.3.1.1	7.2.7 Software Audit Process- 3.1 **Process implementation** 1. Audits shall be held at predetermined milestones as specified in the project plan(s).

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.2.3 b)7	7.3.1.3.2.7	7.3.1 Domain Engineering Process- 3.2 **Domain analysis** 7.1 The domain engineer shall conduct domain analysis review(s).
	6.3.2.3 b)7	7.3.1.3.3.2	**Domain design** 2. The domain architecture shall be evaluated in accordance with the provisions of the architecture design technique selected and the organization's asset acceptance and certification procedures.
	6.3.2.3 b)7	7.3.1.3.3.4	**Domain design** 4. For each asset specified, the specification shall be evaluated in accordance with the organization's asset acceptance and certification procedures.
	6.3.2.3 b)7	7.3.1.3.3.5	**Domain design** 5.1 The domain engineer shall conduct domain design review(s).
	6.3.2.3 b)7	7.3.1.3.4.4	**Asset provision** 4.1 The domain engineer shall conduct asset review(s).
	6.3.2.3 b)7	7.3.2.3.1.3	7.3.2 Reuse Asset Management Process- 3.1 **Process implementation** 3.1 The asset management plan shall be reviewed in accordance with the Software Review Process.
	6.3.2.3 b)7	7.3.2.3.2.3	**Asset storage and retrieval definition** 3.1 The asset manager shall conduct review(s) of the asset storage and retrieval mechanism in accordance with the Software Review Process.
	6.3.2.3 b)7	7.3.3.3.2.3	7.3.3 Reuse Program Management Process- 3.2 **Domain identification** 3.1 The reuse program administrator shall conduct reviews in accordance with the Software Review Process.
	6.3.2.3 b)7	7.3.3.3.4.2	7.3.3 Reuse Program Management Process- 3.4 **Planning** 2 The plan shall be reviewed and evaluated for completeness, feasibility of implementation, and ability to realize the organization's reuse strategy.
Assess the project b)7. Conduct required management and technical reviews, audits and inspections.	6.3.2.3 b)7	7.3.3.3.4.4	**Planning** 4.1 The reuse program administrator shall conduct review(s) in accordance with the Software Review Process.
Assess the project b)8. Monitor critical processes and new technologies.	6.3.2.3 b)8	6.2.1.3.3.2	6.2.1 Life Cycle Model Management Process- 3.3 **Process improvement** 2.2 These analyses should be used as feedback to improve these processes, to recommend changes in the direction of the projects (or subsequent projects), and to determine technology advancement needs.
Assess the project b)9. Analyze measurement results and make recommendations.	6.3.2.3 b)9	6.3.7.3.2.1	6.3.7 Measurement process- 3.2 **Measurement performance** 1 The project shall integrate procedures for data generation, collection, analysis and reporting into the relevant processes.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.2.3 b)9	6.3.7.3.2.3	**Measurement performance** 3 The project shall analyze data and develop information products.
Assess the project b)10. Record and provide status and findings from assessment tasks.	6.3.2.3 b)10	6.2.1.3.2.1	**Process assessment** 1.2 Assessment records should be produced and maintained.
	6.3.2.3 b)10	6.3.2.3.2.2	**Project control** 2.1 The manager shall report, at agreed points, the progress of the project, declaring adherence to the plans and resolving instances of the lack of progress.
	6.3.2.3 b)10	7.2.6.3.1.5	**Process implementation** 5.1-1&2 The review results shall be documented and distributed. 5.2 This communication includes adequacy of review (for example, approval, disapproval, or contingent approval) of the review results.
	6.3.2.3 b)10	7.2.7.3.1.6	**Process implementation** 6.1-1&2 After completing an audit, the audit results shall be **documented** and **provided** to the audited party.
Assess the project b)11. Monitor process execution within the project.	6.3.2.3 b)11	6.3.2.3.3.1	**Project assessment** 1. The manager shall ensure that the software products and plans are evaluated for satisfaction of requirements.
	6.3.2.3 b)11	6.3.2.3.3.2	**Project assessment** 2. The manager shall assess the evaluation results of the software products, activities, and tasks completed during the execution of the project for achievement of the objectives and completion of the plans.
Control the project c)1. Initiate necessary actions needed to address identified issues.	6.3.2.3 c)1	6.3.2.3.2.1	**Project control** 1.1 The manager shall investigate, analyze, and resolve the problems discovered during the execution of the project.
	6.3.2.3 c)1	6.3.2.3.2.1	**Project control** 2.1 The manager shall report, at agreed points, the progress of the project, declaring adherence to the plans and resolving instances of the lack of progress.
	6.3.2.3 c)1	6.3.2.3.2.1	**Project control** 1.3 It is the manager's responsibility to ensure the impact of any changes is determined, controlled, and monitored.
	6.3.2.3 c)1	6.3.2.3.2.1	**Project control** 1.4 Problems and their resolution shall be documented.
	6.3.2.3 c)1	6.3.2.3.2.2	**Project control** 2.2 These include internal and external reporting as required by the organizational procedures and the contract.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.2.3 c)1	7.2.6.3.1.4	**Process implementation** 4. Problems detected during the reviews shall be recorded and entered into the Software Problem Resolution Process (subclause 7.2.8) as required.
	6.3.2.3 c)1	7.2.6.3.2.1	**Project Management Reviews** 1.2 The outcome of the review should be considered by appropriate management and should provide for the following:a) Making activities progress according to plan, based on an evaluation of the activity or software product status. b) Maintaining global control of the project through adequate allocation of resources. c) Changing project direction or determining the need for alternate planning. d) Evaluating and managing the risk issues that may jeopardize the success of the project.
Control the project c)2. Initiate necessary project replanning.	6.3.2.3 c)2	6.3.2.3.2.1	**Project control** 1.2 The resolution of problems may result in changes to plans.
Control the project c)3. Initiate change actions when there is a contractual change to cost, time or quality due to the impact of an acquirer or supplier request.	6.3.2.3 c)3	6.1.1.3.4.3	6.1.1 Acquisition Process- 3.4 **Contract agreement** 3.2 Changes to the contract shall be investigated for impact on project plans, costs, benefits, quality, and schedule.
	6.3.2.3 c)3	6.1.2.3.3.1	6.1.2 Supply Process- 3.3 **Contract agreement** 1 The supplier shall negotiate and enter into a contract with the acquirer to provide the software product or service.
	6.3.2.3 c)3	6.1.2.3.3.2	**Contract agreement** 2 The supplier may request modification to the contract as part of the change control mechanism.
Control the project c)4. Authorize the project to proceed toward the next milestone or event, if justified.	6.3.2.3 c)4	6.2.3.3.1.7	6.2.3 Project Portfolio Management Process- 3.1 **Project initiation** 7. The organization shall authorize the project to commence execution of approved project plans, including the technical plans.
	6.3.2.3 c)4	7.2.6.3.1.6	**Process implementation** 6. Participating parties shall agree on the outcome of the review and any action item responsibilities and closure criteria.
6.3.3 Decision Management process			
Prepare for decisions a)1. Define a decision management strategy.	6.3.3.3 a)1	6.3.3.3.1.1	6.3.3 Decision Management Process- 3.1 **Decision planning** 1. The project shall define a decision-making strategy.
Prepare for decisions a)2. Identify the circumstances and need for a decision.	6.3.3.3 a)2	6.3.3.3.1.2	**Decision planning** 3. The project shall identify the circumstances and need for a decision.
Prepare for decisions a)3. Involve relevant stakeholders in the decision-making in order to draw on experience and knowledge.	6.3.3.3 a)3	6.3.3.3.1.3	**Decision planning** 2. The project shall involve relevant parties in the decision-making in order to draw on experience and knowledge.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Analyze the decision information b)1. Select and declare the decision management strategy for each decision.	6.3.3.3 b)1	6.3.3.3.2.1	**Decision analysis** 1.1 The project shall select and declare the decision-making strategy for each decision situation.
Analyze the decision information b)2. Determine desired outcomes and measurable selection criteria.	6.3.3.3 b)2	6.3.3.3.2.1	**Decision analysis** 1.2 The project shall identify desired outcomes and measurable success criteria.
Analyze the decision information b)3. Identify the trade space and alternatives.	6.3.3.3 b)3	6.3.3.3.2.2	**Decision analysis** 2. The project shall evaluate the balance of consequences of alternative actions, using the defined decision-making strategy, to arrive at an optimization of, or an improvement in, an identified decision situation.
Analyze the decision information b)4. Evaluate each alternative against the criteria.	6.3.3.3 b)4	6.3.3.3.2.2	**Decision analysis** 2. The project shall evaluate the balance of consequences of alternative actions, using the defined decision-making strategy, to arrive at an optimization of, or an improvement in, an identified decision situation.
Make and manage decisions c)1. Determine preferred alternative for each decision.	6.3.3.3 c)1	6.3.3.3.2.2	**Decision analysis** 2. The project shall evaluate the balance of consequences of alternative actions, using the defined decision-making strategy, to arrive at an optimization of, or an improvement in, an identified decision situation.
Make and manage decisions c)2. Record the resolution, decision rationale, and assumptions.	6.3.3.3 c)2	6.3.3.3.3.1	**Decision tracking** 1. The project shall record, track, evaluate and report decision outcomes to confirm that problems have been effectively resolved, adverse trends have been reversed and advantage has been taken of opportunities.
Make and manage decisions c)3. Record, track, evaluate and report decisions.	6.3.3.3 c)3	6.3.3.3.3.1	**Decision tracking** 1. The project shall record, track, evaluate and report decision outcomes to confirm that problems have been effectively resolved, adverse trends have been reversed and advantage has been taken of opportunities.
	6.3.3.3 c)3	6.3.3.3.3.1	**Decision tracking** 2. The project shall maintain records of problems and opportunities and their disposition, as stipulated in agreements or organizational procedures and in a manner that permits auditing and learning from experience.
6.3.4 Risk Management process			
Plan risk management a)1. Define the risk management strategy.	6.3.4.3 a)1	6.3.4.3.1.1	6.3.4 Risk Management Process- 3.1 **Risk Management planning** 1. Risk management policies describing the guidelines under which risk management is to be performed shall be defined.
	6.3.4.3 a)1	6.3.4.3.1.3	**Risk Management planning** 3. The parties responsible for performing risk management and their roles and responsibilities shall be identified.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.4.3 a)1	6.3.4.3.1.4	**Risk Management planning** 4. The responsible parties shall be provided with adequate resources to perform the Risk Management Process.
	6.3.4.3 a)1	6.3.4.3.1.5	**Risk Management planning** 5. A description of the process for evaluating and improving the Risk Management Process shall be provided.
	6.3.4.3 a)1	6.3.4.3.3.4	**Risk analysis** 4.2-1&2 Measures indicating the effectiveness of the treatment alternatives shall also be defined and documented.
Plan risk management a)2. Define and record the context of the Risk Management process.	6.3.4.3 a)2	6.3.4.3.2.1	**Risk profile management** 1.1-1&2 The context of the Risk Management Process shall be defined and documented.
	6.3.4.3 a)2	6.3.4.3.1.2	**Risk Management planning** 2. A description of the Risk Management Process to be implemented shall be documented.
Manage the risk profile b)1. Define and record the risk thresholds and conditions under which a level of risk may be accepted.	6.3.4.3 b)1	6.3.4.3.2.2	**Risk profile management** 2. Risk thresholds, defining the conditions under which a level of risk may be accepted, shall be documented.
Manage the risk profile b)2. Establish and maintain a risk profile.	6.3.4.3 b)2	6.3.4.3.2.3	**Risk profile management** 3. A risk profile shall be established and maintained.
Manage the risk profile b)3. Periodically provide the relevant risk profile to stakeholders based upon their needs.	6.3.4.3 b)3	6.3.4.3.2.4	**Risk profile management** 4. The relevant risk profile shall be communicated periodically to stakeholders based upon their needs.
Analyze risks c)1. Identify risks in the categories described in the risk management context.	6.3.4.3 c)1	6.3.4.3.3.1	**Risk analysis** 1. Risks shall be identified in the categories described in the risk management context.
	6.3.4.3 c)1	7.2.6.3.2.1	7.2.6 Software Review Process- 3.2 **Project management reviews** 1.1 Project status shall be evaluated relative to the applicable project plans, schedules, standards, and guidelines.
	6.3.4.3 c)1	7.2.6.3.2.1	**Project management reviews** 1.2 The outcome of the review should be considered by appropriate management and should provide for the following: d) Evaluating and managing the risk issues that may jeopardize the success of the project.
Analyze risks c)2. Estimate the likelihood of occurrence and consequences of each identified risk.	6.3.4.3 c)2	6.3.4.3.3.2	**Risk analysis** 2. The probability of occurrence and consequences of each risk identified shall be estimated.
Analyze risks c)3. Evaluate each risk against its risk thresholds.	6.3.4.3 c)3	6.3.4.3.3.3	**Risk analysis** 3. Each risk shall be evaluated against its risk thresholds.
Analyze risks c)4. For each risk that does not meet its risk threshold, define and record recommended treatment strategies and measures.	6.3.4.3 c)4	6.3.4.3.3.4	**Risk analysis** 4.1-1&2 For each risk that is above its risk threshold, recommended treatment strategies shall be defined and documented.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Treat risks d)1. Identify recommended alternatives for risk treatment.	6.3.4.3 d)1	6.3.4.3.4.1	**Risk treatment** 1. Stakeholders shall be provided recommended alternatives for risk treatment in risk action requests.
Treat risks d)2. Implement risk treatment alternatives for which the stakeholders determine that actions should be taken to make a risk acceptable.	6.3.4.3 d)2	6.3.4.3.4.2	**Risk treatment** 2. If the stakeholders determine that actions should be taken to make a risk acceptable, then a risk treatment alternative shall be implemented.
Treat risks d)3. When the stakeholders accept a risk that does not meet its threshold, consider it a high priority and monitor it continually to determine if future risk treatment actions are necessary or if its priority has changed.	6.3.4.3 d)3	6.3.4.3.4.3	**Risk treatment** 3. If the stakeholders accept a risk that exceeds its threshold, it shall be considered a high priority and monitored continuously to determine if any future risk treatment actions are necessary.
Treat risks d)4. Once a risk treatment is selected, coordinate management action.	6.3.4.3 d)4	6.3.4.3.4.4	**Risk treatment** 4. Once a risk treatment is selected, it shall receive the same management actions as problems do, in accordance with the assessment and control activities in subclause 6.3.2 of this standard or ISO/IEC 15288:2008.
Monitor risks e)1. Continually monitor risks and the risk management context for changes and evaluate the risks when their state has changed.	6.3.4.3 e)1	6.3.4.3.5.1	**Risk monitoring** 1.1 All risks and the risk management context shall be continuously monitored for changes.
	6.3.4.3 e)1	7.2.6.3.2.1	**Project management reviews** 1.1 Project status shall be evaluated relative to the applicable project plans, schedules, standards, and guidelines.
	6.3.4.3 e)1	7.2.6.3.2.1	**Project management reviews** 1.2 The outcome of the review should be considered by appropriate management and should provide for the following: d) Evaluating and managing the risk issues that may jeopardize the success of the project.
Monitor risks e)2. Implement and monitor measures to evaluate the effectiveness of risk treatments.	6.3.4.3 e)2	6.3.4.3.5.2	**Risk monitoring** 2. Measures shall be implemented and monitored to evaluate the effectiveness of risk treatments.
Monitor risks e)3. Continually monitor for the emergence of new risks and sources throughout the life cycle.	6.3.4.3 e)3	6.3.4.3.5.1	**Risk monitoring** 1.2 Risks whose states have changed shall undergo risk evaluation.
	6.3.4.3 e)3	6.3.4.3.5.3	**Risk monitoring** 3. The project shall continuously monitor for new risks and sources throughout its life cycle.
	6.3.4.3 e)3	7.2.6.3.2.1	**Project management reviews** 1.1 Project status shall be evaluated relative to the applicable project plans, schedules, standards, and guidelines.
	6.3.4.3 e)3	7.2.6.3.2.1	**Project management reviews** 1.2 The outcome of the review should be considered by appropriate management and should provide for the following: c) Changing project direction or determining the need for alternate planning. d) Evaluating and managing the risk issues that may jeopardize the success of the project.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.3.5 Configuration Management process			
Plan configuration management a)1. Define a configuration management strategy, including approaches for the following: i) Governance of CM, including roles, responsibilities, accountabilities, and authorities, and use of configuration control (change control) boards; and ii) Consideration of the level of risk and impact in approval of configuration baselines and regular and emergency change requests. iii) Coordination of CM across the set of acquirer, supplier, and supply chain organizations for the life of the software system, or the extent of the agreement or project, as appropriate. iv) Control of access and changes to and disposition of configuration items. v) The necessary baselines to be established, including criteria or events for commencing configuration control and maintaining baselines of evolving configurations. vi) Control of software licenses, data rights, and other intellectual property assets. vii) Frequency, priorities, and content of software versions and releases. viii) The audit strategy and the responsibilities for validating continuous integrity and security of the configuration definition information. ix) Change management, including preparing stakeholders and especially users for changes in operational software systems and services.	6.3.5.3 a)1	6.3.5.3.1.1	6.3.5 Configuration Management Process- 3.1 **Configuration management planning** 1. The project shall define a configuration management strategy.
	6.3.5.3 a)1	7.2.2.3.1.1	7.2.2 Software Configuration Management Process- 3.1 **Process implementation** 1.1 A software configuration management plan shall be developed.
	6.3.5.3 a)1	7.2.2.3.1.1	**Process implementation** 1.2 The plan shall describe: the configuration management activities; procedures and schedule for performing these activities; the organization(s) responsible for performing these activities; and their relationship with other organizations, such as software development or maintenance.
	6.3.5.3 a)1	7.2.2.3.1.1	**Process implementation** 1.3-1 The plan shall be documented [and implemented].
Plan configuration management a)2. Define the storage, archive and retrieval procedures for configuration items, CM artifacts, and records.	6.3.5.3 a)2	7.2.2.3.1.1	**Process implementation** 1.2 The plan shall describe: the configuration management activities; procedures and schedule for performing these activities; the organization(s) responsible for performing these activities; and their relationship with other organizations, such as software development or maintenance.
	6.3.5.3 a)2	7.2.2.3.2.1	**Configuration identification** 1.1 A scheme shall be established for identification of software items and their versions to be controlled for the project.
	6.3.5.3 a)2	7.2.2.3.2.1	**Configuration identification** 1.2 For each software item and its versions, the following shall be identified: the documentation that establishes the baseline; the version references; and other identification details.
Perform configuration identification	6.3.5.3 b)	7.2.2.3.1.1	**Process implementation** 1.3-2 The plan shall be [documented] and implemented.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform configuration identification b)1. Select the software system elements to be uniquely identified as configuration items subject to configuration control.	6.3.5.3 b)1	6.3.5.3.1.2	**Configuration management planning** 2. The project shall identify items that are subject to configuration control.
Perform configuration identification b)2. Identify the attributes of configuration items.	6.3.5.3 b)2	7.2.2.3.2.1	**Configuration identification** 1.1 A scheme shall be established for identification of software items and their versions to be controlled for the project.
Perform configuration identification b)3. Define baselines through the life cycle.	6.3.5.3 b)3	6.3.5.3.2.1	**Configuration management execution** 1. The project shall maintain information on configurations with an appropriate level of integrity and security.
	6.3.5.3 b)3	7.2.2.3.2.1	**Configuration identification** 1.2 For each software item and its versions, the following shall be identified: the documentation that establishes the baseline; the version references; and other identification details.
Perform configuration identification b)4. Obtain acquirer and supplier agreement to establish a baseline.	6.3.5.3 b)4	None	None of activities and tasks is mapped.
Perform configuration change management	6.3.5.3 c)	6.1.1.3.6.3	**Acquirer acceptance** 3. After acceptance, the acquirer should take the responsibility for the configuration management of the delivered software product (see subclause 7.2.2).
Perform configuration change management c)1. Identify and record Requests for Change and Requests for Variance.	6.3.5.3 c)1	7.2.2.3.3.1	**Configuration control** 1.1 The following shall be performed: identification and recording of change requests; analysis and evaluation of the changes; approval or disapproval of the request; and implementation, verification, and release of the modified software item.
Perform configuration change management c)2. Coordinate, evaluate, and disposition Requests for Change and Requests for Variance.	6.3.5.3 c)2	7.2.2.3.3.1	**Configuration control** 1.1 The following shall be performed: identification and recording of change requests; analysis and evaluation of the changes; approval or disapproval of the request; and implementation, verification, and release of the modified software item.
Perform configuration change management c)3. Track and manage approved changes to the baseline, Requests for Change and Requests for Variance.	6.3.5.3 c)3	6.3.5.3.2.2	**Configuration management execution** 2. The project shall ensure that changes to configuration baselines are properly identified, recorded, evaluated, approved, incorporated and verified.
Perform release control d)1. Identify and record release requests, identifying the software system elements in a release.	6.3.5.3 d)1	None	None of activities and tasks is mapped.
Perform release control d)2. Approve software system releases and deliveries.	6.3.5.3 d)2	7.2.2.3.6.1	**Release management and delivery** 1.1 The release and delivery of software products and documentation shall be formally controlled.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform release control d)3. Track and manage distribution of software system releases to specified environments or software deliveries.	6.3.5.3 d)3	7.2.2.3.6.1	**Release management and delivery** 1.1 The release and delivery of software products and documentation shall be formally controlled.
	6.3.5.3 d)3	7.2.2.3.6.1	**Release management and delivery** 1.2 Master copies of code and documentation shall be maintained for the life of the software product.
	6.3.5.3 d)3	7.2.2.3.6.1	**Release management and delivery** 1.3 The code and documentation that contain safety or security critical functions shall be handled, stored, packaged, and delivered in accordance with the policies of the organizations involved.
Perform configuration status accounting e)1. Develop and maintain the CM status information for software system elements, baselines, and releases.	6.3.5.3 e)1	6.3.5.3.2.1	**Configuration management execution** 1. The project shall maintain information on configurations with an appropriate level of integrity and security.
	6.3.5.3 e)1	7.2.2.3.3.1	**Configuration control** 1.1 The following shall be performed: identification and recording of change requests; analysis and evaluation of the changes; approval or disapproval of the request; and implementation, verification, and release of the modified software item.
	6.3.5.3 e)1	7.2.2.3.3.1	**Configuration control** 1.2 An audit trail shall exist, whereby each modification, the reason for the modification, and authorization of the modification can be traced.
Perform configuration status accounting e)2. Capture, store and report configuration management data.	6.3.5.3 e)2	7.2.2.3.3.1	**Configuration control** 1.3 Control and audit of all accesses to the controlled software items that handle safety or security critical functions shall be performed.
	6.3.5.3 e)2	7.2.2.3.4.1	**Configuration status accounting** 1.1 Management records and status reports that show the status and history of controlled software items, including baselines shall be prepared.
	6.3.5.3 e)2	7.2.2.3.4.1	**Configuration status accounting** 1.2 Status reports should include the number of changes for a project, latest software item versions, release identifiers, the number of releases, and comparisons of releases.
Perform configuration evaluation f)1. Identify the need for CM audits, and schedule the events.	6.3.5.3 f)1	None	None of activities and tasks is mapped.
Perform configuration evaluation f)2. Verify the product configuration meets the configuration requirements by comparing requirements, constraints, and waivers (variances) with results of formal verification activities, which can involve sampling methods.	6.3.5.3 f)2	7.2.2.3.5.1	**Configuration evaluation** 1. The following shall be determined and ensured: the 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).

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform configuration evaluation f)3. Monitor the incorporation of approved configuration changes.	6.3.5.3 f)3	7.2.2.3.5.1	**Configuration evaluation** 1. The following shall be determined and ensured: the 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).
Perform configuration evaluation f)4. Assess whether the software system meets functional and performance capabilities identified for the baseline.	6.3.5.3 f)4	7.2.2.3.5.1	**Configuration evaluation** 1. The following shall be determined and ensured: the 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).
Perform configuration evaluation f)5. Assess whether the operational software system elements conform to the approved configuration information.	6.3.5.3 f)5	7.2.2.3.5.1	**Configuration evaluation** 1. The following shall be determined and ensured: the 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).
Perform configuration evaluation f)6. Record the CM audit results and disposition action items.	6.3.5.3 f)6	7.2.2.3.3.1	**Configuration control** 1.2 An audit trail shall exist, whereby each modification, the reason for the modification, and authorization of the modification can be traced.
6.3.6 Information Management process			
Prepare for information management a)1. Define the strategy for information management.	6.3.6.3 a)1	7.2.1.3.1.1	7.2.1 Software Documentation Management Process- 3.1 **Process implementation** 1.1 A plan, identifying the documents to be produced during the life cycle of the software product shall be developed, documented, and implemented.
	6.3.6.3 a)1	7.2.1.3.2.1	**Design and development** 1. Each identified document shall be designed in accordance with applicable documentation standards for medium, format, content description, page numbering, figure/table placement, proprietary/security marking, packaging, and other presentation items.
Prepare for information management a)2. Define the items of information that will be managed.	6.3.6.3 a)2	6.3.6.3.1.1	6.3.6 Information Management Process- 3.1 **Information management planning** 1. The project shall define the items of information that will be managed during the system life cycle and, according to organizational policy or legislation, maintained for a defined period beyond.
Prepare for information management a)3. Designate authorities and responsibilities for information management.	6.3.6.3 a)3	6.3.6.3.1.2	**Information management planning** 2. The project shall designate authorities and responsibilities regarding the origination, generation, capture, archiving and disposal of items of information.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.6.3 a)3	6.3.6.3.1.3	**Information management planning** 3. The project shall define the rights, obligations and commitments regarding the retention of, transmission of and access to information items.
Prepare for information management a)4. Define the content, formats and structure of information items.	6.3.6.3 a)4	6.3.6.3.1.4	**Information management planning** 4. The project shall define the content, semantics, formats and medium for the representation, retention, transmission and retrieval of information.
	6.3.6.3 a)4	7.2.1.3.1.1	**Process implementation** 1.2 For identified documentation, the following shall be addressed: a) Title or name. b) Purpose and content. c) Intended audience. d) Procedures and responsibilities for inputs, development, review, modification, approval, production, storage, distribution, maintenance, and configuration management. e) Schedule for intermediate and final versions.
Prepare for information management a)5. Define information maintenance actions.	6.3.6.3 a)5	6.3.6.3.1.5	**Information management planning** 5. The project shall define information maintenance actions.
Perform information management b)1. Obtain, develop, or transform the identified items of information[a].	6.3.6.3 b)1	6.3.6.3.2.1	**Information management execution** 1. The project shall obtain the identified items of information.
	6.3.6.3 b)1	7.2.1.3.2.2	**Design and development** 2. The source and appropriateness of input data for the documents shall be confirmed. Automated documentation support tools may be used.
	6.3.6.3 b)1	7.2.1.3.2.3	**Design and development** 3.1 The prepared documents shall be reviewed and edited for format, technical content, and presentation style against their documentation standards.
	6.3.6.3 b)1	7.2.1.3.2.3	**Design and development** 3.2 They shall be approved for adequacy by authorized personnel prior to issue.
Perform information management b)2. Maintain information items and their storage records, and record the status of information.	6.3.6.3 b)2	6.3.6.3.2.2	**Information management execution** 2. The project shall maintain information items and their storage records according to integrity, security and privacy requirements.
	6.3.6.3 b)2	7.2.1.3.3.1	**Production** 1.2 Production and distribution of documents may use paper, electronic, or other media. Master materials shall be stored in accordance with requirements for record retention, security, maintenance, and backup.
	6.3.6.3 b)2	7.2.1.3.3.2	**Production** 2. Controls shall be established in accordance with the Software Configuration Management Process (subclause 7.2.2).

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform information management b)3. Publish, distribute or provide access to information and information items to designated stakeholders.	6.3.6.3 b)3	6.3.6.3.2.3	**Information management execution** 3. The project shall retrieve and distribute information to designated parties as required by agreed schedules or defined circumstances.
	6.3.6.3 b)3	6.3.6.3.2.4	**Information management execution** 4. The project shall provide official documentation as required.
	6.3.6.3 b)3	7.2.1.3.3.1	**Production** 1.1 The documents shall be produced and provided in accordance with the plan.
Perform information management b)4. Archive designated information.	6.3.6.3 b)4	6.3.6.3.2.5	**Information management execution** 5. The project shall archive designated information, in accordance with the audit, knowledge retention and project closure purposes.
	6.3.6.3 b)4	6.3.2.3.4.2	**Project closure** 2. These results and records shall be archived in a suitable environment as specified in the contract.
	6.3.6.3 b)4	7.2.1.3.3.1	**Production** 1.3 Master materials shall be stored in accordance with requirements for record retention, security, maintenance, and backup.
Perform information management b)5. Dispose of unwanted, invalid or unvalidated information.	6.3.6.3 b)5	6.3.6.3.2.6	**Information management execution** 6. The project shall dispose of unwanted, invalid or unverifiable information according to organization policy, and security and privacy requirements.
6.3.7 Measurement process			
Prepare for measurement a)1. Define the measurement strategy.	6.3.7.3 a)1	None	None of activities and tasks is mapped.
Prepare for measurement a)2. Describe the characteristics of the organization that are relevant to measurement, such as business and technical objectives.	6.3.7.3 a)2	6.3.7.3.1.1	6.3.7 Measurement process **Measurement planning** 1. The project shall describe the characteristics of the organization that are relevant to measurement.
Prepare for measurement a)3. Identify and prioritize the information needs.	6.3.7.3 a)3	6.3.7.3.1.2	**Measurement planning** 2. The project shall identify and prioritize the information needs.
Prepare for measurement a)4. Select and specify measures that satisfy the information needs.	6.3.7.3 a)4	6.3.7.3.1.3	**Measurement planning** 3. The project shall select and document measures that satisfy the information needs.
Prepare for measurement a)5. Define data collection, analysis, access and reporting procedures.	6.3.7.3 a)5	6.3.7.3.1.4	**Measurement planning** 4. The project shall define data collection, analysis, and reporting procedures.
	6.3.7.3 a)5	6.3.7.3.2.1	**Measurement performance** 1. The project shall integrate procedures for data generation, collection, analysis and reporting into the relevant processes.
Prepare for measurement a)6. Define criteria for evaluating the information items and the Measurement process.	6.3.7.3 a)6	6.3.7.3.1.5	**Measurement planning** 5. The project shall define criteria for evaluating the information products and the measurement process.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Prepare for measurement a)7. Identify and plan for the necessary enabling systems or services to be used.	6.3.7.3 a)7	6.2.2.3.1.1	6.2.2 Infrastructure Management Process-3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
	6.3.7.3 a)7	6.3.7.3.1.6	**Measurement planning** 6. The project shall review, approve, and provide resources for measurement tasks.
	6.3.7.3 a)7	6.3.7.3.1.7	**Measurement planning** 7. The project shall acquire and deploy supporting technologies.
Perform measurement b)1. Integrate manual or automated procedures for data generation, collection, analysis and reporting into the relevant processes.	6.3.7.3 b)1	6.3.7.3.2.1	**Measurement performance** 1. The project shall integrate procedures for data generation, collection, analysis and reporting into the relevant processes.
Perform measurement b)2. Collect, store, and verify data.	6.3.7.3 b)2	6.3.7.3.2.2	**Measurement performance** 2. The project shall collect, store, and verify data.
Perform measurement b)3. Analyze data and develop information items.	6.3.7.3 b)3	6.3.7.3.2.3	**Measurement performance** 3. The project shall analyze data and develop information products.
	6.3.7.3 b)3	6.3.7.3.3.1	**Measurement evaluation** 1. The project shall evaluate information products and the measurement process.
	6.3.7.3 b)3	6.3.7.3.3.2	**Measurement evaluation** 2.1-1 The project shall identify [and communicate] potential improvements.
Perform measurement b)4. Record results and inform the measurement users.	6.3.7.3 b)4	6.3.7.3.2.4	**Measurement performance** 4.1-1&2 The project shall document and communicate results to the measurement users.
	6.3.7.3 b)4	6.3.7.3.3.2	**Measurement evaluation** 2.1-2 The project shall [identify and] communicate potential improvements.
6.3.8 Quality Assurance process			
Prepare for quality assurance a)1.1 Define a Quality Assurance strategy.	6.3.8.3 a)1	7.2.3.3.1.1	7.2.3 Software Quality Assurance Process-3.1 **Process implementation** 1.1 A quality assurance process suited to the project shall be established.
	6.3.8.3 a)1	7.2.3.3.1.1	**Process implementation** 1.2 The objectives of the quality assurance process shall be to assure that the software products and the processes employed for providing those software products comply with their established requirements and adhere to their established plans.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.8.3 a)1	7.2.3.3.1.2	**Process implementation** 2. The quality assurance process should be coordinated with the related Software Verification (subclause 7.2.4), Software Validation (subclause 7.2.5), Software Review (subclause 7.2.6), and Software Audit (subclause 7.2.7) Processes.
	6.3.8.3 a)1	7.2.3.3.1.3	7.2.3 Software Quality Assurance Process- 3.1 **Process implementation** 3.1-1 2&4 A plan for conducting the quality assurance process activities and tasks shall be developed, documented, [implemented,] and maintained for the life of the contract.
	6.3.8.3 a)1	7.2.3.3.1.3	**Process implementation** 3.2 The plan shall include the following: a) Quality standards, methodologies, procedures, and tools for performing the quality assurance activities (or their references in organization's official documentation).b) Procedures for contract review and coordination thereof. c) Procedures for identification, collection, filing, maintenance, and disposition of quality records. d) Resources, schedule, and responsibilities for conducting the quality assurance activities. e) Selected activities and tasks from supporting processes, such as Software Verification (subclause 7.2.4), Software Validation (subclause 7.2.5), Software Review (subclause 7.2.6), Software Audit (subclause 7.2.7), and Software Problem Resolution (subclause 7.2.8).
	6.3.8.3 a)1	7.2.7.3.1.1	7.2.7 Software Audit Process- 3.1 **Process implementation** 1. Audits shall be held at predetermined milestones as specified in the project plan(s).
	6.3.8.3 a)1	7.2.7.3.1.3	**Process implementation** 3. All resources required to conduct the audits shall be agreed by the parties. These resources include support personnel, location, facilities, hardware, software, and tools.
	6.3.8.3 a)1	7.2.7.3.1.4	**Process implementation** 4. The parties should agree on the following items at each audit: agenda; software products (and results of an activity) to be reviewed; audit scope and procedures; and entry and exit criteria for the audit.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.8.3 a)1	7.2.7.3.2.1	**Software audit** 1. Software audits shall be conducted to ensure that: a) As coded, software products (such as a software item) reflect the design documentation. b) The acceptance review and testing requirements prescribed by the documentation are adequate for the acceptance of the software products. c) Test data comply with the specification. d) Software products were successfully tested and meet their specifications. e) Test reports are correct and discrepancies between actual and expected results have been resolved. f) User documentation complies with standards as specified. g) Activities have been conducted according to applicable requirements, plans, and contract. h) The costs and schedules adhere to the established plans.
	6.3.8.3 a)1	7.2.8.3.1.1	7.2.8 Software Problem Resolution Process- 3.1 **Process implementation** 1.1 A problem resolution process shall be established for handling all problems (including nonconformances) detected in the software products and activities.
Prepare for quality assurance a)1.1 Define a Quality Assurance strategy.	6.3.8.3 a)1	7.2.8.3.1.1	**Process implementation** 1.2 The process shall comply with the following requirements: a) The process shall be closed-loop, ensuring that: all detected problems are promptly reported and entered into the Problem Resolution Process; action is initiated on them; relevant parties are advised of the existence of the problem as appropriate; causes are identified, analyzed, and, where possible, eliminated; resolution and disposition are achieved; status is tracked and reported; and records of the problems are maintained as stipulated in the contract. b) The process should contain a scheme for categorizing and prioritizing the problems. Each problem should be classified by the category and priority to facilitate trend analysis and problem resolution. c) Analysis shall be performed to detect trends in the problems reported. d) Problem resolutions and dispositions shall be evaluated: to evaluate that problems have been resolved, adverse trends have been reversed, and changes have been correctly implemented in the appropriate software products and activities; and to determine whether additional problems have been introduced.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Prepare for quality assurance a)1.2 The strategy is consistent with the organizational Quality Management policies and objectives and includes: i) Priorities for applying Quality Assurance resources to processes and tasks that have the most significant impact on the quality of the delivered products and services; ii) Defined roles, responsibilities, accountabilities, and authorities; iii) Evaluation criteria and methods for processes, products, and services, including criteria for product or service acceptance; iv) Activities appropriate to each supplier (including subcontractors); v) Required verification, validation, monitoring, measurement, review, inspection, audit, and test activities specific to the products or services; and vi) Problem resolution and process and product improvement activities.	6.3.8.3 a)1	6.4.9.3.1.2	6.4.9 Software Operation Process- 3.1 **Preparation for operation** 2.1 The operator shall establish procedures for receiving, recording, resolving, tracking problems, and providing feedback.
	6.3.8.3 a)1	7.2.3.3.1.3	**Process implementation** 3.1-1, 2&4 A plan for conducting the quality assurance process activities and tasks shall be developed, documented, [implemented, and] maintained for the life of the contract.
	6.3.8.3 a)1	7.2.3.3.1.3	**Process implementation** 3.2 The plan shall include the following: a) Quality standards, methodologies, procedures, and tools for performing the quality assurance activities (or their references in organization's official documentation). b) Procedures for contract review and coordination thereof. c) Procedures for identification, collection, filing, maintenance, and disposition of quality records. d) Resources, schedule, and responsibilities for conducting the quality assurance activities. e) Selected activities and tasks from supporting processes, such as Software Verification (subclause 7.2.4), Software Validation (subclause 7.2.5), Software Review (subclause 7.2.6), Software Audit (subclause 7.2.7), and Software Problem Resolution (subclause 7.2.8).
	6.3.8.3 a)1	7.2.3.3.4.1	**7.2.3.3.4 Assurance of quality systems** 1. Additional quality management activities may be assured in accordance with the clauses of ISO 9001.
	6.3.8.3 a)1	7.2.6.3.1.2	7.2.6 Software Review Process- 3.1 **Process implementation** 2. All resources that are required to conduct the reviews shall be provided. These resources include personnel, location, facilities, hardware, software, and tools.
	6.3.8.3 a)1	7.2.6.3.1.3	**Process implementation** 3. The parties that participate in a review should agree on the following items at each review: meeting agenda, software products (results of an activity) and problems to be reviewed; scope and procedures; and entry and exit criteria for the review.
Prepare for quality assurance a)1.2 The strategy is consistent with the organizational Quality Management policies and objectives and includes:	6.3.8.3 a)1	7.2.8.3.1.1	**Process implementation** 1.1 A problem resolution process shall be established for handling all problems (including nonconformances) detected in the software products and activities.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.8.3 a)1	7.2.7.3.1.3	**Process implementation** 3. All resources required to conduct the audits shall be agreed by the parties. These resources include support personnel, location, facilities, hardware, software, and tools.
Prepare for quality assurance a)2. Establish independence of quality assurance from other life cycle processes.	6.3.8.3 a)2	7.2.7.3.1.2	**Process implementation** 2. Auditing personnel shall not have any direct responsibility for the software products and activities they audit.
	6.3.8.3 a)2	7.2.3.3.1.6	**Process implementation** 6. It shall be assured that persons responsible for assuring compliance with the contract requirements have the organizational freedom, resources, and authority to permit objective evaluations and to initiate, effect, resolve, and verify problem resolutions.
Perform product or service evaluations	6.3.8.3 b)	7.2.3.3.1.3	**Process implementation** 3.1-3 A plan for conducting the quality assurance process activities and tasks shall be [developed, documented,] implemented [, and maintained] for the life of the contract.
	6.3.8.3 b)	7.2.3.3.1.4	**Process implementation** 4.1 Scheduled and on-going quality assurance activities and tasks shall be executed.
Perform product or service evaluations b)1. Evaluate products and services for conformance to established criteria, contracts, standards, and regulations.	6.3.8.3 b)1	6.4.6.3.1.1	6.4.6 System Qualification Testing Process- 3.1 **Qualification testing** 1.1 System qualification testing shall be conducted in accordance with the qualification requirements specified for the system.
	6.3.8.3 b)1	7.1.7.3.1.1	7.1.7 Software Qualification Testing Process- 3.1 **Software qualification testing** 1.1 The implementer shall conduct qualification testing in accordance with the qualification requirements for the software item.
	6.3.8.3 b)1	7.2.3.3.2.1	**Product assurance** 1. It shall be assured that all the plans required by the contract are documented, comply with the contract, are mutually consistent, and are being executed as required.
	6.3.8.3 b)1	7.2.3.3.2.2	**Product assurance** 2. It shall be assured that software products and related documentation comply with the contract and adhere to the plans.
	6.3.8.3 b)1	7.2.3.3.2.3	**Product assurance** 3. In preparation for the delivery of the software products, it shall be assured that they have fully satisfied their contractual requirements and are acceptable to the acquirer.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.3.8.3 b)1	7.2.3.3.3.3	**Process assurance** 3. It shall be assured that applicable prime-contract requirements are passed down to the subcontractor, and that the subcontractor's software products satisfy prime-contract requirements.
	6.3.8.3 b)1	7.2.6.3.3.1	**Technical Reviews** 1. Technical reviews shall be held to evaluate the software products or services under consideration and provide evidence that: a) They are complete. b) They comply with their standards and specifications. c) Changes to them are properly implemented and affect only those areas identified by the Configuration Management Process (subclause 7.2.2). d) They are adhering to applicable schedules. e) They are ready for the next planned activity. f) The development, operation, or maintenance is being conducted according to the plans, schedules, standards, and guidelines of the project.
Perform product or service evaluations b)1. Evaluate products and services for conformance to established criteria, contracts, standards, and regulations.	6.3.8.3 b)1	7.2.7.3.1.7	**Process implementation** 7. The parties shall agree on the outcome of the audit and any action item responsibilities and closure criteria.
Perform product or service evaluations b)2. Monitor that verification and validation of the outputs of the life cycle processes are performed to determine conformance to specified requirements.	6.3.8.3 b)2	6.4.6.3.1.1	**Qualification testing** 1.2 It shall be ensured that the implementation of each system requirement is tested for compliance and that the system is ready for delivery.
	6.3.8.3 b)2	7.1.7.3.1.1	**Software qualification testing** 1.2 It shall be ensured that the implementation of each software requirement is tested for compliance.
	6.3.8.3 b)2	7.2.7.3.2.1	**Software audit** 1. Software audits shall be conducted to ensure that: a) As coded, software products (such as a software item) reflect the design documentation. b) The acceptance review and testing requirements prescribed by the documentation are adequate for the acceptance of the software products. c) Test data comply with the specification. d) Software products were successfully tested and meet their specifications. e) Test reports are correct and discrepancies between actual and expected results have been resolved. f) User documentation complies with standards as specified. g) Activities have been conducted according to applicable requirements, plans, and contract. h) The costs and schedules adhere to the established plans.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform process evaluations	6.3.8.3 c)	7.2.3.3.1.3	**Process implementation** 3.1-3 A plan for conducting the quality assurance process activities and tasks shall be [developed, documented,] implemented [, and maintained] for the life of the contract.
	6.3.8.3 c)	7.2.3.3.1.4	**Process implementation** 4.1 Scheduled and on-going quality assurance activities and tasks shall be executed.
Perform process evaluations c)1. Evaluate project life cycle processes for conformance.	6.3.8.3 c)1	6.3.7.3.3.1	6.3.7 Measurement Process 3.3- **Measurement evaluation** 1. The project shall evaluate information products and the measurement process.
	6.3.8.3 c)1	7.2.3.3.3.1	**Process assurance** 1. It shall be assured that those software life cycle processes (supply, development, operation, maintenance, and support processes including quality assurance) employed for the project comply with the contract and adhere to the plans.
	6.3.8.3 c)1	7.2.3.3.3.2	**Process assurance** 2. It shall be assured that the internal software engineering practices, development environment, test environment, and libraries comply with the contract.
	6.3.8.3 c)1	7.2.3.3.3.5	**Process assurance** 5. It should be assured that software product and process measurements are in accordance with established standards and procedures.
	6.3.8.3 c)1	7.2.3.3.3.6	**Process assurance** 6. It shall be assured that the staff assigned have the skill and knowledge needed to meet the requirements of the project and receive any necessary training.
	6.3.8.3 c)1	7.2.3.3.4.1	**Assurance of quality systems** 1. Additional quality management activities may be assured in accordance with the clauses of ISO 9001.
	6.3.8.3 c)1	7.2.7.3.2.1	**Software audit** 1. Software audits shall be conducted to ensure that: g) Activities have been conducted according to applicable requirements, plans, and contract.
Perform process evaluations c)2. Evaluate tools and environments that support or automate the process for conformance.	6.3.8.3 c)2	6.2.2.3.3.1	6.2.2 Infrastructure Management Process-3.3 **Maintenance of the infrastructure** 1.1 The infrastructure shall be maintained, monitored, and modified as necessary to ensure that it continues to satisfy the requirements of the process employing this process.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform process evaluations c)3. Evaluate supplier processes for conformance to process requirements.	6.3.8.3 c)3	7.2.3.3.3.3	**Process assurance** 3. It shall be assured that applicable prime-contract requirements are passed down to the subcontractor and that the subcontractor's software products satisfy prime-contract requirements.
	6.3.8.3 c)3	7.2.3.3.3.4	**Process assurance** 4. It shall be assured that the acquirer and other parties are provided the required support and cooperation in accordance with the contract, negotiations, and plans.
Manage QA records and reports	6.3.8.3 d)	7.2.3.3.1.3	**Process implementation** 3.1-3 A plan for conducting the quality assurance process activities and tasks shall be [developed, documented,] implemented [, and maintained] for the life of the contract.
	6.3.8.3 d)	7.2.3.3.1.4	**Process implementation** 4.1 Scheduled and on-going quality assurance activities and tasks shall be executed.
Manage QA records and reports d)1. Create records and reports related to quality assurance activities.	6.3.8.3 d)1	7.2.3.3.1.4	**Process implementation** 4.3 Records of these activities and tasks, their execution, problems, and problem resolutions shall be prepared and maintained.
	6.3.8.3 d)1	7.2.7.3.1.6	7.2.7 Software Audit Process- 3.1 **Process implementation** 6.1-1 After completing an audit, the audit results shall be documented [and provided to the audited party].
Manage QA records and reports d)2. Maintain, store, and distribute records and reports.	6.3.8.3 d)2	7.2.3.3.1.5	**Process implementation** 5. Records of quality assurance activities and tasks shall be made available to the acquirer as specified in the contract.
	6.3.8.3 d)2	7.2.6.3.1.5	**Process implementation** 5.1-1&2 The review results shall be documented and distributed. 5.2 This communication includes adequacy of review (for example, approval, disapproval, or contingent approval) of the review results.
Manage QA records and reports d)3. Identify incidents and problems associated with product, service, and process evaluations.	6.3.8.3 d)3	7.2.3.3.1.4	**Process implementation** 4.2-2 When problems or non-conformances with contract requirements are detected, they shall be [documented and] serve as input to the Problem Resolution Process (subclause 7.2.8).
	6.3.8.3 d)3	7.2.7.3.1.5	**Process implementation** 5.1-2 Problems detected during the audits shall be [recorded and] entered into the Software Problem Resolution Process (subclause 7.2.8) as required.
	6.3.8.3 d)3	7.2.8.3.2.1	**Problem resolution** 1.1 When problems (including non-conformances) have been detected in a software product or an activity, a problem report shall be prepared to describe each problem detected.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Treat incidents and problems	6.3.8.3 e)	7.2.3.3.1.3	**Process implementation** 3.1-3 A plan for conducting the quality assurance process activities and tasks shall be [developed, documented,] implemented [, and maintained] for the life of the contract.
	6.3.8.3 e)	7.2.3.3.1.4	**Process implementation** 4.1 Scheduled and on-going quality assurance activities and tasks shall be executed.
Treat incidents and problems e)1. Record, analyze and classify incidents.	6.3.8.3 e)1	None	None of activities and tasks is mapped.
Treat incidents and problems e)2. Identify selected incidents to associate with known errors or problems.	6.3.8.3 e)2	None	None of activities and tasks is mapped.
Treat incidents and problems e)3. Record, analyze and classify problems.	6.3.8.3 e)3	7.2.3.3.1.4	**Process implementation** 4.2-1&2 When problems or non-conformances with contract requirements are detected, they shall be documented and serve as input to the Problem Resolution Process (subclause 7.2.8).
	6.3.8.3 e)3	7.2.6.3.1.4	**Process implementation** 4. Problems detected during the reviews shall be recorded and entered into the Software Problem Resolution Process (subclause 7.2.8) as required.
	6.3.8.3 e)3	7.2.7.3.1.5	**Process implementation** 5.1-1&2 Problems detected during the audits shall be recorded and entered into the Software Problem Resolution Process (subclause 7.2.8) as required.
	6.3.8.3 e)3	7.2.8.3.2.1	**Problem resolution** 1.1 When problems (including non-conformances) have been detected in a software product or an activity, a problem report shall be prepared to describe each problem detected.
Treat incidents and problems e)4. Identify root causes and treatment of problems where feasible.	6.3.8.3 e)4	7.2.8.3.1.1	**Process implementation** 1.1 A problem resolution process shall be established for handling all problems (including non-conformances) detected in the software products and activities. 1.2 The process shall comply with the following requirements: a) The process shall be closed-loop, ensuring that: all detected problems are promptly reported and entered into the Problem Resolution Process; action is initiated on them; relevant parties are advised of the existence of the problem as appropriate; causes are identified, analyzed, and, where possible, eliminated; resolution and disposition are achieved; status is tracked and reported; and records of the problems are maintained as stipulated in the contract.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Treat incidents and problems e)5. Prioritize treatment of problems (problem resolution) and track corrective actions.	6.3.8.3 e)5	7.2.8.3.1	**Process implementation** 1.1 A problem resolution process shall be established for handling all problems (including non-conformances) detected in the software products and activities. 1.2 The process shall comply with the following requirements: a) The process shall be closed-loop, ensuring that: all detected problems are promptly reported and entered into the Problem Resolution Process; actions initiated on them; relevant parties are advised of the existence of the problem as appropriate; causes are identified, analyzed, and, where possible, eliminated; resolution and disposition are achieved; status is tracked and reported; and records of the problems are maintained as stipulated in the contract. b) The process should contain a scheme for categorizing and prioritizing the problems. Each problem should be classified by the category and priority to facilitate trend analysis and problem resolution.
	6.3.8.3 e)5	7.3.3.3.5.3	7.3.3 Reuse Program Management Process- 3.5 **Execution and Control** 3. Problems and non-conformances that occur during the execution of the reuse program implementation plan shall be recorded and resolved.
Treat incidents and problems e)6. Analyze trends in incidents and problems.	6.3.8.3 e)6	7.2.8.3.1.1	**Process implementation** 1.2 The process shall comply with the following requirements: c) Analysis shall be performed to detect trends in the problems reported.
	6.3.8.3 e)6	7.2.8.3.1.1	**Process implementation** 1.2 d) Problem resolutions and dispositions shall be evaluated: to evaluate that problems have been resolved, adverse trends have been reversed, and changes have been correctly implemented in the appropriate software products and activities; and to determine whether additional problems have been introduced.
Treat incidents and problems e)7. Identify improvements in processes and products that may prevent future incidents and problems.	6.3.8.3 e)7	None	None of activities and tasks is mapped.
Treat incidents and problems e)8. Inform designated stakeholders of the status of incidents and problems.	6.3.8.3 e)8	7.2.7.3.1.6	**Process implementation** 6.2 The audited party shall acknowledge to the auditing party any problems found in the audit and related problem resolutions planned.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Treat incidents and problems e)9. Track incidents and problems to closure.	6.3.8.3 e)9	7.2.8.3.1.1	**Process implementation** 1.2 The process shall comply with the following requirements: d) Problem resolutions and dispositions shall be evaluated: to evaluate that problems have been resolved, adverse trends have been reversed, and changes have been correctly implemented in the appropriate software products and activities; and to determine whether additional problems have been introduced.
	6.3.8.3 e)9	7.2.8.3.2.1	**Problem resolution** 1.2 The problem report shall be used as part of the closed-loop process described above: from detection of the problem, through investigation, analysis and resolution of the problem and its cause, and onto trend detection across problems.
6.4.1 Business or Mission Analysis process			
Prepare for Business or Mission Analysis a)1. Review identified problems and opportunities in the organization strategy with respect to desired organization goals or objectives.	6.4.1.3 a)1	None	None of activities and tasks is mapped.
Prepare for Business or Mission Analysis a)2. Define the business or mission analysis strategy.	6.4.1.3 a)2	None	None of activities and tasks is mapped.
Prepare for Business or Mission Analysis a)3. Identify and plan for the necessary enabling systems or services needed to support business or mission analysis.	6.4.1.3 a)3	6.2.2.3.1.1	6.2.2 Infrastructure Management Process- 3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for Business or Mission Analysis a)4. Obtain or acquire access to the enabling systems or services to be used.	6.4.1.3 a)4	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Define the problem or opportunity space b)1. Analyze customer complaints, problems and opportunities in the context of relevant trade-space factors.	6.4.1.3 b)1	6.4.10.3.2.1	6.4.10 Software Maintenance Process- 3.2 **Problem and modification analysis** 1 The maintainer shall analyze the problem report or modification request for its impact on the organization, the existing system, and the interfacing systems for the following: a) Type; for example, corrective, improvement, preventive, or adaptive to new environment; b) Scope; for example, size of modification, cost involved, time to modify; c) Criticality; for example, impact on performance, safety, or security.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.1.3 b)1	7.2.8.3.2.1	7.2.8 Software Problem Resolution Process- 3.2 **Problem resolution** 1.2 The problem report shall be used as part of the closed-loop process described above: from detection of the problem, through investigation, analysis and resolution of the problem and its cause, and onto trend detection across problems.
Define the problem or opportunity space b)2. Define the mission, business, or operational problem or opportunity.	6.4.1.3 b)2	None	None of activities and tasks is mapped.
Characterize the solution space c)1. Define preliminary operational concepts and other concepts in life cycle stages.	6.4.1.3 c)1	6.4.1.3.2.3	**Requirements identification** 3 The project shall define a representative set of activity sequences to identify all required services that correspond to anticipated operational and support scenarios and environments. NOTE Scenarios are used to analyze the operation of the system in its intended environment in order and to identify requirements that may not have been formally specified by any of the stakeholders, e.g., legal, regulatory and social obligations. The context of use of the system is identified and analyzed. Include in the context analysis the activities that users perform to achieve system objectives, the relevant characteristics of the end-users of the system (e.g., expected training, degree of fatigue), the physical environment (e.g., available light, temperature) and any equipment to be used (e.g., protective or communication equipment). The social and organizational influences on users that could affect system use or constrain its design are analyzed when applicable.
Characterize the solution space c)2. Identify candidate alternative solution classes that span the potential solution space.	6.4.1.3 c)2	None	None of activities and tasks is mapped.
Evaluate alternative solution classes d)1. Assess each alternative solution class.	6.4.1.3 d)1	None	None of activities and tasks is mapped.
Evaluate alternative solution classes d)2. Select the preferred alternative solution class(es).	6.4.1.3 d)2	None	None of activities and tasks is mapped.
Manage the business or mission analysis e)1. Maintain traceability of business or mission analysis.	6.4.1.3 e)1	None	None of activities and tasks is mapped.
Manage the business or mission analysis e)2. Provide key artifacts and information items that have been selected for baselines.	6.4.1.3 e)2	None	None of activities and tasks is mapped.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.4.2 Stakeholder Needs and Requirements Definition process			
Prepare for Stakeholder Needs and Requirements Definition a)1. Identify the stakeholders who have an interest in the software system throughout its life cycle.	6.4.2.3 a)1	6.4.1.3.1.1	6.4.1 Stakeholder Requirements Definition Process- 3.1 **Stakeholder identification** 1. The project shall identify the individual stakeholders or stakeholder classes who have a legitimate interest in the system throughout its life cycle.
Prepare for Stakeholder Needs and Requirements Definition a)2. Define the stakeholder needs and requirements definition strategy.	6.4.2.3 a)2	None	None of activities and tasks is mapped.
Prepare for Stakeholder Needs and Requirements Definition a)3. Identify and plan for the necessary enabling systems or services needed to support stakeholder needs and requirements definition.	6.4.2.3 a)3	6.2.2.3.1.1	6.2.2 Infrastructure Management Process- 3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for Stakeholder Needs and Requirements Definition a)4. Obtain or acquire access to the enabling systems or services to be used.	6.4.2.3 a)4	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Define stakeholder needs b)1. Define context of use within the concept of operations and the preliminary life cycle concepts.	6.4.2.3 b)1	6.4.1.3.2.4	**Requirements identification** 4. The project shall identify the interaction between users and the system, taking into the account human capabilities and skills limitations. NOTE 2 If usability is important, usability requirements should be planned, specified, and implemented through the life cycle processes.
Define stakeholder needs b)2. Identify stakeholder needs.	6.4.2.3 b)2	6.4.1.3.2.1	**Requirements identification** 1. The project shall elicit stakeholder requirements.
Define stakeholder needs b)3. Prioritize and down-select needs.	6.4.2.3 b)3	None	None of activities and tasks is mapped.
Define stakeholder needs b)4. Define the stakeholder needs and rationale.	6.4.2.3 b)4	6.4.1.3.2.1	**Requirements identification** 1. The project shall elicit stakeholder requirements.
Develop the operational concept and other life cycle concepts c)1. Define a representative set of scenarios to identify the required capabilities that correspond to anticipated operational and other life cycle concepts.	6.4.2.3 c)1	6.4.1.3.2.3	**Requirements identification** 3. The project shall define a representative set of activity sequences to identify all required services that correspond to anticipated operational and support scenarios and environments.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Develop the operational concept and other life cycle concepts c)2. Identify the factors affecting interactions between users and the system. i) Anticipated physical, mental, and learned capabilities of the users; ii) Workplace, environment and facilities, including other equipment in the context of use; iii) Normal, unusual, and emergency conditions; and iv) Operator and user recruitment, training and culture.	6.4.2.3 c)2	6.4.1.3.2.4	**Requirements identification** 4. The project shall identify the interaction between users and the system, taking into the account human capabilities and skills limitations.
Transform stakeholder needs into stakeholder requirements d)1. Identify the constraints on a system solution.	6.4.2.3 d)1	6.4.1.3.2.2	**Requirements identification** 2. The project shall define the constraints on a system solution that are unavoidable consequences of existing agreements, management decisions and technical decisions.
Transform stakeholder needs into stakeholder requirements d)2. Identify the stakeholder requirements and functions that relate to critical quality characteristics, such as assurance, safety, security, environment, or health.	6.4.2.3 d)2	6.4.1.3.2.5	**Requirements identification** 5. The project shall specify health, safety, security, environment and other stakeholder requirements and functions that relate to critical qualities and shall address possible adverse effects of use of the system on human health and safety.
Transform stakeholder needs into stakeholder requirements d)3. Define stakeholder requirements, consistent with life cycle concepts, scenarios, interactions, constraints, and critical quality characteristics.	6.4.2.3 d)3	6.4.1.3.2.1	**Requirements identification** 1. The project shall elicit stakeholder requirements.
Analyze stakeholder requirements e)1. Analyze the complete set of stakeholder requirements.	6.4.2.3 e)1	6.4.1.3.3.1	**Requirements evaluation** 1. The project shall analyze the complete set of elicited requirements.
Analyze stakeholder requirements e)2. Define critical performance measures that enable the assessment of technical achievement.	6.4.2.3 e)2	None	None of activities and tasks is mapped.
Analyze stakeholder requirements e)3. Feed back the analyzed requirements to applicable stakeholders to validate that their needs and expectations have been adequately captured and expressed.	6.4.2.3 e)3	6.4.1.3.4.2	**Requirements agreement** 2. The project shall feed back the analyzed requirements to applicable stakeholders to ensure that the needs and expectations have been adequately captured and expressed.
Analyze stakeholder requirements e)4. Resolve stakeholder requirements issues.	6.4.2.3 e)4	6.4.1.3.4.1	**Requirements agreement** 1. The project shall resolve requirements problems.
Manage the stakeholder needs and requirements definition f)1. Obtain explicit agreement with designated stakeholders on the stakeholder requirements.	6.4.2.3 f)1	6.4.1.3.4.3	**Requirements agreement** 3. The project shall establish with stakeholders that their requirements are expressed correctly.
Manage the stakeholder needs and requirements definition f)2. Maintain traceability of stakeholder needs and requirements.	6.4.2.3 f)2	6.4.1.3.5.2	**Requirements recording** 2. The project shall maintain stakeholder requirements traceability to the sources of stakeholder need.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Manage the stakeholder needs and requirements definition f)3. Provide key artifacts and information items that have been selected for baselines.	6.4.2.3 f)3	6.4.1.3.5.1	**Requirements recording** 1. The project shall record the stakeholder requirements in a form suitable for requirements management through the life cycle and beyond.
6.4.3 System/Software Requirements Definition process			
Prepare for System/Software Requirements Definition a)1. Define the functional boundary of the software system or element in terms of the behavior and properties provided.	6.4.3.3 a)1	None	None of activities and tasks is mapped.
Prepare for System/Software Requirements Definition a)2. Define the system/software requirements definition strategy.	6.4.3.3 a)2	None	None of activities and tasks is mapped.
Prepare for System/Software Requirements Definition a)3. Identify and plan for the necessary enabling systems or services needed to support system/software requirements definition.	6.4.3.3 a)3	6.2.2.3.1.1	6.2.2 Infrastructure Management Process- 3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for System/Software Requirements Definition a)4. Obtain or acquire access to the enabling systems or services to be used.	6.4.3.3 a)4	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Define system/software requirements b)1. Define each function that the software system or element is required to perform.	6.4.3.3 b)1	6.4.2.3.1.1	6.4.2 System Requirements Analysis Process- 3.1 **Requirements specification** 1.1 The specific intended use of the system to be developed shall be analyzed to specify system requirements.
Define system/software requirements b)2. Identify required states or modes of operation of the software system.	6.4.3.3 b)2	None	None of activities and tasks is mapped.
Define system/software requirements b)3. Define necessary implementation constraints.	6.4.3.3 b)3	7.1.1.3.1.3	**Software implementation strategy** 3. The implementer shall select, tailor, and use those standards, methods, tools, and computer programming languages (if not stipulated in the contract) that are documented, appropriate, and established by the organization for performing the activities of the Software Implementation Process and supporting processes. NOTE Implementation technology constraints on the design should be identified as part of the software implementation strategy.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Define system/software requirements b)4. Identify requirements that relate to risks, criticality of the software system, or critical quality characteristics.	6.4.3.3 b)4	6.4.2.3.1.1	**Requirements specification** 1.2 The system requirements specification shall describe: functions and capabilities of the system; business, organizational and user requirements; safety, security, human-factors engineering (ergonomics), interface, operations, and maintenance requirements; design constraints and qualification requirements. NOTE 2 The impact of the system requirements on the operating environment should be understood.
	6.4.3.3 b)4	7.1.2.3.1.1	**Software requirements analysis** 1.1-1&2 The implementer shall establish and document software requirements (including the quality characteristics specifications) described below. a) Functional and capability specifications, including performance, physical characteristics, and environmental conditions under which the software item is to perform. d) Safety specifications, including those related to methods of operation and maintenance, environmental influences, and personnel injury. e) Security specifications, including those related to compromise of sensitive information. f) Human-factors engineering (ergonomics) specifications, including those related to manual operations, human-equipment interactions, constraints on personnel, and areas needing concentrated human attention, that are sensitive to human errors and training.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Define system/software requirements b)5. Define system/software requirements and requirements attributes, including the following: i) Data elements, data structures and formats, and database or data retention requirements; ii) User interfaces and user documentation (information for users) and user training; iii) Interfaces with other systems and services; iv) Functions and non-functional characteristics, including critical quality characteristics and cost targets; v) Transition of operational processes and data from existing automated and manual systems, migration approach and schedule, software installation and acceptance of the product; and vi) Requirement attributes, such as rationale; priority; traceability to software system elements, test cases, and information items; methods of verification; inclusion in approved baselines; and evaluated risk.	6.4.3.3 b)5	6.4.2.3.1.1	**Requirements specification** 1.2 The system requirements specification shall describe: functions and capabilities of the system; business, organizational and user requirements; safety, security, human-factors engineering (ergonomics), interface, operations, and maintenance requirements; design constraints and qualification requirements. NOTE 1 Appropriate techniques should be performed to optimize the preferred solution. NOTE 2 The impact of the system requirements on the operating environment should be understood. NOTE 3 System requirements should be prioritized, approved, baselined and communicated to all affected parties. Updates to the requirements baseline should be evaluated for cost, schedule and technical impact.
	6.4.3.3 b)5	7.1.2.3.1.1	**Software requirements analysis** 1.1-1&2 The implementer shall establish and document software requirements (including the quality characteristics specifications) described below. a) Functional and capability specifications, including performance, physical characteristics, and environmental conditions under which the software item is to perform. b) Interfaces external to the software item. c) Qualification requirements. d) Safety specifications, including those related to methods of operation and maintenance, environmental influences, and personnel injury. e) Security specifications, including those related to compromise of sensitive information. f) Human-factors engineering (ergonomics) specifications, including those related to manual operations, human-equipment interactions, constraints on personnel, and areas needing concentrated human attention, that are sensitive to human errors and training. g) Data definition and database requirements. h) Installation and acceptance requirements of the delivered software product at the operation and maintenance site(s). i) User documentation requirements. j) User operation and execution requirements. k) User maintenance requirements. NOTE 2 Implementation priority of the software requirements should be determined.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.3.3 b)5	6.4.10.3.5.2	6.4.10 Software Maintenance Process- 3.5 **Migration** 2.2 The planning activities shall include users. Items included in the plan shall include the following: a) Requirements analysis and definition of migration. b) Development of migration tools. c) Conversion of software product and data. d) Migration execution. e) Migration verification. f) Support for the old environment in the future.
Analyze system/software requirements c)1. Analyze the complete set of system/software requirements.	6.4.3.3 c)1	6.4.2.3.2.1	**Requirements** evaluation 1.1 The system requirements shall be evaluated considering the criteria listed below. a) Traceability to acquisition needs; b) Consistency with acquisition needs; c) Testability d) Feasibility of system architectural design; e) Feasibility of operation and maintenance.
	6.4.3.3 c)1	6.4.2.3.2.1	**Requirements evaluation** 1.2 The results of evaluations shall be documented.
Analyze system/software requirements c)2. Define critical performance measures that enable the assessment of technical achievement.	6.4.3.3 c)2	6.4.2.3.1.1	**Requirements specification** 1.2 The system requirements specification shall describe: functions and capabilities of the system; business, organizational and user requirements; safety, security, human-factors engineering (ergonomics), interface, operations, and maintenance requirements; design constraints and qualification requirements.
	6.4.3.3 c)2	7.1.2.3.1.1	**Software requirements analysis** 1.1-1&2 The implementer shall establish and document software requirements (including the quality characteristics specifications) described below. a) Functional and capability specifications, including performance, physical characteristics, and environmental conditions under which the software item is to perform.
	6.4.3.3 c)2	6.3.7.3.1.2	6.3.7 Measurement Process- 3.1 **Measurement planning** 2 The project shall identify and prioritize the information needs.
Analyze system/software requirements c)3. Feedback the analyzed requirements to applicable stakeholders for review.	6.4.3.3 c)3	7.1.2.3.1.2	**Software requirements analysis** 2.1 The implementer shall evaluate the software requirements considering the criteria listed below. a) Traceability to system requirements and system design. b) External consistency with system requirements. c) Internal consistency. d) Testability. e) Feasibility of software design. f) Feasibility of operation and maintenance.
	6.4.3.3 c)3	7.1.2.3.1.3	**Software requirements analysis** 3. The implementer shall conduct review(s) in accordance with subclause 7.2.6.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Analyze system/software requirements c)4. Identify and resolve issues, deficiencies, conflicts, and weaknesses within the complete set of requirements.	6.4.3.3 c)4	6.4.2.3.2.1	**Requirements evaluation** 1.1 The system requirements shall be evaluated considering the criteria listed below. a) Traceability to acquisition needs; b) Consistency with acquisition needs; c) Testability; d) Feasibility of system architectural design; e) Feasibility of operation and maintenance.
	6.4.3.3 c)4	7.1.2.3.1.2	**Software requirements analysis** 2.1 The implementer shall evaluate the software requirements considering the criteria listed below. a) Traceability to system requirements and system design. b) External consistency with system requirements. c) Internal consistency. d) Testability. e) Feasibility of software design. f) Feasibility of operation and maintenance.
	6.4.3.3 c)4	7.1.2.3.1.2	**Software requirements analysis** 2.2 The results of the evaluations shall be documented.
	6.4.3.3 c)4	7.1.2.3.1.3	**Software requirements analysis** 3. The implementer shall conduct review(s) in accordance with subclause 7.2.6.
Manage system/software requirements d)1. Obtain explicit agreement on the system/software requirements.	6.4.3.3 d)1	7.1.2.3.1.3	**Software requirements analysis** 3. The implementer shall conduct review(s) in accordance with subclause 7.2.6. NOTE Following a successful evaluation and review, the software requirements should be approved, baselined and communicated to all affected parties. Subsequent changes to the software requirements baseline should be evaluated for cost, schedule and technical impact.
Manage system/software requirements d)2. Maintain traceability of the system/software requirements.	6.4.3.3 d)2	7.1.2.3.1.2	**Software requirements analysis** 2.1 The implementer shall evaluate the software requirements considering the criteria listed below. a) Traceability to system requirements and system design. b) External consistency with system requirements. c) Internal consistency. d) Testability. e) Feasibility of software design. f) Feasibility of operation and maintenance.
Manage system/software requirements d)3. Provide key artifacts and information items that have been selected for baselines.	6.4.3.3 d)3	6.4.2.3.1.1	**Requirements specification** 1.3 The system requirements specification shall be documented.
	6.4.3.3 d)3	7.1.2.3.1.1	**Software requirements analysis** 1.1-2 The implementer shall [establish and] document software requirements (including the quality characteristics specifications) described below.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.4.4 Architecture Definition process			
Prepare for architecture definition a)1. Review pertinent information and identify key drivers of the architecture.	6.4.4.3 a)1	None	None of activities and tasks is mapped.
Prepare for architecture definition a)2. Identify stakeholder concerns.	6.4.4.3 a)2	None	None of activities and tasks is mapped.
Prepare for architecture definition a)3. Define the Architecture Definition roadmap, approach, and strategy.	6.4.4.3 a)3	None	None of activities and tasks is mapped.
Prepare for architecture definition a)4. Define architecture evaluation criteria based on stakeholder concerns and key requirements.	6.4.4.3 a)4	None	None of activities and tasks is mapped.
Prepare for architecture definition a)5. Identify and plan for the necessary enabling systems or services needed to support the Architecture Definition process.	6.4.4.3 a)5	6.2.2.3.1.1	6.2.2 Infrastructure Management Process 3.1- **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for architecture definition a)6. Obtain or acquire access to the enabling systems or services to be used.	6.4.4.3 a)6	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Develop architecture viewpoints b)1. Select, adapt, or develop viewpoints and model kinds based on stakeholder concerns.	6.4.4.3 b)1	None	None of activities and tasks is mapped.
Develop architecture viewpoints b)2. Establish or identify potential architecture framework(s) to be used in developing models and views.	6.4.4.3 b)2	None	None of activities and tasks is mapped.
Develop architecture viewpoints b)3. Capture rationale for selection of framework(s), viewpoints and model kinds.	6.4.4.3 b)3	None	None of activities and tasks is mapped.
Develop architecture viewpoints b)4. Select or develop supporting modelling techniques and tools.	6.4.4.3 b)4	None	None of activities and tasks is mapped.
Develop models and views of candidate architectures c)1. Define the software system context and boundaries in terms of interfaces and interactions with external entities.	6.4.4.3 c)1	7.1.3.3.1.2	**Software architectural design** 2.1-1&2 The implementer shall develop and document a top-level design for the interfaces external to the software item and between the software components of the software item.
	6.4.4.3 c)1	7.3.1.3.2.1	7.3.1 Domain Engineering Process- 3.2 **Domain analysis** 1 The domain engineer shall define the boundaries of the domain and the relationships between this domain and other domains.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Develop models and views of candidate architectures c)2. Identify architectural entities and relationships between entities that address key stakeholder concerns and critical software system requirements.	6.4.4.3 c)2	6.4.3.3.1.1	6.4.3 System Architectural Design Process- 3.1 **Establishing architecture** 1.1 A top-level architecture of the system shall be established.
	6.4.4.3 c)2	6.4.3.3.1.1	**Establishing architecture** 1.2 The architecture shall identify items of hardware, software, and manual operations.
	6.4.4.3 c)2	6.4.3.3.1.1	**Establishing architecture** 1.3 It shall be ensured that all the system requirements are allocated among the items.
	6.4.4.3 c)2	6.4.3.3.1.1	**Establishing architecture** 1.4 Hardware configuration items, software configuration items, and manual operations shall be subsequently identified from these items.
	6.4.4.3 c)2	7.1.3.3.1.1	**Software architectural design** 1.1 The implementer shall transform the requirements for the software item into an architecture that describes its top-level structure and identifies the software components.
	6.4.4.3 c)2	7.3.1.3.2.4	**Domain analysis** 4 The domain engineer shall construct a vocabulary that provides the terminology to describe the important domain concepts and the relationships among similar or common assets of the domain.
Develop models and views of candidate architectures c)3. Allocate concepts, properties, characteristics, behaviors, functions, or constraints that are significant to architecture decisions of the software system to architectural entities.	6.4.4.3 c)3	6.4.3.3.1.1	**Establishing architecture** 1.2 The architecture shall identify items of hardware, software, and manual operations.
	6.4.4.3 c)3	6.4.3.3.1.1	**Establishing architecture** 1.3 It shall be ensured that all the system requirements are allocated among the items.
	6.4.4.3 c)3	7.1.3.3.1.1	**Software architectural design** 1.2 It shall be ensured that all the requirements for the software item are allocated to its software components and further refined to facilitate detailed design.
Develop models and views of candidate architectures c)4. Select, adapt, or develop models of the candidate architectures of the software system.	6.4.4.3 c)4	7.3.1.3.1.2	7.3.1 Domain Engineering Process- 3.1 **Process implementation** 2 The domain engineer shall select the form(s) of representation to be used for domain architectures and models.
	6.4.4.3 c)4	7.3.1.3.2.3	**Domain analysis** 3 The domain engineer shall build the domain models using the representation forms selected in the Process Implementation Activity for this process.
	6.4.4.3 c)4	7.3.1.3.2.5	**Domain analysis** 5.1-1&2 The domain engineer shall classify and document the domain models.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.4.3 c)4	7.3.1.3.3.1	**Domain design** 1.1-1&2 The domain engineer shall create and document the domain architecture, consistent with the domain model and following the organization's standards.
Develop models and views of candidate architectures c)5. Compose views from the models in accordance with identified viewpoints to express how the architecture addresses stakeholder concerns and meets stakeholder and system/software requirements.	6.4.4.3 c)5	None	None of activities and tasks is mapped.
Develop models and views of candidate architectures c)6. Harmonize the architecture models and views with each other.	6.4.4.3 c)6	None	None of activities and tasks is mapped.
Relate the architecture to design d)1. Identify software system elements that relate to architectural entities and the nature of these relationships.	6.4.4.3 d)1	6.4.3.3.1.1	**Establishing architecture** 1.2 The architecture shall identify items of hardware, software, and manual operations. NOTE 1 Internal and external interfaces of each system element should be defined in the system architecture. NOTE 2 Human-centred design activities should be identified and performed and human factors and ergonomic knowledge and techniques should be incorporated in system design.
	6.4.4.3 d)1	7.1.3.3.1.1	**Software architectural design** 1.1 The implementer shall transform the requirements for the software item into an architecture that describes its top-level structure and identifies the software components.
	6.4.4.3 d)1	7.1.3.3.1.3	**Software architectural design** 3.1-1&2 The implementer shall develop and document a top-level design for the database.
Relate the architecture to design d)2. Define the interfaces and interactions among the software system elements and external entities.	6.4.4.3 d)2	7.1.3.3.1.2	**Software architectural design** 2.1-1&2 The implementer shall develop and document a top-level design for the interfaces external to the software item and between the software components of the software item.
	6.4.4.3 d)2	7.1.3.3.1.4	**Software architectural design** 4.1-1&2 The implementer should develop and document preliminary versions of user documentation.
Relate the architecture to design d)3. Partition, align and allocate requirements to architectural entities and system elements.	6.4.4.3 d)3	6.4.3.3.1.1	**Establishing architecture** 1.3 It shall be ensured that all the system requirements are allocated among the items.1.4 Hardware configuration items, software configuration items, and manual operations shall be subsequently identified from these items.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.4.3 d)3	7.1.3.3.1.1	**Software architectural design** 1.2 It shall be ensured that all the requirements for the software item are allocated to its software components and further refined to facilitate detailed design.
	6.4.4.3 d)3	7.1.3.3.1.5	**Software architectural design** 5.1-1&2 The implementer shall define and document preliminary test requirements and the schedule for Software Integration.
Relate the architecture to design d)4. Map software system elements and architectural entities to design characteristics.	6.4.4.3 d)4	None	None of activities and tasks is mapped.
Relate the architecture to design d)5. Define principles for the software system design and evolution.	6.4.4.3 d)5	None	None of activities and tasks is mapped.
Assess architecture candidates e)1. Assess each candidate architecture against constraints and requirements.	6.4.4.3 e)1	7.1.3.3.1.6	**Software architectural design** 6.1 The implementer shall evaluate the architecture of the software item and the interface and database designs considering the criteria listed below. a) Traceability to the requirements of the software item. b) External consistency with the requirements of the software item. c) Internal consistency between the software components. d) Appropriateness of design methods and standards used. e) Feasibility of detailed design. f) Feasibility of operation and maintenance.
Assess architecture candidates e)2. Assess each candidate architecture against stakeholder concerns using evaluation criteria.	6.4.4.3 e)2	7.1.3.3.1.6	**Software architectural design** 6.1 The implementer shall evaluate the architecture of the software item and the interface and database designs considering the criteria listed below. a) - f).
Assess architecture candidates e)3. Select the preferred architecture(s) and capture key decisions and rationale.	6.4.4.3 e)3	6.4.3.3.1.1	**Establishing architecture** 1.1 A top-level architecture of the system shall be established.
	6.4.4.3 e)3	6.4.3.3.1.1	**Establishing architecture** 1.2 The architecture shall identify items of hardware, software, and manual operations. NOTE 1 Internal and external interfaces of each system element should be defined in the system architecture. NOTE 2 Human-centred design activities should be identified and performed and human factors and ergonomic knowledge and techniques should be incorporated in system design. NOTE 3 The system architecture design and the relationship with the system requirements should be baselined and communicated to all affected parties.
	6.4.4.3 e)3	7.1.3.3.1.6	**Software architectural design** 6.2 The results of the evaluations shall be documented..

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Assess architecture candidates e)4. Establish the architecture baseline of the selected architecture.	6.4.4.3 e)4	6.4.3.3.1.1	**Establishing architecture** 1.5 The system architecture and the system requirements allocated to the items shall be documented. NOTE 3 The system architecture design and the relationship with the system requirements should be baselined and communicated to all affected parties.
	6.4.4.3 e)4	7.1.3.3.1.7	**Software architectural design** 7. The implementer shall conduct review(s) in accordance with subclause 7.2.6.
Manage the selected architecture f)1. Formalize the architecture governance approach and specify governance-related roles and responsibilities, accountabilities, and authorities related to design, quality, security, and safety.	6.4.4.3 f)1	None	None of activities and tasks is mapped.
Manage the selected architecture f)2. Obtain explicit acceptance of the architecture by stakeholders.	6.4.4.3 f)2	7.1.3.3.1.7	**Software architectural design** 7. The implementer shall conduct review(s) in accordance with subclause 7.2.6.
Manage the selected architecture f)3. Maintain concordance and completeness of the architectural entities and their architectural characteristics.	6.4.4.3 f)3	None	None of activities and tasks is mapped.
Manage the selected architecture f)4. Organize, assess and control evolution of the architecture models and views to help ensure that the architectural intent is met and the architectural vision and key concepts are correctly implemented.	6.4.4.3 f)4	None	None of activities and tasks is mapped.
Manage the selected architecture f)5. Maintain the architecture definition and evaluation strategy.	6.4.4.3 f)5	None	None of activities and tasks is mapped.
Manage the selected architecture f)6. Maintain traceability of the architecture.	6.4.4.3 f)6	6.4.3.3.1.1	**Establishing architecture** 1.3 It shall be ensured that all the system requirements are allocated among the items.1.4 Hardware configuration items, software configuration items, and manual operations shall be subsequently identified from these items.
	6.4.4.3 f)6	6.4.3.3.2.1	**Architectural evaluation** 1.1 The system architecture and the requirements for the items shall be evaluated considering the criteria listed below. a) Traceability to the system requirements. b) Consistency with the system requirements. c) Appropriateness of design standards and methods used. d) Feasibility of the software items fulfilling their allocated requirements. e) Feasibility of operation and maintenance.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.4.3 f)6	7.1.3.3.1.6	**Software architectural design** 6.1 The implementer shall evaluate the architecture of the software item and the interface and database designs considering the criteria listed below. a) Traceability to the requirements of the software item. b) External consistency with the requirements of the software item. c) Internal consistency between the software components. d) Appropriateness of design methods and standards used. e) Feasibility of detailed design. f) Feasibility of operation and maintenance.
Manage the selected architecture f)7. Provide key artifacts and information items that have been selected for baselines.	6.4.4.3 f)7	6.4.3.3.1.1	**Establishing architecture** 1.5 The system architecture and the system requirements allocated to the items shall be documented. NOTE 3 The system architecture design and the relationship with the system requirements should be baselined and communicated to all affected parties.
	6.4.4.3 f)7	6.4.3.3.2.1	**Architectural evaluation** 1.2 The results of the evaluations shall be documented.
	6.4.4.3 f)7	7.1.3.3.1.1	**Software architectural design** 1.3 The architecture of the software item shall be documented.
	6.4.4.3 f)7	7.1.3.3.1.2	**Software architectural design** 2.1-2 The implementer shall [develop and] document a top-level design for the interfaces external to the software item and between the software components of the software item.
	6.4.4.3 f)7	7.1.3.3.1.3	**Software architectural design** 3.1-2 The implementer shall [develop and] document a top-level design for the database.
	6.4.4.3 f)7	7.1.3.3.1.4	**Software architectural design** 4.1-2 The implementer should [develop and] document preliminary versions of user documentation.
	6.4.4.3 f)7	7.1.3.3.1.5	**Software architectural design** 5.1-2 The implementer shall [define and] document preliminary test requirements and the schedule for Software Integration.
	6.4.4.3 f)7	7.1.3.3.1.6	**Software architectural design** 6.2 The results of the evaluations shall be documented.
	6.4.4.3 f)7	7.3.1.3.2.5	**Domain analysis** 5.1-2 The domain engineer shall [classify and] document the domain models.
	6.4.4.3 f)7	7.3.1.3.3.1	**Domain design** 1.1-2 The domain engineer shall [create and] document the domain architecture, consistent with the domain model and following the organization's standards.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.4.3 f)7	7.3.1.3.3.3	**Domain design** 3.1-2 For each entity selected to be designed for reuse, the domain engineer shall [develop and] document an asset specification.
6.4.5 Design Definition process			
Prepare for software system design definition a)1. Define the design definition strategy, consistent with the selected life cycle model and anticipated design artifacts.	6.4.5.3 a)1	None	None of activities and tasks is mapped.
Prepare for software system design definition a)2. Select and prioritize design principles and design characteristics.	6.4.5.3 a)2	7.1.4.3.1.7	**Software detailed design** 7.1 The implementer shall evaluate the software detailed design and test requirements considering the criteria listed below. [The results of the evaluations shall be documented:] a) Traceability to the requirements of the software item; b) External consistency with architectural design; c) Internal consistency between software components and software units; d) Appropriateness of design methods and standards used; e) Feasibility of testing; f) Feasibility of operation and maintenance.
Prepare for software system design definition a)3. Identify and plan for the necessary enabling systems or services needed to support design definition.	6.4.5.3 a)3	6.2.2.3.1.1	6.2.2 Infrastructure Management Process-3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for software system design definition a)4. Obtain or acquire access to the enabling systems or services to be used.	6.4.5.3 a)4	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Establish designs related to each software system element b)1. Transform architectural and design characteristics into the design of software system elements.	6.4.5.3 b)1	7.1.4.3.1.1	**Software detailed design** 1.1 The implementer shall develop a detailed design for each software component of the software item.
	6.4.5.3 b)1	7.1.4.3.1.1	**Software detailed design** 1.2 The software components shall be refined into lower levels containing software units that can be coded, compiled, and tested.
Establish designs related to each software system element b)2. Define and prepare or obtain the necessary design enablers.	6.4.5.3 b)2	None	None of activities and tasks is mapped.
Establish designs related to each software system element b)3. Examine design alternatives and feasibility of implementation.	6.4.5.3 b)3	7.1.4.3.1.5	**Software detailed design** 5.1-1&2 The implementer shall define and document test requirements and the schedule for testing software units.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.5.3 b)3	7.1.4.3.1.5	**Software detailed design** 5.2 The test requirements should include stressing the software unit at the limits of its requirements.
	6.4.5.3 b)3	7.1.4.3.1.6	**Software detailed design** 6. The implementer shall update the test requirements and the schedule for Software Integration.
	6.4.5.3 b)3	7.1.4.3.1.7	**Software detailed design** 7.1 The implementer shall evaluate the software detailed design and test requirements considering the criteria listed below. [The results of the evaluations shall be documented].a) Traceability to the requirements of the software item;b) External consistency with architectural design;c) Internal consistency between software components and software units;d) Appropriateness of design methods and standards used;e) Feasibility of testing;f) Feasibility of operation and maintenance.
	6.4.5.3 b)3	7.1.4.3.1.8	**Software detailed design** 8. The implementer shall conduct review(s) in accordance with subclause 7.2.6.
Establish designs related to each software system element b)4. Refine or define the interfaces among the software system elements and with external entities.	6.4.5.3 b)4	7.1.3.3.1.2	**Software architectural design** 2.1-1&2 The implementer shall develop and document a top-level design for the interfaces external to the software item and between the software components of the software item.
	6.4.5.3 b)4	7.1.4.3.1.2	**Software detailed design** 2.1-1&2 The implementer shall develop and document a detailed design for the interfaces external to the software item, between the software components, and between the software units.
	6.4.5.3 b)4	7.1.4.3.1.2	**Software detailed design** 2.2 The detailed design of the interfaces shall permit coding without the need for further information.
Establish designs related to each software system element b)5. Establish the design artifacts.	6.4.5.3 b)5	7.1.4.3.1.3	**Software detailed design** 3.1-1 The implementer shall develop [and document] a detailed design for the database.
	6.4.5.3 b)5	7.1.4.3.1.4	**Software detailed design** 4. The implementer shall update user documentation as necessary.
Assess alternatives for obtaining software system elements c)1. Determine technologies required for each element composing the software system.	6.4.5.3 c)1	None	None of activities and tasks is mapped.
Assess alternatives for obtaining software system elements c)2. Identify candidate alternatives for the software system elements.	6.4.5.3 c)2	None	None of activities and tasks is mapped.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Assess alternatives for obtaining software system elements c)3. Assess each candidate alternative against criteria developed from expected design characteristics and element requirements to determine suitability for the intended application.	6.4.5.3 c)3	7.1.4.3.1.7	**Software detailed design** 7.1 The implementer shall evaluate the software detailed design and test requirements considering the criteria listed below. [The results of the evaluations shall be documented]. a) Traceability to the requirements of the software item; b) External consistency with architectural design; c) Internal consistency between software components and software units; d) Appropriateness of design methods and standards used; e) Feasibility of testing; f) Feasibility of operation and maintenance.
Assess alternatives for obtaining software system elements c)4. Choose the preferred alternatives among candidate design solutions for the software system elements.	6.4.5.3 c)4	None	None of activities and tasks is mapped.
Manage the design d)1. Capture the design and rationale.	6.4.5.3 d)1	7.1.4.3.1.7	**Software detailed design** 7.1 The implementer shall evaluate the software detailed design and test requirements considering the criteria listed below. [The results of the evaluations shall be documented]. a) Traceability to the requirements of the software item; b) External consistency with architectural design; c) Internal consistency between software components and software units; d) Appropriateness of design methods and standards used; e) Feasibility of testing; f) Feasibility of operation and maintenance.
Manage the design d)2. Establish traceability between the detailed design elements, the system/software requirements, and the architectural entities of the software system architecture.	6.4.5.3 d)2	7.1.4.3.1.1	**Software detailed design** 1.3 It shall be ensured that all the software requirements are allocated from the software components to software units.
	6.4.5.3 d)2	7.1.4.3.1.7	**Software detailed design** 7.1 The implementer shall evaluate the software detailed design and test requirements considering the criteria listed below. [The results of the evaluations shall be documented].a) Traceability to the requirements of the software item;b) External consistency with architectural design;c) Internal consistency between software components and software units;d) Appropriateness of design methods and standards used;e) Feasibility of testing;f) Feasibility of operation and maintenance.
Manage the design d)3. Determine the status of the software system and element design.	6.4.5.3 d)3	7.1.4.3.1.8	7.1.4 Software Detailed Design Process-3.1 **Software detailed design** 8. The implementer shall conduct review(s) in accordance with subclause 7.2.6.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.5.3 d)3	7.1.4.3.1.7	**Software detailed design** 7.1 The implementer shall evaluate the software detailed design and test requirements considering the criteria listed below. [The results of the evaluations shall be documented].a) Traceability to the requirements of the software item;b) External consistency with architectural design;c) Internal consistency between software components and software units;d) Appropriateness of design methods and standards used;e) Feasibility of testing;f) Feasibility of operation and maintenance.
Manage the design d)4. Provide key artifacts and information items that have been selected for baselines.	6.4.5.3 d)4	7.1.4.3.1.1	**Software detailed design** 1.4 The detailed design shall be documented.
	6.4.5.3 d)4	7.1.4.3.1.2	**Software detailed design** 2.1-2 The implementer shall [develop and] document a detailed design for the interfaces external to the software item, between the software components, and between the software units.
	6.4.5.3 d)4	7.1.4.3.1.3	**Software detailed design** 3.1-2 The implementer shall [develop and] document a detailed design for the database.
	6.4.5.3 d)4	7.1.4.3.1.4	**Software detailed design** 4. The implementer shall update user documentation as necessary.
	6.4.5.3 d)4	7.1.4.3.1.5	**Software detailed design** 5.1-2 The implementer shall [define and] document test requirements and the schedule for testing software units.
	6.4.5.3 d)4	7.1.4.3.1.7	**Software detailed design** 7.2 The results of the evaluations shall be documented.
6.4.6 System Analysis process			
Define the system analysis strategy and prepare for system analysis a)1. Identify the problem or question that requires analysis.	6.4.6.3 a)1	None	None of activities and tasks is mapped.
Define the system analysis strategy and prepare for system analysis a)2. Identify the stakeholders of the analysis.	6.4.6.3 a)2	None	None of activities and tasks is mapped.
Define the system analysis strategy and prepare for system analysis a)3. Define the scope, objectives, and level of fidelity of the analysis.	6.4.6.3 a)3	None	None of activities and tasks is mapped.
Define the system analysis strategy and prepare for system analysis a)4 Select the methods to support the analysis.	6.4.6.3 a)4	None	None of activities and tasks is mapped.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Define the system analysis strategy and prepare for system analysis a)5. Identify and plan for the necessary enabling systems or services needed to support the analysis.	6.4.6.3 a)5	6.2.2.3.1.1	6.2.2 Infrastructure Management Process-3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Define the system analysis strategy and prepare for system analysis a)6. Obtain or acquire access to the enabling systems or services to be used.	6.4.6.3 a)6	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Define the system analysis strategy and prepare for system analysis a)7. Collect the data and inputs needed for the analysis.	6.4.6.3 a)7	None	None of activities and tasks is mapped.
Perform system analysis b)1. Identify and validate contexts and assumptions.	6.4.6.3 b)1	None	None of activities and tasks is mapped.
Perform system analysis b)2. Apply the selected analysis methods to perform the required analysis.	6.4.6.3 b)2	None	None of activities and tasks is mapped.
Perform system analysis b)3. Review the analysis results for quality and validity.	6.4.6.3 b)3	None	None of activities and tasks is mapped.
Perform system analysis b)4. Establish conclusions and recommendations.	6.4.6.3 b)4	None	None of activities and tasks is mapped.
Perform system analysis b)5. Record the results of the system analysis,	6.4.6.3 b)5	None	None of activities and tasks is mapped.
Manage the system analysis c)1. Maintain traceability of the analysis results.	6.4.6.3 c)1	None	None of activities and tasks is mapped.
Manage the system analysis c)2. Provide key artifacts and information items that have been selected for baselines.	6.4.6.3 c)2	None	None of activities and tasks is mapped.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.4.7 Implementation process			
Prepare for implementation a)1. Define an implementation strategy, with consideration of the following: i) development policies and standards, including standards that govern applicable safety, security, privacy and environmental practices; programming or coding standards; unit test policies; and language-specific standards for implementing security features; ii) For reused or adapted software, methods to determine the level, source, and suitability of the reused system elements and security of the supply chain; iii) procedures and methods for software development (construction) and development of unit tests; and the use of peer reviews, unit tests, and walkthroughs during implementation; iv) use of CM control during software construction; v) change management considerations for manual processes; vi) implementation priorities to support data and software migration and transition, along with retirement of legacy systems; vii) creation of manual or automated test procedures to verify that a software unit meets its requirements before creation of the software unit (test-driven development); and viii) comprehensive or specialized life cycle development and support environments for realizing and managing requirements, models and prototypes, deliverable system or software elements, and test specifications and test cases.	6.4.7.3 a)1	6.1.2.3.4.4	**Contract execution** 4.1 Once the planning requirements are established, the supplier shall consider the options for developing the software product or providing the software service against an analysis of risks associated with each option. Options include: a) Develop the software product or provide the software service using internal resources. b) Develop the software product or provide the software service by subcontracting. c) Obtain off-the-shelf software products from internal or external sources. d) A combination of a, b, and c above.
	6.4.7.3 a)1	7.1.1.3.1.1	**Software implementation strategy** 1.3 The activities and tasks of the Software Implementation Process shall be selected and mapped onto the life cycle model.
	6.4.7.3 a)1	7.1.1.3.1.4	7.1.1 Software Implementation Process-3.1 **Software implementation strategy** 4.1 The implementer shall develop plans for conducting the activities of the Software Implementation process. The plans should include specific standards, methods, tools, actions, and responsibility associated with the development and qualification of all requirements including safety and security. If necessary, separate plans may be developed.
Prepare for implementation a)2. Identify constraints from the implementation strategy and implementation technology on the system/software requirements, architecture characteristics, design characteristics, or implementation techniques.	6.4.7.3 a)2	None	None of activities and tasks is mapped.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Prepare for implementation a)3. Identify and plan for the necessary and distinct software environments, including enabling systems or services needed to support development and testing.	6.4.7.3 a)3	7.1.1.3.1.2	**Software implementation strategy** 2. The implementer shall: a) Document the outputs in accordance with the Software Documentation Management Process (subclause 7.2.1). b) Place the outputs under the Software Configuration Management Process (subclause 7.2.2) and perform change control in accordance with it. c) Document and resolve problems and non-conformances found in the software products and tasks in accordance with the Software Problem Resolution Process (subclause 7.2.8). d) Perform supporting processes as specified in the contract. e) Establish baselines and incorporate configuration items at appropriate times, as determined by the acquirer and the supplier.
	6.4.7.3 a)3	7.1.1.3.1.3	**Software implementation strategy** 3. The implementer shall select, tailor, and use those standards, methods, tools, and computer programming languages (if not stipulated in the contract) that are documented, appropriate, and established by the organization for performing the activities of the Software Implementation Process and supporting processes.
	6.4.7.3 a)3	6.2.2.3.1.1	6.2.2 Infrastructure Management Process- 3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for implementation a)4. Obtain or acquire access to the software environments and other enabling systems or services.	6.4.7.3 a)4	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Perform implementation b)1. Realize or adapt software elements, according to the strategy, constraints, and defined implementation procedures.	6.4.7.3 b)1	7.1.5.3.1.1	7.1.5 Software Construction Process- 3.1 **Software construction** 1.1-1&2 The implementer shall develop [and document] the following: a) Each software unit and database. b) Test procedures and data for testing each software unit and database.
Perform implementation b)2. Realize or adapt hardware elements of software systems.	6.4.7.3 b)2	None	None of activities and tasks is mapped.
Perform implementation b)3. Realize or adapt service elements of software systems.	6.4.7.3 b)3	None	None of activities and tasks is mapped.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform implementation b)4. Evaluate software unit and affiliated data or other information according to the implementation strategy and criteria.	6.4.7.3 b)4	7.1.5.3.1.2	**Software construction** 2.1 The implementer shall test each software unit and database ensuring that it satisfies its requirements.
	6.4.7.3 b)4	7.1.5.3.1.5	**Software construction** 5.1 The implementer shall evaluate software code and test results considering the criteria listed below. a) Traceability to the requirements and design of the software item. b) External consistency with the requirements and design of the software item. c) Internal consistency between unit requirements. d) Test coverage of units. e) Appropriateness of coding methods and standards used. f) Feasibility of software integration and testing. g) Feasibility of operation and maintenance.
Perform implementation b)5. Package and store the software system element.	6.4.7.3 b)5	7.2.2.3.6.1	7.2.2 Software Configuration Management process- 3.6 **Release management and delivery** 1.3 The code and documentation that contain safety or security critical functions shall be handled, stored, packaged, and delivered in accordance with the policies of the organizations involved.
Perform implementation b)6. Record objective evidence that the software system element meets requirements.	6.4.7.3 b)6	7.1.5.3.1.2	**Software construction** 2.2 The test results shall be documented.
	6.4.7.3 b)6	7.1.5.3.1.5	**Software construction** 5.2 The results of the evaluations shall be documented.
Manage results of implementation c)1. Record implementation results and anomalies encountered.	6.4.7.3 c)1	7.1.5.3.1.2	**Software construction** 2.2 The test results shall be documented.
	6.4.7.3 c)1	7.1.5.3.1.5	**Software construction** 5.2 The results of the evaluations shall be documented.
Manage results of implementation c)2. Maintain traceability of the implemented software system elements.	6.4.7.3 c)2	7.1.5.3.1.5	**Software construction** 5.1 The implementer shall evaluate software code and test results considering the criteria listed below. a) Traceability to the requirements and design of the software item. b) External consistency with the requirements and design of the software item. c) Internal consistency between unit requirements. d) Test coverage of units. e) Appropriateness of coding methods and standards used. f) Feasibility of software integration and testing. g) Feasibility of operation and maintenance.
Manage results of implementation c)3. Provide key artifacts and information items that have been selected for baselines.	6.4.7.3 c)3	7.1.1.3.1.4	**Software implementation strategy** 4.4-1 These plans shall be documented [and executed].

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.7.3 c)3	7.1.5.3.1.1	**Software construction** 1.1-2 The implementer shall [develop and] document the following: a) Each software unit and database. b) Test procedures and data for testing each software unit and database.
	6.4.7.3 c)3	7.1.5.3.1.2	**Software construction** 2.2 The test results shall be documented.
	6.4.7.3 c)3	7.1.5.3.1.3	**Software construction** 3. The implementer shall update the user documentation as necessary.
	6.4.7.3 c)3	7.1.5.3.1.5	**Software construction** 5.2 The results of the evaluations shall be documented.
	6.4.7.3 c)3	7.1.6.3.1.3	**Software integration** 3. The implementer shall update the user documentation as necessary.
6.4.8 Integration process			
Prepare for integration a)1. Define the integration strategy.	6.4.8.3 a)1	7.1.6.3.1.1	7.1.6 Software Integration Process- 3.1 **Software integration** 1.1 The implementer shall develop an integration plan to integrate the software units and software components into the software item.
Prepare for integration a)2. Identify and define criteria for integration and points at which the correct operation and integrity of the interfaces and the selected software system functions will be verified.	6.4.8.3 a)2	7.1.6.3.1.1	**Software integration** 1.2 The plan shall include test requirements, procedures, data, responsibilities, and schedule.
	6.4.8.3 a)2	7.1.6.3.1.5	**Software integration** 5.1 The implementer shall evaluate the integration plan, design, code, tests, test results, and user documentation considering the criteria listed below. a) Traceability to the system requirements. b) External consistency with the system requirements. c) Internal consistency. d) Test coverage of the requirements of the software item. e) Appropriateness of test standards and methods used. f) Conformance to expected results. g) Feasibility of software qualification testing. h) Feasibility of operation and maintenance.
Prepare for integration a)3. Identify and plan for the necessary enabling systems or services needed to support integration.	6.4.8.3 a)3	6.2.2.3.1.1	6.2.2 Infrastructure Management Process- 3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for integration a)4. Obtain or acquire access to the enabling systems or services to be used to support integration.	6.4.8.3 a)4	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Prepare for integration a)5. Identify constraints for integration to be incorporated in the system/software requirements, architecture or design.	6.4.8.3 a)5	None	None of activities and tasks is mapped.
Perform integration b)1. Obtain implemented software system elements in accordance with agreed schedules.	6.4.8.3 b)1	None	None of activities and tasks is mapped.
Perform integration b)2. Integrate the implemented elements.	6.4.8.3 b)2	6.4.5.3.1.1	**Integration** 1.1 The software configuration items shall be integrated, with hardware configuration items, manual operations, and other systems as necessary, into the system.
	6.4.8.3 b)2	7.1.6.3.1.2	**Software integration** 2.1 The implementer shall integrate the software units and software components and test as the aggregates are developed in accordance with the integration plan.
Perform integration b)3. Check that the integrated software interfaces or functions run from initiation to an expected termination within an expected range of data values.	6.4.8.3 b)3	6.4.5.3.1.1	**Integration** 1.2 The aggregates shall be tested, as they are developed, against their requirements.
	6.4.8.3 b)3	6.4.5.3.2.1	**Test readiness** 1.2 The developer shall ensure that the integrated system is ready for System Qualification Testing.
	6.4.8.3 b)3	7.1.6.3.1.2	**Software integration** 2.2 It shall be ensured that each aggregate satisfies the requirements of the software item and that the software item is integrated at the conclusion of the integration activity. NOTE A regression strategy should be developed to be applied for re-verifying the software items when a change is made to software units (including associated requirements, design and code).
	6.4.8.3 b)3	7.1.6.3.1.4	**Software integration** 4.1-1 The implementer shall develop [and document] for each qualification requirement of the software item a set of tests, test cases (inputs, outputs, test criteria), and test procedures for conducting Software Qualification Testing.
	6.4.8.3 b)3	7.1.6.3.1.4	**Software integration** 4.2 The developer shall ensure that the integrated software item is ready for Software Qualification Testing.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform integration b)3. Check that the integrated software interfaces or functions run from initiation to an expected termination within an expected range of data values.	6.4.8.3 b)3	7.1.6.3.1.5	**Software integration** 5.1 The implementer shall evaluate the integration plan, design, code, tests, test results, and user documentation considering the criteria listed below. a) Traceability to the system requirements. b) External consistency with the system requirements. c) Internal consistency. d) Test coverage of the requirements of the software item. e) Appropriateness of test standards and methods used. f) Conformance to expected results. g) Feasibility of software qualification testing. h) Feasibility of operation and maintenance.
	6.4.8.3 b)3	7.1.6.3.1.6	**Software integration** 6. The implementer shall conduct review(s) in accordance with subclause 7.2.6.
Manage results of integration c)1. Record integration results and anomalies encountered.	6.4.8.3 c)1	6.4.5.3.1.1	**Integration** 1.3 The integration and the test results shall be documented.
	6.4.8.3 c)1	7.1.5.3.1.3	7.1.5 Software Construction Process- 3.1 **Software construction** 3. The implementer shall update the user documentation as necessary.
	6.4.8.3 c)1	7.1.6.3.1.2	**Software integration** 2.3 The integration and test results shall be documented.
	6.4.8.3 c)1	7.1.6.3.1.5	**Software integration** 5.2 The results of the evaluations shall be documented.
	6.4.8.3 c)1	7.1.6.3.1.6	**Software integration** 6. The implementer shall conduct review(s) in accordance with subclause 7.2.6.
Manage results of integration c)2. Maintain traceability of the integrated software system elements.	6.4.8.3 c)2	6.4.5.3.1.1	**Integration** 1.2 The aggregates shall be tested, as they are developed, against their requirements.
	6.4.8.3 c)2	6.4.5.3.1.1	**Integration** 1.3 The integration and the test results shall be documented.
	6.4.8.3 c)2	7.1.5.3.1.3	**Software construction** 3. The implementer shall update the user documentation as necessary.
	6.4.8.3 c)2	7.1.6.3.1.3	**Software integration** 3. The implementer shall update the user documentation as necessary.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.8.3 c)2	7.1.6.3.1.5	**Software integration** 5.1 The implementer shall evaluate the integration plan, design, code, tests, test results, and user documentation considering the criteria listed below. a) Traceability to the system requirements. b) External consistency with the system requirements. c) Internal consistency. d) Test coverage of the requirements of the software item. e) Appropriateness of test standards and methods used. f) Conformance to expected results. g) Feasibility of software qualification testing. h) Feasibility of operation and maintenance.
	6.4.8.3 c)2	7.1.6.3.1.5	**Software integration** 5.2 The results of the evaluations shall be documented.
Manage results of integration c)2. Maintain traceability of the integrated software system elements.	6.4.8.3 c)2	7.1.7.3.1.2	7.1.7 Software Qualification Testing Process. 3.1 **Software qualification testing** 2. The implementer shall update the user documentation as necessary.
Manage results of integration c)3. Provide key artifacts and information items that have been selected for baselines.	6.4.8.3 c)3	6.4.5.3.1.1	**Integration** 1.3 The integration and the test results shall be documented.
	6.4.8.3 c)3	7.1.5.3.1.3	**Software construction** 3. The implementer shall update the user documentation as necessary.
	6.4.8.3 c)3	7.1.6.3.1.1	**Integration** 1.3 The plan shall be documented.
	6.4.8.3 c)3	7.1.6.3.1.2	**Software integration** 2.3 The integration and test results shall be documented.
	6.4.8.3 c)3	7.1.6.3.1.3	**Software integration** 3. The implementer shall update the user documentation as necessary.
	6.4.8.3 c)3	7.1.6.3.1.4	**Software integration** 4.1-2 The implementer shall [develop and] document for each qualification requirement of the software item a set of tests, test cases (inputs, outputs, test criteria), and test procedures for conducting Software Qualification Testing.
	6.4.8.3 c)3	7.1.6.3.1.5	**Software integration** 5.2 The results of the evaluations shall be documented.
	6.4.8.3 c)3	7.1.7.3.1.2	**Software qualification testing** 2. The implementer shall update the user documentation as necessary.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.4.9 Verification process			
Prepare for verification a)1. Define the verification strategy, which includes the following: i) Identify the verification scope, including the software system, element, or artifact, the properties to be verified, and the expected results. ii) Identify the constraints that potentially limit the feasibility of verification actions. iii) Identify verification priorities.	6.4.9.3 a)1	7.1.7.3.1.4	7.1.7 Software Qualification Testing process- 3.1 **Software qualification testing** 4.3 If both hardware and software are under development or integration, the audits may be postponed until the System Qualification Testing.
	6.4.9.3 a)1	7.2.4.3.1.1	7.2.4 Software Verification Process- 3.1 **Process implementation** 1.1 A determination shall be made if the project warrants a verification effort and the degree of organizational independence of that effort needed.
	6.4.9.3 a)1	7.2.4.3.1.1	**Process implementation** 1.2 The project requirements shall be analyzed for criticality. Criticality may be gauged in terms of: a) The potential of an undetected error in a system or software requirement for causing death or personal injury, mission failure, or financial or catastrophic equipment loss or damage. b) The maturity of and risks associated with the software technology to be used. c) Availability of funds and resources.
	6.4.9.3 a)1	7.2.4.3.1.2	**Process implementation** 2. If the project warrants a verification effort, a verification process shall be established to verify the software product.
	6.4.9.3 a)1	7.2.4.3.1.3	**Process implementation** 3.1 If the project warrants an independent verification effort, a qualified organization responsible for conducting the verification shall be selected.
	6.4.9.3 a)1	7.2.4.3.1.3	**Process implementation** 3.2 This organization shall be assured of the independence and authority to perform the verification activities.
	6.4.9.3 a)1	7.2.4.3.1.4	**Process implementation** 4.1 Based upon the scope, magnitude, complexity, and criticality analysis above, target life cycle activities and software products requiring verification shall be determined.
	6.4.9.3 a)1	7.2.4.3.1.5	**Process implementation** 5.1-1 Based upon the verification tasks as determined, a verification plan shall be developed [and documented].
	6.4.9.3 a)1	7.2.4.3.1.5	**Process implementation** 5.2 The plan shall address the life cycle activities and software products subject to verification, the required verification tasks for each life cycle activity and software product, and related resources, responsibilities, and schedule.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.9.3 a)1	7.2.4.3.1.6	**Process implementation** 6.1 The verification plan shall be implemented.
	6.4.9.3 a)1	7.1.5.3.1.5	7.1.5 Software Construction Process- 3.1 **Software construction** 5.1 The implementer shall evaluate software code and test results considering the criteria listed below. a) Traceability to the requirements and design of the software item. b) External consistency with the requirements and design of the software item. c) Internal consistency between unit requirements. d) Test coverage of units. e) Appropriateness of coding methods and standards used. f) Feasibility of software integration and testing. g) Feasibility of operation and maintenance.
Prepare for verification a)1. Define the verification strategy,	6.4.9.3 a)1	7.1.6.3.1.2	7.1.6 Software Integration Process- 3.1 **Software integration** 2.1 The implementer shall integrate the software units and software components and test as the aggregates are developed in accordance with the integration plan. NOTE A regression strategy should be developed to be applied for re-verifying the software items when a change is made to software units (including associated requirements, design and code).
Prepare for verification a)2. Identify constraints from the verification strategy to be incorporated in the system/software requirements, architecture, or design.	6.4.9.3 a)2	7.1.6.3.1.6	7.1.6 Software Integration Process- 3.1 **Software integration** 6. The implementer shall conduct review(s) in accordance with subclause 7.2.6.
	6.4.9.3 a)2	7.2.4.3.1.5	**Process implementation** 5.3 The plan shall address procedures for forwarding verification reports to the acquirer and other involved organizations.
Prepare for verification a)3. Define the purpose, conditions and conformance criteria for each verification action.	6.4.9.3 a)3	6.4.5.3.2.1	6.4.5 System Integration Process- 3.2 **Test readiness** 1.1 For each qualification requirement of the system, a set of tests, test cases (inputs, outputs, test criteria), and test procedures for conducting System Qualification Testing shall be developed and documented.
	6.4.9.3 a)3	7.1.4.3.1.5	7.1.4 Software Detailed Design Process- 3.1 **Software detailed design** 5.1-1&2 The implementer shall define and document test requirements and the schedule for testing software units.
	6.4.9.3 a)3	7.1.4.3.1.5	**Software detailed design** 5.2 The test requirements should include stressing the software unit at the limits of its requirements.
	6.4.9.3 a)3	7.1.4.3.1.6	**Software detailed design** 6. The implementer shall update the test requirements [and the schedule] for Software Integration

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.9.3 a)3	7.2.4.3.2.1	**Verification** 1. **Requirements verification**. The requirements shall be verified considering the criteria listed below: a) The system requirements are consistent, feasible, and testable. b) The system requirements have been appropriately allocated to hardware items, software items, and manual operations according to design criteria. c) The software requirements are consistent, feasible, testable, and accurately reflect system requirements. d) The software requirements related to safety, security, and criticality are correct as shown by suitably rigorous methods.
Prepare for verification a)3. Define the purpose, conditions and conformance criteria for each verification action.	6.4.9.3 a)3	7.2.4.3.2.2	**Verification** 2. **Design verification**. The design shall be verified considering the criteria listed below: a) The design is correct and consistent with and traceable to requirements. b) The design implements proper sequence of events, inputs, outputs, interfaces, logic flow, allocation of timing and sizing budgets, and error definition, isolation, and recovery. c) Selected design can be derived from requirements. d) The design implements safety, security, and other critical requirements correctly as shown by suitably rigorous methods.
	6.4.9.3 a)3	7.2.4.3.2.3	**Verification** 3. **Code verification**. The code shall be verified considering the criteria listed below: a) The code is traceable to design and requirements, testable, correct, and compliant with requirements and coding standards. b) The code implements proper event sequence, consistent interfaces, correct data and control flow, completeness, appropriate allocation timing and sizing budgets, and error definition, isolation, and recovery. c) Selected code can be derived from design or requirements. d) The code implements safety, security, and other critical requirements correctly as shown by suitably rigorous methods.
	6.4.9.3 a)3	7.2.4.3.2.4	**Verification** 4. **Integration verification**. The integration shall be verified considering the criteria listed below: a) The software components and units of each software item have been completely and correctly integrated into the software item. b) The hardware items, software items, and manual operations of the system have been completely and correctly integrated into the system. c) The integration tasks have been performed in accordance with an integration plan.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Prepare for verification a)3. Define the purpose, conditions and conformance criteria for each verification action.	6.4.9.3 a)3	7.2.4.3.2.5	**Verification** 5. **Documentation verification**. The documentation shall be verified considering the criteria listed below: a) The documentation is adequate, complete, and consistent. b) Documentation preparation is timely. c) Configuration management of documents follows specified procedures.
Prepare for verification a)4. Select appropriate verification methods or techniques and associated criteria for verification actions, such as inspection, analysis, demonstration, or testing.	6.4.9.3 a)4	7.2.4.3.1.4	**Process implementation** 4.2 Verification activities and tasks defined in subclause 7.2.4.3.2, including associated methods, techniques, and tools for performing the tasks, shall be selected for the target life cycle activities and software products.
Prepare for verification a)5. Identify and plan for the necessary enabling systems or services needed to support verification.	6.4.9.3 a)5	6.2.2.3.1.1	6.2.2 Infrastructure Management Process-3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
	6.4.9.3 a)5	7.2.4.3.1.4	**Process implementation** 4.2 Verification activities and tasks defined in subclause 7.2.4.3.2, including associated methods, techniques, and tools for performing the tasks, shall be selected for the target life cycle activities and software products.
Prepare for verification a)6. Obtain or acquire access to the enabling systems or services to be used to support verification.	6.4.9.3 a)6	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
	6.4.9.3 a)6	7.2.4.3.1.4	**Process implementation** 4.2 Verification activities and tasks defined in subclause 7.2.4.3.2, including associated methods, techniques, and tools for performing the tasks, shall be selected for the target life cycle activities and software products.
Perform verification b)1. Define the verification procedures, each supporting one or a set of verification actions.	6.4.9.3 b)1	7.1.5.3.1.4	**Software construction** 4.1 The implementer shall update the test requirements and the schedule for Software Integration.
	6.4.9.3 b)1	7.1.6.3.1.4	**Software integration** 4.1-1 The implementer shall develop [and document] for each qualification requirement of the software item a set of tests, test cases (inputs, outputs, test criteria), and test procedures for conducting Software Qualification Testing.
Perform verification b)2. Perform the verification procedures.	6.4.9.3 b)2	6.4.5.3.2.2	**Test readiness** 2.1 The integrated system shall be evaluated considering the criteria listed below. a) Test coverage of system requirements. b) Appropriateness of test methods and standards used. c) Conformance to expected results. d) Feasibility of system qualification testing. e) Feasibility of operation and maintenance.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.9.3 b)2	6.4.6.3.1.1	6.4.6 System Qualification Testing Process- 3.1 **Qualification testing** 1.1 System qualification testing shall be conducted in accordance with the qualification requirements specified for the system.
	6.4.9.3 b)2	6.4.6.3.1.1	**Qualification testing** 1.2 It shall be ensured that the implementation of each software requirement is tested for compliance and that the system is ready for delivery.
	6.4.9.3 b)2	6.4.6.3.1.2	**Qualification testing** 2.1 The system shall be evaluated considering the criteria listed below. a) Test coverage of system requirements; b) Conformance to expected results; c) Feasibility of operation and maintenance.
	6.4.9.3 b)2	6.4.6.3.1.3	**Qualification testing** 3.1 The developer shall support audit(s) in accordance with subclause 7.2.7.
	6.4.9.3 b)2	7.1.5.3.1.5	7.1.5 Software Construction Process- 3.1 **Software construction** 5.1 The implementer shall evaluate software code and test results considering the criteria listed below. a) Traceability to the requirements and design of the software item. b) External consistency with the requirements and design of the software item. c) Internal consistency between unit requirements. d) Test coverage of units. e) Appropriateness of coding methods and standards used. f) Feasibility of software integration and testing.g) Feasibility of operation and maintenance.
	6.4.9.3 b)2	7.1.6.3.1.5	**Software integration** 5.1 The implementer shall evaluate the integration plan, design, code, tests, test results, and user documentation considering the criteria listed below. a) Traceability to the system requirements.b) External consistency with the system requirements.c) Internal consistency.d) Test coverage of the requirements of the software item.e) Appropriateness of test standards and methods used.f) Conformance to expected results.g) Feasibility of software qualification testing.h) Feasibility of operation and maintenance.
	6.4.9.3 b)2	7.1.7.3.1.1	**Software qualification testing** 1.1 The implementer shall conduct qualification testing in accordance with the qualification requirements for the software item.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.9.3 b)2	7.1.7.3.1.1	**Software qualification testing** 1.2 It shall be ensured that the implementation of each software requirement is tested for compliance.
Perform verification b)2. Perform the verification procedures.	6.4.9.3 b)2	7.1.7.3.1.3	**Software qualification testing** 3.1 The implementer shall evaluate the design, code, tests, test results, and user documentation considering the criteria listed below. a) Test coverage of the requirements of the software item.b) Conformance to expected results.c) Feasibility of system integration and testing, if conducted.d) Feasibility of operation and maintenance.
	6.4.9.3 b)2	7.1.7.3.1.4	**Software qualification testing** 4.1 The implementer shall support audit(s) in accordance with subclause 7.2.7.
	6.4.9.3 b)2	7.2.4.3.1.6	**Process implementation** 6.1 The verification plan shall be implemented.
	6.4.9.3 b)2	7.2.4.3.1.6	**Process implementation** 6.2 Problems and non-conformances detected by the verification effort shall be entered into the Software Problem Resolution Process (subclause 7.2.8).
	6.4.9.3 b)2	7.2.4.3.2.1	**Verification** 1. Requirements verification. The requirements shall be verified.
	6.4.9.3 b)2	7.2.4.3.2.2	**Verification** 2. Design verification. The design shall be verified.
	6.4.9.3 b)2	7.2.4.3.2.3	**Verification** 3. Code verification. The code shall be verified.
	6.4.9.3 b)2	7.2.4.3.2.4	**Verification** 4. Integration verification. The integration shall be verified.
	6.4.9.3 b)2	7.2.4.3.2.5	**Verification** 5. Documentation verification. The documentation shall be verified.
Perform verification b)2. Perform the verification procedures.	6.4.9.3 b)2	7.2.6.3.3.1	7.2.6 Software Review Process- 3.1 **Technical Reviews**. 1 Technical reviews shall be held to evaluate the software products or services under consideration and provide evidence that: a) They are complete. b) They comply with their standards and specifications. c) Changes to them are properly implemented and affect only those areas identified by the Configuration Management Process (subclause 7.2.2). d) They are adhering to applicable schedules. e) They are ready for the next planned activity. f) The development, operation, or maintenance is being conducted according to the plans, schedules, standards, and guidelines of the project.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Manage results of verification c)1. Review verification results and anomalies encountered and identify follow-up actions.	6.4.9.3 c)1	7.2.4.3.1.6	**Process implementation** 6.3 All problems and non-conformances shall be resolved.
	6.4.9.3 c)1	7.2.4.3.1.6	**Process implementation** 6.4 Results of the verification activities shall be made available to the acquirer and other involved organizations
	6.4.9.3 c)1	7.2.6.3.3.1	**Technical Reviews** 1. Technical reviews shall be held to evaluate the software products or services under consideration and provide evidence
Manage results of verification c)2. Record incidents and problems during verification and track their resolution.	6.4.9.3 c)2	6.4.6.3.1.1	**Qualification testing** 1.3 The qualification testing results shall be documented.
	6.4.9.3 c)2	6.4.6.3.1.2	**Qualification testing** 2.2 The results of the evaluations shall be documented.
	6.4.9.3 c)2	6.4.6.3.1.3	**Qualification testing** 3.2 The results of the audit(s) shall be documented.
	6.4.9.3 c)2	7.1.7.3.1.1	**Software qualification testing** 1.3 The qualification testing results shall be documented.
	6.4.9.3 c)2	7.1.7.3.1.3	**Software qualification testing** 3.2 The results of the evaluations shall be documented.
	6.4.9.3 c)2	7.1.7.3.1.4	**Software qualification testing** 4.1 The implementer shall support audit(s) in accordance with subclause 7.2.7.
	6.4.9.3 c)2	7.1.7.3.1.4	**Software qualification testing** 4.2 The results of the audits shall be documented.
	6.4.9.3 c)2	7.2.4.3.1.6	**Process implementation** 6.2 Problems and non-conformances detected by the verification effort shall be entered into the Software Problem Resolution Process (subclause 7.2.8).
Manage results of verification c)3. Obtain stakeholder agreement that the software system or element meets the specified requirements.	6.4.9.3 c)3	7.2.4.3.1.6	**Process implementation** 6.4 Results of the verification activities shall be made available to the acquirer and other involved organizations
Manage results of verification c)4. Maintain traceability of the verified software elements.	6.4.9.3 c)4	7.1.6.3.1.2	**Software integration** 2.2 It shall be ensured that each aggregate satisfies the requirements of the software item and that the software item is integrated at the conclusion of the integration activity.
Manage results of verification c)5. Provide key artifacts and information items that have been selected for baselines.	6.4.9.3 c)5	6.4.6.3.1.4	**Qualification testing** 4 Upon successful completion of the audit(s), if conducted, the developer shall update and prepare the deliverable software product for Software Installation and Software Acceptance Support.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.9.3 c)5	7.1.7.3.1.5	**Software qualification testing** 5. Upon successful completion of the audits, if conducted, the implementer shall update and prepare the deliverable software product for System Integration, System Qualification Testing, Software Installation, or Software Acceptance Support as applicable.
	6.4.9.3 c)5	7.1.7.3.1.2	**Software qualification testing** 2. The implementer shall update the user documentation as necessary.
	6.4.9.3 c)5	7.2.4.3.1.5	**Process implementation** 5.1-2 Based upon the verification tasks as determined, a verification plan shall be [developed and] documented.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.4.10 Transition process			
Prepare for the software system transition a)1. Define a strategy for managing software releases and other software system transitions, including the following considerations: i) establishing the type of transition and transition success criteria; ii) determining the frequency of recurring transitions, such as updates and upgrades to development, test, and operational software systems; iii) minimizing security risks, disruption, and downtime during transition; iv) archiving, destroying, or converting and validating data from previous systems to the new system; including data received through external interfaces; v) contingency planning for problem resolution, backup and return to the last working system version; vi) scheduling transitions consistent with ongoing business processing, with phased or synchronized transition of systems vii) change management for stakeholders, including interface partners, human operators, system administrators, and software system or service users; viii) associated strategies for validation of the transitioning system or element; ix) initiating user support and maintenance activities with the transfer and update of system design documentation, user documentation, and test procedures; and x) concurrent execution of the Transition, Operations, and Disposal processes, when a new system is commissioned and an old system is decommissioned.	6.4.10.3 a)1	6.4.7.3.1.1	6.4.7 Software installation Process- 3.1 **Software installation** 1.1 The implementer shall develop a plan to install the software product in the target environment as designated in the contract. NOTE 1 The software installation strategy should be developed in agreement with the customer and the operating organization. NOTE 2 An important part of developing an installation strategy is to develop a strategy to return to the last working system version. In order to be able to re-install the last working version, a complete backup of the system should be made before starting the installation. NOTE 3 Based on the installation requirements, the installer should develop criteria for the environment where the software will be installed. NOTE 4 The installer should specify the requirements for adaptation of the system for its intended environment. NOTE 5 The installer should adapt the system to meet the requirements for operation.
	6.4.10.3 a)1	6.4.10.3.5.2	6.4.10 Software Maintenance Process- 3.5 **Migration** 2.1-1&2 A migration plan shall be developed, documented, [and executed.]
	6.4.10.3 a)1	6.4.10.3.5.2	**Migration** 2.2 The planning activities shall include users. Items included in the plan shall include the following: a) Requirements analysis and definition of migration. b) Development of migration tools. c) Conversion of software product and data. d) Migration execution. e) Migration verification. f) Support for the old environment in the future.
	6.4.10.3 a)1	6.4.10.3.5.7	**Migration** 7 Data used by or associated with the old environment shall be accessible in accordance with the contract requirements for data protection and audit applicable to the data.
Prepare for the software system transition a)2. Identify and define facility, site, communications network, or target environment changes needed for software system installation or transition.	6.4.10.3 a)2	6.4.7.3.1.1	**Software installation** 1.2 The resources and information necessary to install the software product shall be determined and be available.
Prepare for the software system transition a)3. Identify information needs and arrange for user documentation and training of operators, users, and other stakeholders necessary for system utilization and support.	6.4.10.3 a)3	6.4.7.3.1.1	**Software installation** 1.2 The resources and information necessary to install the software product shall be determined and be available.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.10.3 a)3	6.4.10.3.5.3	6.4.10 Software Maintenance Process-3.5 **Migration** 3.1 Users shall be given notification of the migration plans and activities.
	6.4.10.3 a)3	6.4.10.3.5.3	**Migration** 3.2 Notifications shall include the following: a) Statement of why the old environment is no longer to be supported. b) Description of the new environment with its date of availability. c) Description of other support options available, if any, once support for the old environment has been removed
	6.4.10.3 a)3	6.4.10.3.5.5	**Migration** 5.1 When the scheduled migration arrives, notification shall be sent to all concerned.
Prepare for the software system transition a)4. Prepare detailed transition information, such as plans, schedules, and procedures.	6.4.10.3 a)4	6.4.7.3.1.1	**Software installation** 1.1 The implementer shall develop a plan to install the software product in the target environment as designated in the contract.
	6.4.10.3 a)4	6.4.10.3.5.2	**Migration** 2.1-1&2 A migration plan shall be developed, documented, [and executed.]
	6.4.10.3 a)4	6.4.10.3.5.2	**Migration** 2.2 The planning activities shall include users. Items included in the plan shall include the following: a) Requirements analysis and definition of migration. b) Development of migration tools. c) Conversion of software product and data. d) Migration execution. e) Migration verification. f) Support for the old environment in the future.
Prepare for the software system transition a)5. Identify system constraints from transition to be incorporated in the software system requirements, architecture or design.	6.4.10.3 a)5	None	None of activities and tasks is mapped.
Prepare for the software system transition a)6. Identify and plan for the necessary enabling systems or services needed to support transition.	6.4.10.3 a)6	6.2.2.3.1.1	6.2.2 Infrastructure Management Process-3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for the software system transition a)7. Obtain or acquire access to the enabling systems or services to be used.	6.4.10.3 a)7	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Perform the transition b)1. Prepare the site of operation or virtual environment in accordance with installation requirements.	6.4.10.3 b)1	None	None of activities and tasks is mapped.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform the transition b)2. Deliver the software system or element for installation at the correct location and time.	6.4.10.3 b)2	6.4.8.3.1.2	**Software acceptance support** 2. The developer shall complete and deliver the software product as specified in the contract. NOTE The contract may require the developer to put the product into operation in the customer's environment.
Perform the transition b)3. Install the product in its physical or virtual operational location and interface to its environment. NOTE The product installation includes configuring it with required operational data, changes to the environment, or business process changes. Databases are instantiated and data migration is performed as applicable. Licenses and maintenance agreements for system elements, and other intellectual property, are transferred according to agreements.	6.4.10.3 b)3	6.4.7.3.1.1	**Software installation** 1.4 Where the installed software product is replacing an existing system, the implementer shall support any parallel running activities that are required by contract.
	6.4.10.3 b)3	6.4.7.3.1.2	**Software installation** 2.1 The developer shall install the software product in accordance with the installation plan.
	6.4.10.3 b)3	6.4.7.3.1.2	**Software installation** 2.2 It shall be ensured that the software code and databases initialize, execute, and terminate as specified in the contract.
	6.4.10.3 b)3	6.4.10.3.5.2	6.4.10 Software Maintenance Process- 3.5 **Migration** 2.1-3 A migration plan shall be [developed,] [documented], and executed.
	6.4.10.3 b)3	6.4.10.3.5.4	**Migration** 4.1 Parallel operations of the old and new environments may be conducted for smooth transition to the new environment.
	6.4.10.3 b)3	6.4.10.3.5.7	**Migration** 7. Data used by or associated with the old environment shall be accessible in accordance with the contract requirements for data protection and audit applicable to the data.
Perform the transition b)4. Provide user documentation and training for the operators, users, and other stakeholders necessary for product utilization and support.	6.4.10.3 b)4	6.4.7.3.1.1	**Software installation** 1.3 As specified in the contract, the implementer shall assist the acquirer with the set-up activities.
	6.4.10.3 b)4	6.4.8.3.1.3	**Software acceptance support** 3. The developer shall provide initial and continuing training and support to the acquirer as specified in the contract.
	6.4.10.3 b)4	6.4.10.3.5.4	**Migration** 4.2 During this period, necessary training shall be provided as specified in the contract.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform the transition b)5. Perform activation and check_out, including the following as agreed: i) Demonstrate proper installation of the software system. ii) Demonstrate the installed or transitioned product is capable of delivering its required functions. iii) Demonstrate the functions provided by the system are sustainable by the enabling systems. iv) Review the software system for operational readiness. v) Commission the software system for operations.	6.4.10.3 b)5	6.4.7.3.1.2	**Software installation** 2.2 It shall be ensured that the software code and databases initialize, execute, and terminate as specified in the contract. NOTE The installer should assure that the software product is ready for use in its intended environment.
	6.4.10.3 b)5	6.4.8.3.1.1	**Software acceptance support** 1.1 The developer shall support the acquirer's acceptance review and testing of the software product. 1.2 Acceptance review and testing shall consider the results of the Software Review (subclause 7.2.6), Software Audit (subclause 7.2.7), Software Qualification Testing, and System Qualification Testing (if performed) processes. NOTE This includes documentation and communication of problems detected during acceptance testing to those responsible for resolution.
Manage results of transition c)1. Record transition results and anomalies encountered.	6.4.10.3 c)1	6.4.7.3.1.2	**Software installation** 2.3 The installation events and results shall be documented.
Manage results of transition c)2. Record transition incidents and problems and track their resolution.	6.4.10.3 c)2	6.4.7.3.1.2	**Software installation** 2.3 The installation events and results shall be documented.
	6.4.10.3 c)2	6.4.10.3.5.6	**Migration** 6.1 A post-operation review shall be performed to assess the impact of changing to the new environment. 6.2 The results of the review shall be sent to the appropriate authorities for information, guidance, and action.
Manage results of transition c)3. Maintain traceability of the transitioned software system elements.	6.4.10.3 c)3	6.4.8.3.1.1	**Software acceptance support** 1.2 Acceptance review and testing shall consider the results of the Software Review (subclause 7.2.6), Software Audit (subclause 7.2.7), Software Qualification Testing, and System Qualification Testing (if performed) processes.
	6.4.10.3 c)3	6.4.10.3.5.5	**Migration** 5.2 Associated old environment documentation, logs, and code should be placed in archives.
Manage results of transition c)4. Provide key artifacts and information items that have been selected for baselines.	6.4.10.3 c)4	6.4.7.3.1.1.1	**Software installation** 1.5 The installation plan shall be documented.
	6.4.10.3 c)4	6.4.8.3.1.1.1	**Software acceptance support** 1.3 The results of the acceptance review and testing shall be documented.
	6.4.10.3 c)4	6.4.10.3.5.2	**Migration** 2.1-2 A migration plan shall be [developed,] documented, [and executed.]

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.4.11 Validation process			
Prepare for validation a)1. Define the validation strategy, which includes the following: i) Identify the validation scope, including the characteristics of the software system, element, or artifact to be validated, and the expected results of validation. ii) Identify the constraints that potentially limit the feasibility of validation actions. iii) Identify validation priorities.	6.4.11.3 a)1	7.2.5.3.1.1	7.2.5 Software Validation Process- 3.1 **Process implementation** 1. A determination shall be made if the project warrants a validation effort and the degree of organizational independence of that effort needed.
	6.4.11.3 a)1	7.2.5.3.1.2	**Process implementation** 2.1 If the project warrants a validation effort, a validation process shall be established to validate the system or software product.
	6.4.11.3 a)1	7.2.5.3.1.3	**Process implementation** 3.1 If the project warrants an independent effort, a qualified organization responsible for conducting the effort shall be selected. 3.2 The conductor shall be assured of the independence and authority to perform the validation tasks.
	6.4.11.3 a)1	7.2.5.3.1.4	**Process implementation** 4.1-1&2 A validation plan shall be developed and documented.
	6.4.11.3 a)1	7.2.5.3.1.4	**Process implementation** 4.2 The plan shall include, but is not limited to, the following: a) Items subject to validation. b) Validation tasks to be performed. c) Resources, responsibilities, and schedule for validation. d) Procedures for forwarding validation reports to the acquirer and other parties.
Prepare for validation a)2. Identify system constraints from the validation strategy to be incorporated in the stakeholder requirements.	6.4.11.3 a)2	None	None of activities and tasks is mapped.
Prepare for validation a)3. Define the purpose, conditions and conformance criteria for each validation action.	6.4.11.3 a)3	7.2.5.3.2.1	**Validation** 1. Prepare selected test requirements, test cases, and test specifications for analyzing test results.
	6.4.11.3 a)3	7.2.5.3.2.2	**Validation** 2. Ensure that these test requirements, test cases, and test specifications reflect the particular requirements for the specific intended use.
Prepare for validation a)4. Select appropriate validation methods or techniques and associated criteria for each validation action.	6.4.11.3 a)4	7.2.5.3.1.2	**Process implementation** 2.2 Validation tasks defined below, including associated methods, techniques, and tools for performing the tasks, shall be selected.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.11.3 a)4	7.2.5.3.2.3	**Validation** 3. Conduct the tests in subclauses 7.2.5.3.2.1 and 7.2.5.3.2.2, including: a) Testing with stress, boundary, and singular inputs; b) Testing the software product for its ability to isolate and minimize the effect of errors; that is, graceful degradation upon failure, request for operator assistance upon stress, boundary, and singular conditions; c) Testing that representative users can successfully achieve their intended tasks using the software product.
Prepare for validation a)5. Identify and plan for the necessary enabling systems or services needed to support validation.	6.4.11.3 a)5	6.2.2.3.1.1	6.2.2 Infrastructure Management Process- 3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for validation a)6. Obtain or acquire access to the enabling systems or services to be used to support validation.	6.4.11.3 a)6	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Perform validation b)1. Define the validation procedures, each supporting one or a set of validation actions.	6.4.11.3 b)1	7.2.5.3.2.1	**Validation** 1. Prepare selected test requirements, test cases, and test specifications for analyzing test results. NOTE Other means besides testing (such as, analysis, modelling, simulation, etc.) may be employed for validation.
	6.4.11.3 b)1	7.2.5.3.2.2	**Validation** 2. Ensure that these test requirements, test cases, and test specifications reflect the particular requirements for the specific intended use.
Perform validation b)2. Perform the validation procedures in the defined environment.	6.4.11.3 b)2	6.4.8.3.1.1	6.4.8 Software Acceptance Support Process- 3.1 **Software acceptance support** 1.1 The developer shall support the acquirer's acceptance review and testing of the software product.
	6.4.11.3 b)2	6.4.9.3.2.1	6.4.9 Software Operation Process- 3.2 **Operation activation and check-out** 1. For each release of the software product, the operator shall perform operational testing, and, on satisfying the specified criteria, release the software product for operational use.
	6.4.11.3 b)2	6.4.9.3.2.2	**Operation activation and check-out** 2. The operator shall ensure that the software code and databases initialize, execute, and terminate as described in the plan.
	6.4.11.3 b)2	7.2.5.3.1.5	**Process implementation** 5.1 The validation plan shall be implemented.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform validation b)2. Perform the validation procedures in the defined environment.	6.4.11.3 b)2	7.2.5.3.2.3	**Validation** 3. Conduct the tests in subclauses 7.2.5.3.2.1 and 7.2.5.3.2.2, including: a) Testing with stress, boundary, and singular inputs; b) Testing the software product for its ability to isolate and minimize the effect of errors; that is, graceful degradation upon failure, request for operator assistance upon stress, boundary, and singular conditions; c) Testing that representative users can successfully achieve their intended tasks using the software product.
	6.4.11.3 b)2	7.2.5.3.2.4	**Validation** 4. Validate that the software product satisfies its intended use.
	6.4.11.3 b)2	7.2.5.3.2.5	**Validation** 5. Test the software product as appropriate in selected areas of the target environment.
	6.4.11.3 b)2	7.2.6.3.3.1	7.2.6 Software Review Process- 3.3 **Technical Reviews** 1.Technical reviews shall be held to evaluate the software products or services under consideration and provide evidence that: a)-f).
Manage results of validation c)1. Review validation results and anomalies encountered and identify follow-up actions.	6.4.11.3 c)1	6.4.8.3.1.1	**Software acceptance support** 1.2 Acceptance review and testing shall consider the results of the Software Review (subclause 7.2.6), Software Audit (subclause 7.2.7), Software Qualification Testing, and System Qualification Testing (if performed) processes.
	6.4.11.3 c)1	7.2.6.3.3.1	**Technical Reviews** 1. Technical reviews shall be held to evaluate the software products or services under consideration and provide evidence
Manage results of validation c)2. Record incidents and problems during validation and track their resolution.	6.4.11.3 c)2	6.4.8.3.1.1	**Software acceptance support** 1.3 The results of the acceptance review and testing shall be documented.
	6.4.11.3 c)2	7.2.5.3.1.5	**Process implementation** 5.2 Problems and non-conformances detected by the validation effort shall be entered into the Software Problem Resolution Process (subclause 7.2.8).
	6.4.11.3 c)2	7.2.5.3.1.5	**Process implementation** 5.3 All problems and non-conformances shall be resolved..
Manage results of validation c)3. Obtain stakeholder agreement that the software system or element meets the stakeholder needs.	6.4.11.3 c)3	7.2.5.3.1.5	**Process implementation** 5.4 Results of the validation activities shall be made available to the acquirer and other involved organizations.
Manage results of validation c)4. Maintain traceability of the validated system elements.	6.4.11.3 c)4	7.2.5.3.2.2	**Validation** 2. Ensure that these test requirements, test cases, and test specifications reflect the particular requirements for the specific intended use.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.11.3 c)4	7.2.5.3.2.4	**Validation** 4. Validate that the software product satisfies its intended use.
Manage results of validation c)5. Provide key artifacts and information items that have been selected for baselines.	6.4.11.3 c)5	7.2.5.3.1.4	**Process implementation** 4.1-2 A validation plan shall be [developed and] documented.
6.4.12 Operation process			
Prepare for operation a)1. Define an operation strategy, including the following considerations: i) The expected or agreed capacity, availability, response time, and security of services as they are introduced, routinely operated and withdrawn from service; ii) The human resources strategy, depending on the need to define training and qualification requirements, train or obtain personnel to control and monitor software system operations, administer system access, and support customer service requests and user assistance; iii) The release criteria and schedules of the software system to permit modifications that sustain existing or enhanced services; iv) The approach to implement the operational modes in the Operational Concept, including normal operations and preparations for, and testing of, envisioned types of contingency operations; v) Measures for operation that will provide insight into performance levels; vi) The operational and occupational safety strategy for operators and others using or in contact with the software system during operation, accounting for safety regulations; and vii) The environmental protection and sustainability strategy for operating the software system.	6.4.12.3 a)1	6.4.9.3.1.1	6.4.9 Software Operation Process- 3.1 **Preparation for operation** 1.1 The operator shall develop a plan and set operational standards for performing the activities and tasks of this process.
	6.4.12.3 a)1	6.4.9.3.1.2	**Preparation for operation** 2.1 The operator shall establish procedures for receiving, recording, resolving, tracking problems, and providing feedback.
	6.4.12.3 a)1	6.4.9.3.1.3	**Preparation for operation** 3. The operator shall establish procedures for testing the software product in its operation environment, for entering problem reports and modification requests to the Software Maintenance Process (subclause 6.4.10), and for releasing the software product for operational use.
Prepare for operation a)2. Identify system constraints from operation to be incorporated in changes to the system/software requirements, architecture, design, implementation, or transition.	6.4.12.3 a)2	None	None of activities and tasks is mapped.
Prepare for operation a)3. Identify and plan for the necessary enabling systems or services needed to support operation.	6.4.12.3 a)3	6.2.2.3.1.1	6.2.2 Infrastructure Management Process-3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for operation a)4. Obtain or acquire access to the enabling systems or services to be used.	6.4.12.3 a)4	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Prepare for operation a)5. Identify or define training and qualification requirements for personnel needed for software system operation.	6.4.12.3 a)5	6.2.4.3.1.2	6.2.4 Human Resource Management Process- 3.1 **Skill identification** 2. The types and levels of training and knowledge needed to satisfy organization and project requirements shall be determined.
Prepare for operation a)6. Depending on the need for human intervention and control of operations, assign trained, qualified personnel to be operators.	6.4.12.3 a)6	6.2.4.3.3.8	**Skill acquisition and provision** 8. It should be ensured that the right mix and categories of appropriately trained personnel are available for the planned activities and tasks in a timely manner.
Perform operation	6.4.12.3 b)	6.4.9.3.1.1	**Preparation for operation** 1.2-2 The plan shall be [documented and] executed.
Perform operation b)1. Use the software system in its intended operational environment.	6.4.12.3 b)1	6.4.8.3.1.2	6.4.8 Software Acceptance Support Process- 3.1 **Software acceptance support** 2. The developer shall complete and deliver the software product as specified in the contract. NOTE The contract may require the developer to put the product into operation in the customer's environment.
	6.4.12.3 b)1	6.4.9.3.2.3	**Operation activation and checkout** 3. The operator shall activate the system in its intended operational situation to deliver instances of service or continuous service according to its intended purpose.
	6.4.12.3 b)1	6.4.9.3.3.1	**Operational use** 1. The system shall be operated in its intended environment according to the user documentation.
NOTE Where agreed, continuous service capacity and quality is maintained when the software system replaces an existing system or element that is being retired.	6.4.12.3 b)1	6.4.10.3.5.4	6.4.10 Software Maintenance Process- 3.5 **Migration** 4.1 Parallel operations of the old and new environments may be conducted for smooth transition to the new environment.
Perform operation b)2. Apply materials and other resources, as required, to operate the software system and sustain its services.	6.4.12.3 b)2	None	None of activities and tasks is mapped.
Perform operation b)3. Monitor software system operation, including consideration of the following: i) Managing adherence to the operation strategy (e.g. , operational procedures); ii) Recording and reporting significant events, such as possible breaches of software and data confidentiality and integrity; iii) Operating the software system in a safe manner and compliant with legislated guidelines e.g. , those concerning occupational safety and environmental protection; and iv) Recording when software system or service performance is not within acceptable parameters.	6.4.12.3 b)3	6.4.9.3.1.1	**Preparation for operation** 1.2-2 The plan shall be [documented and] executed.
	6.4.12.3 b)3	6.4.9.3.3.1	**Operational use** 1. The system shall be operated in its intended environment according to the user documentation. NOTE 1 Operating in the intended environment includes developing criteria for operational use so that compliance with agreed requirements can be demonstrated, and performing operational testing of each release of the product, assessing satisfaction against specified criteria. NOTE 2 Risks to product operation are identified and monitored. NOTE 3 The operator monitors operational service on a regular basis, where appropriate, against defined criteria.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform operation b)4. Consistent with the operational strategy, develop and, where feasible, automate operational procedures to minimize the risk of operational anomalies.	6.4.12.3 b)4	6.4.9.3.3.1	**Operational use** 1. The system shall be operated in its intended environment according to the user documentation. NOTE 1 Operating in the intended environment includes developing criteria for operational use so that compliance with agreed requirements can be demonstrated, and performing operational testing of each release of the product, assessing satisfaction against specified criteria. NOTE 2 Risks to product operation are identified and monitored.
Perform operation b)5. Consistent with the operational strategy, analyze measurements to confirm that: i) Service performance is within acceptable parameters or agreed service levels for the agreed workload; ii) System and service availability and response times are acceptable; iii) Cost of operation is consistent with objectives and constraints; and iv) Potential improvements are identified and prioritized.	6.4.12.3 b)5	6.4.9.3.3.1	**Operational use** 1. The system shall be operated in its intended environment according to the user documentation. NOTE 1 Operating in the intended environment includes developing criteria for operational use so that compliance with agreed requirements can be demonstrated, and performing operational testing of each release of the product, assessing satisfaction against specified criteria. NOTE 3 The operator monitors operational service on a regular basis, where appropriate, against defined criteria.
Perform operation b)6. Perform contingency operations, if necessary.	6.4.12.3 b)6	6.4.9.3.3.1	**Operational use** 1. The system shall be operated in its intended environment according to the user documentation.
Manage results of operation c)1. Record results of operation and anomalies encountered.	6.4.12.3 c)1	6.4.9.3.4.2	**Customer support** 2.1 The operator shall forward user requests, as necessary, to the Software Maintenance Process (subclause 6.4.10) for resolution.
	6.4.12.3 c)1	6.4.9.3.5.1	**Operation problem resolution** 1. The operator shall forward identified problems to the Software Problem Resolution Process for resolution.
Manage results of operation c)2. Record operational incidents and problems and track their resolution.	6.4.12.3 c)2	6.4.9.3.4.2	**Customer support** 2.2 These requests shall be addressed and the actions that are planned and taken shall be reported to the originators of the requests.
	6.4.12.3 c)2	6.4.9.3.4.2	**Customer support** 2.3 All resolutions shall be monitored to conclusion.
	6.4.12.3 c)2	6.4.9.3.1.2	**Preparation for operation** 2.2 Whenever problems are encountered, they shall be recorded and entered into the Software Problem Resolution Process (subclause 7.2.8).
	6.4.12.3 c)2	6.4.9.3.5.1	**Operation problem resolution** 1. The operator shall forward identified problems to the Software Problem Resolution Process for resolution.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.12.3 c)2	6.4.9.3.5.2	**Operation problem resolution** 2.1 If a reported problem has a temporary work-around before a permanent solution can be released, the originator of the problem report shall be given the option to use it.
Manage results of operation c)3. Maintain traceability of the operational services and configuration items.	6.4.12.3 c)3	6.4.9.3.3.1	**Operational use** 1. The system shall be operated in its intended environment according to the user documentation. NOTE 1 Operating in the intended environment includes developing criteria for operational use so that compliance with agreed requirements can be demonstrated, and performing operational testing of each release of the product, assessing satisfaction against specified criteria.
Manage results of operation c)4. Provide key artifacts and information items that have been selected for baselines.	6.4.12.3 c)4	6.4.9.3.1.1	**Preparation for operation** 1.2-1 The plan shall be documented [and executed].
	6.4.12.3 c)4	6.4.9.3.4.1	**Customer support** 1.1 The operator shall provide assistance and consultation to the users as requested. 1.2 These requests and subsequent actions shall be recorded and monitored. NOTE Assistance and consultation includes the providing of training, documentation, and other support services supporting effective use of the product.
Support the customer d)1. Provide assistance and consultation to the customers and users to resolve complaints, incidents, problems, and service requests.	6.4.12.3 d)1	6.4.9.3.4.1	**Customer support** 1.1 The operator shall provide assistance and consultation to the users as requested.
	6.4.12.3 d)1	6.4.9.3.5.1	**Operation problem resolution** 1. The operator shall forward identified problems to the Software Problem Resolution Process for resolution.
	6.4.12.3 d)1	6.4.9.3.5.2	**Operation problem resolution** 2.1 If a reported problem has a temporary work-around before a permanent solution can be released, the originator of the problem report shall be given the option to use it.
	6.4.12.3 d)1	6.4.9.3.5.2	**Operation problem resolution** 2.2 Permanent corrections, releases that include previously omitted functions or features, and system improvements shall be applied to the operational software product using the Software Maintenance Process (subclause 6.4.10).

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Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Support the customer d)2. Record and monitor requests and subsequent actions for support.	6.4.12.3 d)2	6.4.9.3.4.1	**Customer support** 1.2 These requests and subsequent actions shall be recorded and monitored.
	6.4.12.3 d)2	6.4.9.3.4.2	**Customer support** 2.1 The operator shall forward user requests, as necessary, to the Software Maintenance Process (subclause 6.4.10) for resolution. 2.2 These requests shall be addressed and the actions that are planned and taken shall be reported to the originators of the requests. 2.3 All resolutions shall be monitored to conclusion.
Support the customer d)3. Determine the degree to which the delivered software system or services satisfy the needs of the customers and users.	6.4.12.3 d)3	6.4.9.3.3.1	**Operational use** 1. The system shall be operated in its intended environment according to the user documentation. NOTE 1 Operating in the intended environment includes developing criteria for operational use so that compliance with agreed requirements can be demonstrated, and performing operational testing of each release of the product, assessing satisfaction against specified criteria.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.4.13 Maintenance process			
Prepare for maintenance a)1. Define a maintenance strategy, including consideration of the following: i) Establishing priorities, typical schedules, and procedures for performing, verifying, distributing, and installing software maintenance changes in conformance with operational availability requirements; ii) Establishing techniques and methods for becoming aware of the need for corrective, adaptive, and perfective maintenance; iii) Periodic assessment of the design characteristics in case of evolution of the software system and of its architecture; iv) Forecasting potential obsolescence of components and technologies using information on technical changes in related systems; v) Establishing priorities and resources to obtain access to the correct versions of the product and product information needed for performing maintenance (e.g. , scheduled or phased installation, maintenance patches or software upgrades); vi) Measures for maintenance that will provide insight into performance levels, effectiveness, and efficiency, including access to historical fault and failure; vii) Agreed rights to data and the impact on data in the system during problem resolution and maintenance activity; viii) Approach to assure that counterfeit or unauthorized system elements are not introduced into the system; ix) Impact of the maintenance change on other software systems elements versus the risk of leaving a reported software anomaly in place; and x) The skill and personnel levels required to effect system or software repairs or replacements, fixes, patches, updates, and upgrades, considering legal and regulatory requirements regarding health and safety, security, and the environment.	6.4.13.3 a)1	6.4.10.3.1.1	6.4.10 Software Maintenance Process-3.1 **Process implementation** 1.1-1&2 The maintainer shall develop, document, [and execute] plans and procedures for conducting the activities and tasks of the Software Maintenance Process.
	6.4.13.3 a)1	6.4.10.3.1.2	**Process implementation** 2.1 The maintainer shall establish procedures for receiving, recording, and tracking problem reports and modification requests from the users and providing feedback to the users.
	6.4.13.3 a)1	6.4.10.3.1.3	**Process implementation** 3. The maintainer shall implement (or establish organizational interface with) the Configuration Management Process (subclause 7.2.2) for managing modifications to the existing system.
	6.4.13.3 a)1	6.4.10.3.5.1	**Migration** 1. If a system or software product (including data) is migrated from an old to a new operational environment, it shall be ensured that any software product or data produced or modified during migration is in accordance with this International Standard.
Prepare for maintenance a)2. For non-software elements, define a logistics strategy throughout the life cycle, including acquisition and operational considerations: the number and type of replacement elements to be stored, their storage locations and conditions, their anticipated replacement rate, and their storage life and renewal frequency.	6.4.13.3 a)2	None	None of activities and tasks is mapped.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Prepare for maintenance a)3. Identify constraints from maintenance to be incorporated in the system/software requirements, architecture, or design.	6.4.13.3 a)3	None	None of activities and tasks is mapped.
Prepare for maintenance a)4. Identify trades such that the system and associated maintenance and logistics actions result in a solution that is affordable, operable, supportable, and sustainable.	6.4.13.3 a)4	None	None of activities and tasks is mapped.
Prepare for maintenance a)5. Identify and plan for the necessary enabling systems or services needed to support maintenance.	6.4.13.3 a)5	6.2.2.3.1.1	6.2.2 Infrastructure Management Process-3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for maintenance a)6. Obtain or acquire access to the enabling systems or services to be used.	6.4.13.3 a)6	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.
Perform maintenance b)	6.4.13.3 b)	6.4.10.3.1.1	**Process implementation** 1.1-3 The maintainer shall [develop, document, and] execute plans and procedures for conducting the activities and tasks of the Software Maintenance Process.
Perform maintenance b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.	6.4.13.3 b)1	6.4.9.3.4.2	6.4.9 Software Operation Process- 3.4 **Customer support** 2.1 The operator shall forward user requests, as necessary, to the Software Maintenance Process (subclause 6.4.10) for resolution.
	6.4.13.3 b)1	6.4.10.3.2.1	**Problem and modification analysis** 1. The maintainer shall analyze the problem report or modification request for its impact on the organization, the existing system, and the interfacing systems for the following: a) Type; for example, corrective, improvement, preventive, or adaptive to new environment; b) Scope; for example, size of modification, cost involved, time to modify; c) Criticality; for example, impact on performance, safety, or security.
	6.4.13.3 b)1	6.4.10.3.2.2	**Problem and modification analysis** 2. The maintainer shall replicate or verify the problem.
	6.4.13.3 b)1	6.4.10.3.2.3	**Problem and modification analysis** 3. Based upon the analysis, the maintainer shall develop options for implementing the modification.
	6.4.13.3 b)1	6.4.10.3.2.4	**Problem and modification analysis** 4. The maintainer shall document the problem/modification request, the analysis results, and implementation options.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.13.3 b)1	6.4.10.3.2.5	**Problem and modification analysis** 5. The maintainer shall obtain approval for the selected modification option as specified in the contract.
	6.4.13.3 b)1	6.4.10.3.3.1	**Modification implementation** 1.1 The maintainer shall conduct analysis and determine which documentation, software units, and versions thereof need to be modified.
	6.4.13.3 b)1	6.4.10.3.3.2	**Modification implementation** 2.2 The requirements of the Technical Processes shall be supplemented as follows: a) Test and evaluation criteria for testing and evaluating the modified and the un-modified parts (software units, components, and configuration items) of the system shall be defined and documented. b) The complete and correct implementation of the new and modified requirements shall be ensured. It also shall be ensured that the original, unmodified requirements were not affected. The test results shall be documented.
	6.4.13.3 b)1	6.4.10.3.5.1	**Migration** 1. If a system or software product (including data) is migrated from an old to a new operational environment, it shall be ensured that any software product or data produced or modified during migration is in accordance with this International Standard.
Perform maintenance b)2. Analyze the impact of maintenance changes on data structures, data, and related software functions, user documentation, and interfaces.	6.4.13.3 b)2	6.4.10.3.3.2	**Modification implementation** 2.2 The requirements of the Technical Processes shall be supplemented as follows: a) Test and evaluation criteria for testing and evaluating the modified and the un-modified parts (software units, components, and configuration items) of the system shall be defined and documented. b) The complete and correct implementation of the new and modified requirements shall be ensured. It also shall be ensured that the original, unmodified requirements were not affected.
	6.4.13.3 b)2	6.4.10.3.5.6	**Migration** 6.1 A post-operation review shall be performed to assess the impact of changing to the new environment. 6.2 The results of the review shall be sent to the appropriate authorities for information, guidance, and action.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.13.3 b)2	7.3.1.3.5.1	7.3.1 Domain Engineering Process- 3.5 **Asset maintenance**. 1. When analyzing requests for asset modification and choosing implementation options, the domain engineer shall consider: a) Conformance with the domain models and the domain architecture; b) Impact on the systems and software products that use the asset; c) Impact on future users of the asset; d) Impact on the reusability of the asset.
Perform maintenance b)3. Upon encountering unexpected faults that cause a software system failure, restore the system to operational status.	6.4.13.3 b)3	6.4.9.3.5.2	**Operation problem resolution** 2.1 If a reported problem has a temporary workaround before a permanent solution can be released, the originator of the problem report shall be given the option to use it.
Perform maintenance b)4. Implement the procedures for correction of flaws (defects) and errors, or for replacement or upgrade of system elements.	6.4.13.3 b)4	6.4.10.3.3.2	**Modification implementation** 2.1 The maintainer shall enter the Technical Processes (subclause 6.4) to implement the modifications.
Perform maintenance b)5. Perform preventive maintenance by replacing, patching, augmenting, or upgrading software system elements, to improve the performance of a software system that is projected to reach unacceptable service levels, e.g., lack of capacity due to increases in demand or stored data, or to avoid unacceptable operating conditions, e.g., running with outdated security software	6.4.13.3 b)5	6.4.10.3.2.1	**Problem and modification analysis** 1. The maintainer shall analyze the problem report or modification request for its impact on the organization, the existing system, and the interfacing systems for the following: a) Type; for example, corrective, improvement, preventive, or adaptive to new environment;
	6.4.13.3 b)5	6.4.10.3.3.2	**Modification implementation** 2.1 The maintainer shall enter the Technical Processes (subclause 6.4) to implement the modifications.
Perform maintenance b)6. Identify when adaptive or perfective maintenance is required.	6.4.13.3 b)6	6.4.10.3.2.1	**Problem and modification analysis** 1. The maintainer shall analyze the problem report or modification request for its impact on the organization, the existing system, and the interfacing systems for the following: a) Type; for example, corrective, improvement, preventive, or adaptive to new environment;
Perform logistics support c)1. Obtain resources to support the software system throughits life cycle or the project's life (acquisition logistics).	6.4.13.3 c)1	None	None of activities and tasks is mapped.
Perform logistics support c)2. Monitor the quality and availability of replacement elements and enabling systems, their delivery mechanisms and their continued integrity during storage.	6.4.13.3 c)2	None	None of activities and tasks is mapped.
Perform logistics support c)3. Implement mechanisms for software system or element distribution, including packaging, handling, storage and communications or transportation needed for items during the life cycle.	6.4.13.3 c)3	None	None of activities and tasks is mapped.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Perform logistics support c)4. Confirm that logistics actions to fulfill software system or element supportability requirements or achieve operational readiness are planned and implemented.	6.4.13.3 c)4	None	None of activities and tasks is mapped.
Manage results of maintenance and logistics d)1. Record incidents and problems, including their resolutions, and significant maintenance and logistics results.	6.4.13.3 d)1	6.4.10.3.1.2	**Process implementation** 2.2 Whenever problems are encountered, they shall be recorded and entered into the Software Problem Resolution Process (subclause 7.2.8).
Manage results of maintenance and logistics d)2. Identify and record trends of incidents, problems, and maintenance and logistics actions.	6.4.13.3 d)2	7.2.8.3.1.1	7.2.8 Software Problem Resolution Process- 3.1 **Process implementation** 1.2 The process shall comply with the following requirements: c) Analysis shall be performed to detect trends in the problems reported.
Manage results of maintenance and logistics d)3. Maintain traceability of the system elements being maintained.	6.4.13.3 d)3	6.4.10.3.3.2	**Modification implementation** 2.2 The requirements of the Technical Processes shall be supplemented as follows: a) Test and evaluation criteria for testing and evaluating the modified and the un-modified parts (software units, components, and configuration items) of the system shall be defined and documented. b) The complete and correct implementation of the new and modified requirements shall be ensured. It also shall be ensured that the original, unmodified requirements were not affected. The test results shall be documented.
	6.4.13.3 d)3	6.4.10.3.4.1	**Maintenance review/acceptance** 1. The maintainer shall conduct review(s) with the organization authorizing the modification to determine the integrity of the modified system.
Manage results of maintenance and logistics d)4. Provide key artifacts and information items that have been selected for baselines.	6.4.13.3 d)4	6.4.10.3.1.1	**Process implementation** 1.1-2 The maintainer shall [develop], document, [and execute] plans and procedures for conducting the activities and tasks of the Software Maintenance Process.
	6.4.13.3 d)4	6.4.10.3.3.1	**Modification implementation** [1.1 The maintainer shall conduct analysis and determine which documentation, software units, and versions thereof need to be modified.] 1.2 These shall be documented.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.13.3 d)4	6.4.10.3.3.2	**Modification implementation** 2.2 The requirements of the Technical Processes shall be supplemented as follows: a) Test and evaluation criteria for testing and evaluating the modified and the un-modified parts (software units, components, and configuration items) of the system shall be defined and documented. b) The complete and correct implementation of the new and modified requirements shall be ensured. It also shall be ensured that the original, unmodified requirements were not affected. The test results shall be documented.
	6.4.13.3 d)4	6.4.10.3.3.2	**Modification implementation** 2.3 The test results shall be documented.
Manage results of maintenance and logistics d)5. Monitor and measure customer satisfaction with system and maintenance support.	6.4.13.3 d)5	6.4.10.3.4.1	**Maintenance review/acceptance** 1. The maintainer shall conduct review(s) with the organization authorizing the modification to determine the integrity of the modified system.
	6.4.13.3 d)5	6.4.10.3.4.2	**Maintenance review/acceptance** 2. The maintainer shall obtain approval for the satisfactory completion of the modification as specified in the contract.
	6.4.13.3 d)5	6.4.10.3.5.6	**Migration** 6.1 A post-operation review shall be performed to assess the impact of changing to the new environment. 6.2 The results of the review shall be sent to the appropriate authorities for information, guidance, and action.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
6.4.14 Disposal process			
Prepare for disposal a)1. Define a disposal strategy for the software system, to include each system element and to identify and address critical disposal needs, including the following considerations: i) Permanent termination of the system's functions and delivery of services, e.g. , physical destruction of data storage devices, or transition of the software system elements for future reuse in modified or adapted form; ii) Identification of ownership and responsibility for retention or destruction of data and intellectual property in the software system; iii) Transformation of the product into, or retention in a socially and physically acceptable state, thereby avoiding subsequent adverse effects on stakeholders, society and the environment; iv) The health, safety, security and privacy concerns applicable to disposal actions and to the long-term condition of resulting physical material and information; v) Notification to relevant stakeholders of significant disposal activities, e.g. , retirement or replacement of a system, software products or services, retirement schedule, or replacement options; and vi) Identification of schedules, actions, responsibilities, and resources for disposal activities.	6.4.14.3 a)1	6.4.11.3.1.1	6.4.11 Software Disposal Process- 3.1 **Software disposal planning** 1.1-1&2 A software disposal strategy is defined and documented.
	6.4.14.3 a)1	6.4.11.3.1.1	**Software disposal planning** 1.2-1&2 A plan to remove active support by the operation and maintenance organizations shall be developed [and documented].
	6.4.14.3 a)1	6.4.11.3.1.1	**Software disposal planning** 1.3 The planning activities shall include users.
	6.4.14.3 a)1	6.4.11.3.1.1	**Software disposal planning** 1.4 The software disposal plan shall address the items listed below: a) Cessation of full or partial support after a certain period of time. b) Archiving of the software product and its associated documentation. c) Responsibility for any future residual support issues. d) Transition to any new software product, if applicable. e) Accessibility of archive copies of data.
	6.4.14.3 a)1	6.4.11.3.2.2	**Software disposal execution** 2.1 Users shall be given notification of the plans and activities for the retirement of software products and services.
	6.4.14.3 a)1	6.4.11.3.2.2	**Software disposal execution** 2.2 Notifications shall include the following: a) Description of any replacement or upgrade with its date of availability. b) Statement of why the software product is no longer to be supported. c) Description of other support options available, once support has been removed.
Prepare for disposal a)2. Identify constraints on disposal for the system/ software requirements, architecture and design characteristics, or implementation techniques.	6.4.14.3 a)2	None	None of activities and tasks is mapped.
Prepare for disposal a)3. Identify and plan for the necessary enabling systems or services needed to support disposal.	6.4.14.3 a)3	6.2.2.3.1.1	6.2.2 Infrastructure Management Process- 3.1 **Process implementation** 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.
Prepare for disposal a)4. Obtain or acquire access to the enabling systems or services to be used.	6.4.14.3 a)4	6.2.2.3.2.2	**Establishment of the infrastructure** 2. The infrastructure shall be installed in time for execution of the relevant process.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
Prepare for disposal a)5. Specify containment facilities, storage locations, inspection criteria and storage periods, if the software system or data is to be stored, consistent with security and environmental considerations.	6.4.14.3 a)5	6.4.11.3.1.1	**Software disposal planning** 1.4 The software disposal plan shall address the items listed below: a)-e).
Prepare for disposal a)6. Define preventive methods to preclude disposed elements and materials that should not be repurposed, reclaimed or reused from re-entering the supply chain.	6.4.14.3 a)6	None	None of activities and tasks is mapped.
Perform disposal b)1. Deactivate the software system or element to prepare it for removal.	6.4.14.3 b)1	6.4.11.3.2.1	**Software disposal execution** 1. The software disposal plan shall be executed.
Perform disposal b)2. Remove the software system, its elements, its data, and non-reusable material from use or production for appropriate disposition and action.	6.4.14.3 b)2	6.4.11.3.2.3	**Software disposal execution** 3.1 Parallel operations of the retiring and any new software product should be conducted for smooth transition to the new system. 3.2 During this period, user training shall be provided as specified in the contract.
Perform disposal b)3. Withdraw impacted operating staff from the software system or system element and record relevant operating knowledge.	6.4.14.3 b)3	6.4.11.3.2.4	**Software disposal execution** 4.1 When the scheduled retirement arrives, notification shall be sent to all concerned. 4.2 All associated development documentation, logs, and code should be placed in archives, when appropriate.
	6.4.14.3 b)3	6.4.11.3.2.5	**Software disposal execution** 5. Data used by, or associated with, the retired software product shall be accessible in accordance with the contract requirements for data protection and audit applicable to the data.
Perform disposal b)4. Reuse, recycle, recondition, overhaul, archive, or destroy designated software system elements.	6.4.14.3 b)4	6.4.11.3.2.3	**Software disposal execution** 3.1 Parallel operations of the retiring and any new software product should be conducted for smooth transition to the new system. 3.2 During this period, user training shall be provided as specified in the contract.
	6.4.14.3 b)4	6.4.11.3.2.5	**Software disposal execution** 5. Data used by, or associated with, the retired software product shall be accessible in accordance with the contract requirements for data protection and audit applicable to the data.
Perform disposal b)5. Conduct destruction of the system elements, as necessary, to reduce the amount of waste treatment or to make the waste easier to handle.	6.4.14.3 b)5	6.4.11.3.2.1	**Software disposal execution** 1. The software disposal plan shall be executed.
Finalize the disposal c)1. Confirm that detrimental health, safety, security, and environmental conditions following disposal have been identified and treated.	6.4.14.3 c)1	6.4.11.3.2.1	**Software disposal execution** 1. The software disposal plan shall be executed.

[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.

Table 3 *(continued)*

Activities & tasks (ISO/IEC/IEEE 12207:2017)	Sub clause	Sub clause	Activities & tasks (ISO/IEC 12207:2008)
	6.4.14.3 c)1	6.4.11.3.2.5	**Software disposal execution** 5. Data used by, or associated with, the retired software product shall be accessible in accordance with the contract requirements for data protection and audit applicable to the data.
Finalize the disposal c)2. Return the environment to its original state or to a state that is specified by agreement.	6.4.14.3 c)2	None	None of activities and tasks is mapped.
Finalize the disposal c)3. Archive information gathered through the lifetime of the product to permit audits and reviews in the event of long-term hazards to health, safety, security and the environment, and to permit future software system creators and users to build a knowledge base from experience.	6.4.14.3 c)3	6.4.11.3.2.5	**Software disposal execution** 5. Data used by, or associated with, the retired software product shall be accessible in accordance with the contract requirements for data protection and audit applicable to the data.
[a] Any requirements in ISO/IEC/IEEE 12207 that include the word 'document' form part of the workload handled by the Information Management process. See also ISO/IEC/IEEE 15289.			

7.2 Activity and task-level mapping from ISO/IEC 12207:2008 to ISO/IEC/IEEE 12207:2017

Table 4 correlates activities and tasks found in ISO/IEC 12207:2008 to the required activities and tasks in ISO/IEC/IEEE 12207:2017. The mapping indicates related activities and tasks that may be helpful in meeting the requirements of ISO/IEC/IEEE 12207:2017. Many of the activities and tasks included in Table 4 from ISO/IEC 12207:2008 were not required. Only activities and tasks using "shall" or worded in the imperative were required. There is no assumption that recommended or optional tasks from ISO/IEC 12207:2008 are required to meet the requirements of ISO/IEC/IEEE 12207:2017. There is also no assumption that all the required activities and tasks of ISO/IEC 12207:2008 are required to fulfil the requirements of ISO/IEC/IEEE 12207:2017, or that performing all the required activities and tasks of ISO/IEC 12207:2008 is sufficient to achieve the required activities and tasks of ISO/IEC/IEEE 12207:2017.

When the subclause is indicated by 'l.m.n.3.w.x' for ISO/IEC 12207:2008, it indicates the task x of activity 'l.m.n.3.w' in process 'l.m.n'.

When the subclause is indicated by expressions such as 'x.y-z' in the column of "Activities & tasks (ISO/IEC 12207:2008)", it indicates the z-th verb of y-th sentence in a paragraph of task x in activity 'l.m.n.3.w'.

When the subclause is indicated by '6.m.n.3 x)y.z' for ISO/IEC/IEEE 12207:2017, it indicates the z-th sentence of task y of activity '6.m.n x)' in process '6.m.n'.

Table 4 — Activity and task mapping from ISO/IEC 12207:2008 to ISO/IEC/IEEE 12207:2017

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.1.1 Acquisition Process			
Acquisition preparation 1. The acquirer begins the acquisition process by describing a concept or a need to acquire, develop, or enhance a system, software product or software service.	6.1.1.3.1.1	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 2.1 The acquirer will define and analyze the system requirements.	6.1.1.3.1.2	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 2.2 The system requirements should include business, organizational and user as well as safety, security, and other criticality requirements along with related design, testing, and compliance standards and procedures.	6.1.1.3.1.2	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 3. The acquirer may perform the definition and analysis of software requirements by itself or may retain a supplier to perform this task.	6.1.1.3.1.3	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 4. If the acquirer retains a supplier to perform system requirements analysis, the acquirer will approve the analyzed requirements.	6.1.1.3.1.4	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 5.1 The Technical Processes (subclause 6.4) should be used to perform the tasks in subclauses6.1.1.3.1.2 and 6.1.1.3.1.4.	6.1.1.3.1.5	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 5.2 The acquirer may use the Stakeholder Requirements Definition Process [c] to establish the customer requirements.	6.1.1.3.1.5	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Acquisition preparation 6. The acquirer shall consider options for acquisition against analysis of appropriate criteria to include risk, cost and benefits for each option. Options include: a) Purchase an off-the-shelf software product that satisfies the requirements. b) Develop the software product or obtain the software service internally. c) Develop the software product or obtain the software service through contract. d) A combination of a, b, and c above. e) Enhance an existing software product or service.	6.1.1.3.1.6	6.1.1.3 a)1	**Prepare for the acquisition** a)1. Define a strategy for how the acquisition will be conducted.
Acquisition preparation 7. When an off-the-shelf software product is to be acquired, the acquirer shall ensure the following conditions are satisfied: a) The requirements for the software product are satisfied. b) The required documentation is available .c) Proprietary, usage, ownership, warranty and licensing rights are satisfied. d) Future support for the software product is planned.	6.1.1.3.1.7	6.1.1.3 a)1	**Prepare for the acquisition** a)1. Define a strategy for how the acquisition will be conducted.
Acquisition preparation 8.1-1&2 The acquirer should prepare, document [and execute] an acquisition plan.	6.1.1.3.1.8	6.1.1.3 a)1	**Prepare for the acquisition** a)1. Define a strategy for how the acquisition will be conducted.
Acquisition preparation 8.1-3 The acquirer should prepare, [document and] execute an acquisition plan.	6.1.1.3.1.8	6.1.1.3 b)	**Advertise the acquisition and select the supplier**
	6.1.1.3.1.8	6.1.1.3 c)	**Establish and maintain an agreement**
	6.1.1.3.1.8	6.1.1.3 d)	**Monitor the agreement**
	6.1.1.3.1.8	6.1.1.3 e)	**Accept the product or service**
Acquisition preparation 8.4 The plan should contain the following: a) Requirements for the system. b) Planned employment of the system. c) Type of contract to be employed. d) Responsibilities of the organizations involved. e) Support concept to be used. f) Risks considered as well as methods to manage the risks.	6.1.1.3.1.8	6.1.1.3 a)1	**Prepare for the acquisition** a)1. Define a strategy for how the acquisition will be conducted.
	6.1.1.3.1.8	6.3.1.3 a)1	**Define the project** a)1. Identify the project objectives and constraints.
Acquisition preparation 9.1-1&2 The acquirer shall define and document the acceptance strategy and conditions (criteria).	6.1.1.3.1.9	6.1.1.3 a)1	**Prepare for the acquisition** a)1. Define a strategy for how the acquisition will be conducted.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Acquisition preparation 10.1 The acquirer should document the acquisition requirements (e.g., request for proposal), the content of which depends upon the acquisition option selected in subclause 6.1.1.3.1.6.	6.1.1.3.1.10	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 10.2 The acquisition documentation should include, as appropriate: a) System requirements. b) Scope statement. c) Instructions for bidders. d) List of software products. e) Terms and conditions. f) Control of subcontracts. g) Technical constraints (e.g., target environment).	6.1.1.3.1.10	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 11.1 The acquirer should determine which processes of this International Standard are appropriate for the acquisition and specify any acquirer requirements for tailoring those processes.	6.1.1.3.1.11	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 11.2 The acquirer should specify if any of the processes are to be performed by parties other than the supplier, so that suppliers may, in their proposals, define their approach to supporting the work of other parties.	6.1.1.3.1.11	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 11.3 The acquirer shall define the scope of those tasks that reference the contract.	6.1.1.3.1.11	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 12. The acquisition documentation shall also define the contract milestones at which the supplier's progress shall be reviewed and audited as part of monitoring the acquisition (see subclauses 7.2.6 and 7.2.7).	6.1.1.3.1.12	6.1.1.3 a)2	**Prepare for the acquisition** a)2. Prepare a request for the supply of a product or service that includes the requirements.
Acquisition preparation 13. The acquisition requirements should be given to the organization selected for performing the acquisition activities.	6.1.1.3.1.13	6.1.1.3 b)1	**Advertise the acquisition and select the supplier** b)1. Communicate the request for the supply of a product or service to potential suppliers;

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase “Identify and plan for the necessary enabling systems or services needed to support”.

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase “Obtain or acquire access to the enabling systems or services to be used”.

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Acquisition advertisement 1. The acquirer shall communicate the request for the supply of a product or service to identified suppliers. NOTE This may include supply chain management partnering which exchanges information with related suppliers and acquirers to achieve a harmonized or collective approach to common technical and commercial issues.	6.1.1.3.2.1	6.1.1.3 b)1	**Advertise the acquisition and select the supplier** b)1. Communicate the request for the supply of a product or service to potential suppliers;
Supplier selection 1. The acquirer should establish a procedure for supplier selection including proposal evaluation criteria and requirements compliance weighting.	6.1.1.3.3.1	6.2.1.3 a)1	**6.2.1 Life cycle model management process- Establish the process** a)1. Establish policies and procedures for process management and deployment that are consistent with organizational strategies.
Supplier selection 2. The acquirer should select a supplier based upon the evaluation of the suppliers' proposals, capabilities, and other factors that need to be considered.	6.1.1.3.3.2	6.1.1.3 b)2	**Advertise the acquisition and select the supplier** b)2. Select one or more suppliers.
Contract agreement 1.1 The acquirer may involve other parties, including potential suppliers or any necessary third parties (such as regulators), before contract award, in determining the acquirer's requirements for tailoring of this International Standard for the project.	6.1.1.3.4.1	6.1.1.3 c)1	**Establish and maintain an agreement** c)1. Develop an agreement with the supplier that includes acceptance criteria.
Contract agreement 1.2 In making this determination, the acquirer shall consider the effect of the tailoring requirements upon the supplier's organizationally-adopted processes.	6.1.1.3.4.1	6.1.1.3 c)1	**Establish and maintain an agreement** c)1. Develop an agreement with the supplier that includes acceptance criteria.
Contract agreement 1.3 The acquirer shall include or reference the tailoring requirements in the contract.	6.1.1.3.4.1	6.1.1.3 c)1	**Establish and maintain an agreement** c)1. Develop an agreement with the supplier that includes acceptance criteria.
Contract agreement 2.1 The acquirer shall then prepare and negotiate a contract with the supplier that addresses the acquisition requirements, including the cost and schedule, of the software product or service to be delivered.	6.1.1.3.4.2	6.1.1.3 c)1	**Establish and maintain an agreement** c)1. Develop an agreement with the supplier that includes acceptance criteria.
	6.1.1.3.4.2	6.1.1.3 c)4	**Establish and maintain an agreement** c)4. Negotiate the agreement with the supplier.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Contract agreement 2.2 The contract shall address proprietary, usage, ownership, warranty and licensing rights associated with the reusable off-the-shelf software products.	6.1.1.3.4.2	6.1.1.3 c)1	**Establish and maintain an agreement** c)1. Develop an agreement with the supplier that includes acceptance criteria.
Contract agreement. 3.1 Once the contract is underway, the acquirer shall control changes to the contract through negotiation with the supplier as part of a change control mechanism. NOTE 1 The acquirer determines whether the term "contract" or "agreement" is to be used in the application of this International Standard. NOTE 2 The agreement between the acquirer and the supplier should clearly express the expectation, responsibilities and liabilities of both. NOTE 3 The contract change control mechanism should address the change management roles and responsibilities, level of formality of the proposed change requests and contract renegotiation, and communication to the affected stakeholders. An informative Annex F contains a sample contract change management process that may be utilized to support this.	6.1.1.3.4.3	6.1.1.3 c)2	**Establish and maintain an agreement** c)2. Identify necessary changes to the agreement.
	6.1.1.3.4.3	6.1.1.3 c)5	**Establish and maintain an agreement** c)5. Update the agreement with the supplier, as necessary.
Contract agreement 3.2 Changes to the contract shall be investigated for impact on project plans, costs, benefits, quality, and schedule	6.1.1.3.4.3	6.1.1.3 c)3	**Establish and maintain an agreement** c)3. Evaluate impact of changes on the agreement.
	6.1.1.3.4.3	6.1.1.3 c)5	**Establish and maintain an agreement** c)5. Update the agreement with the supplier, as necessary.
	6.1.1.3.4.3	6.1.1.3 d)1	**Monitor the agreement** d)1. Assess the execution of the agreement.
	6.1.1.3.4.3	6.3.2.3 c)3	**6.3.2 Project assessment and control process- Control the project** c)3. Initiate change actions when there is a contractual change to cost, time or quality due to the impact of an acquirer or supplier request.
Agreement monitoring 1.1 The acquirer shall monitor the supplier's activities in accordance with the Software Review Process (subclause 7.2.6) and the Software Audit Process (subclause 7.2.7).	6.1.1.3.5.1	6.1.1.3 d)1	**Monitor the agreement** d)1. Assess the execution of the agreement.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Agreement monitoring 1.2 The acquirer should supplement the monitoring with the Software Verification Process (subclause 7.2.4) and the Software Validation Process (subclause 7.2.5) as needed.	6.1.1.3.5.1	6.1.1.3 d)1	**Monitor the agreement** d)1. Assess the execution of the agreement.
Agreement monitoring 2. The acquirer will cooperate with the supplier to provide all necessary information in a timely manner and resolve all pending items.	6.1.1.3.5.2	6.1.1.3 d)2	**Monitor the agreement** d)2. Provide data needed by the supplier and resolve issues in a timely manner.
Acquirer acceptance 1. The acquirer should prepare for acceptance based on the defined acceptance strategy and criteria. The preparation of test cases, test data, test procedures, and test environment should be included. The extent of supplier involvement should be defined.	6.1.1.3.6.1	6.1.1.3 e)1	**Accept the product or service** e)1. Confirm that the delivered product or service complies with the agreement.
Acquirer acceptance 2.1 The acquirer shall conduct acceptance review and acceptance testing of the deliverable software product or service [and shall accept it from the supplier when all acceptance conditions are satisfied.]	6.1.1.3.6.2	6.1.1.3 d)1	**Monitor the agreement** d)1. Assess the execution of the agreement.
	6.1.1.3.6.2	6.1.1.3 e)1	**Accept the product or service** e)1. Confirm that the delivered product or service complies with the agreement.
Acquirer acceptance 2.2 The acquirer [shall conduct acceptance review and acceptance testing of the deliverable software product or service and] shall accept it from the supplier when all acceptance conditions are satisfied.	6.1.1.3.6.2	6.1.1.3 e)3	**Accept the product or service** e)3. Accept the product or service from the supplier, or other party, as directed by the agreement.
Acquirer acceptance 3. After acceptance, the acquirer should take the responsibility for the configuration management of the delivered software product (see subclause 7.2.2).	6.1.1.3.6.3	6.3.5.3 c)	**Perform configuration change management**
Closure 1. The acquirer shall make payment or provide other agreed consideration to the supplier for the product or service rendered.	6.1.1.3.7.1	6.1.1.3 e)2	**Accept the product or service** e)2. Provide payment or other agreed consideration.
6.1.2 Supply Process			
Opportunity identification 1. The supplier should determine the existence and identity of an acquirer who has, or who represents an organization or organizations having, a need for a product or service.	6.1.2.3.1.1	6.1.2.3 a)1	**6.3.1 Project Planning process- Prepare for the supply** a)1. Determine the existence and identity of an acquirer who has a need for a product or service.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Supplier tendering 1. The supplier should conduct a review of requirements in the request for proposal taking into account organizational policies and other regulations. NOTE This may include supply chain management partnering which exchanges information with related suppliers and acquirers to achieve a harmonized or collective approach to common technical and commercial issues.	6.1.2.3.2.1	6.1.2.3 a)2	**Prepare for the supply** a)2. Define a supply strategy.
Supplier tendering 2. The supplier should make a decision to bid or accept the contract.	6.1.2.3.2.2	6.1.2.3 a)2	**Prepare for the supply** a)2. Define a supply strategy.
Supplier tendering 3. The supplier should prepare a proposal in response to the request for proposal.	6.1.2.3.2.3	6.1.2.3 b)2	**Respond to a request for supply of products or services** b)2. Prepare a response that satisfies the solicitation.
Contract agreement 1 The supplier shall negotiate and enter into a contract with the acquirer to provide the software product or service.	6.1.2.3.3.1	6.1.2.3 c)1	**Establish and maintain an agreement** c)1. Negotiate an agreement with the acquirer that includes acceptance criteria.
	6.1.2.3.3.1	6.1.2.3 c)4	**Establish and maintain an agreement** c)4. Negotiate the agreement with the acquirer, as necessary.
	6.1.2.3.3.1	6.3.2.3 c)3	**6.3.2 Project assessment and control process- Control the project** c)3. Initiate change actions when there is a contractual change to cost, time or quality due to the impact of an acquirer or supplier request.
Contract agreement 2. The supplier may request modification to the contract as part of the change control mechanism.	6.1.2.3.3.2	6.1.2.3 c)2	**Establish and maintain an agreement** c)2. Identify necessary changes to the agreement.
	6.1.2.3.3.2	6.1.2.3 c)5	**Establish and maintain an agreement** c)5. Update the agreement with the acquirer, as necessary.
	6.1.2.3.3.2	6.3.2.3 c)3	**Control the project** c)3. Initiate change actions when there is a contractual change to cost, time or quality due to the impact of an acquirer or supplier request.
Contract execution 1. The supplier shall conduct a review of the acquisition requirements to define the framework for managing and assuring the project and for assuring the quality of the deliverable software product or service.	6.1.2.3.4.1	6.1.2.3 b)1	**Respond to a request for supply of products or services** b)1. Evaluate a request for the supply of a product or service) to determine feasibility and how to respond.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Contract execution 2.1 If not stipulated in the contract, the supplier shall define or select a software life cycle model appropriate to the scope, magnitude, and complexity of the project.	6.1.2.3.4.2	6.3.1.3 a)3	**Define the project** a)3. Define and maintain a life cycle model that is comprised of stages using the defined life cycle models of the organization.
Contract execution 2.2 The life cycle model shall be comprised of stages and the purpose and outcomes of each stage.	6.1.2.3.4.2	6.3.1.3 a)3	**Define the project** a)3. Define and maintain a life cycle model that is comprised of stages using the defined life cycle models of the organization.
Contract execution 2.3 The processes, activities, and tasks shall be selected and mapped onto the life cycle model.	6.1.2.3.4.2	6.3.1.3 a)3	**Define the project** a)3. Define and maintain a life cycle model that is comprised of stages using the defined life cycle models of the organization.
Contract execution 3.1 The supplier shall establish requirements for the plans for managing and assuring the project and for assuring the quality of the deliverable software product or service.	6.1.2.3.4.3	6.3.1.3 b)	**Plan project and technical management**
Contract execution 3.2 Requirements for the plans should include resource needs and acquirer involvement.	6.1.2.3.4.3	6.3.1.3 b)1	**Plan project and technical management** b)1. Define and maintain a project schedule based on management and technical objectives and work estimates.
Contract execution 4.1 Once the planning requirements are established, the supplier shall consider the options for developing the software product or providing the software service against an analysis of risks associated with each option. Options include: a) Develop the software product or provide the software service using internal resources. b) Develop the software product or provide the software service by subcontracting. c) Obtain off-the-shelf software products from internal or external sources. d) A combination of a, b, and c above.	6.1.2.3.4.4	6.4.7.3 a)1	**6.4.7 Implementation process-** **Prepare for implementation** a)1. Define an implementation strategy, with consideration of the following: i) development policies and standards, including standards that govern applicable safety, security, privacy and environmental practices; programming or coding standards; unit test policies; and language-specific standards for implementing security features; ii) For reused or adapted software, methods to determine the level, source, and suitability of the reused system elements and security of the supply chain; iii) procedures and methods for software development (construction) and development of unit tests; and the use of peer reviews, unit tests, and walkthroughs during implementation; iv) use of CM control during software construction; v) change management considerations for manual processes;

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
			vi) implementation priorities to support data and software migration and transition, along with retirement of legacy systems; vii) creation of manual or automated test procedures to verify that a software unit meets its requirements before creation of the software unit (test-driven development); and viii) comprehensive or specialized life cycle development and support environments for realizing and managing requirements, models and prototypes, deliverable system or software elements, and test specifications and test cases.
Contract execution 5.1-1 The supplier shall develop [and document] project management plan(s) based upon the planning requirements and options selected in subclause 6.1.2.3.4.4. NOTE Items to be considered in the plan include but are not limited to the following: a) Project organizational structure and authority and responsibility of each organizational unit, including external organizations. b) Engineering environment (for development, operation, or maintenance, as applicable), including test environment, library, equipment, facilities, standards, procedures, and tools. c) Work breakdown structure of the life cycle processes and activities, including the software products, software services and non-deliverable items, to be performed together with budgets, staffing, physical resources, software size, and schedules associated with the tasks. d) Management of the quality characteristics of the software products or services. Separate plans for quality may be developed. e) Management of the safety, security, and other critical requirements of the software products or services. Separate plans for safety and security may be developed.	6.1.2.3.4.5	6.3.1.3 b)	**Plan project and technical management**

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
f) Subcontractor management, including subcontractor selection and involvement between the subcontractor and the acquirer, if any. g) Quality assurance (see subclause 7.2.3). h) Verification (see subclause 7.2.4) and validation (see subclause 7.2.5), including the approach for interfacing with the verification and validation agent, if specified. i) Acquirer involvement; that is, by such means as reviews (see subclause 7.2.6), audits (see subclause 7.2.7), informal meetings, reporting, modification and change; implementation, approval, acceptance, and access to facilities. j) User involvement; by such means as requirements setting exercises, prototype demonstrations and evaluations. k) Risk management; that is, management of the areas of the project that involve potential technical, cost, or schedule risks. l) Security policy; that is, the rules for need-to-know and access-to-information at each project organization level. m) Approval required by such means as regulations, required certifications, proprietary, usage, ownership, warranty and licensing rights. n) Means for scheduling, tracking, and reporting. o) Training of personnel (see subclause 6.2.4).			
c) Work breakdown structure of the life cycle processes and activities, including the software products, software services and non-deliverable items, to be performed together with budgets, staffing, physical resources, software size, and schedules associated with the tasks.	6.1.2.3.4.5	6.3.1.3 a)4	**6.3.1 Project Planning process- Define the project** a)4. Establish a work breakdown structure (WBS) based on the deliverable products or the evolving architecture of the software system.
c) Work breakdown structure of the life cycle processes and activities, including the software products, software services and non-deliverable items, to be performed together with budgets, staffing, physical resources, software size, and schedules associated with the tasks. n) Means for scheduling, tracking, and reporting.	6.1.2.3.4.5	6.3.1.3 b)1	**Plan project and technical management** b)1. Define and maintain a project schedule based on management and technical objectives and work estimates.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
d) Management of the quality characteristics of the software products or services. Separate plans for quality may be developed. e) Management of the safety, security, and other critical requirements of the software products or services. Separate plans for safety and security may be developed. g) Quality assurance (see subclause 7.2.3). h) Verification (see subclause 7.2.4) and validation (see subclause 7.2.5), including the approach for interfacing with the verification and validation agent, if specified. m) Approval required by such means as regulations, required certifications, proprietary, usage, ownership, warranty and licensing rights.	6.1.2.3.4.5	6.3.1.3 b)2	**Plan project and technical management** b)2. Define achievement criteria for the life cycle stage decision gates, delivery dates and major dependencies on external inputs or outputs.
a) Project organizational structure and authority and responsibility of each organizational unit, including external organizations.	6.1.2.3.4.5	6.3.1.3 b)4	**Plan project and technical management** b)4. Define roles, responsibilities, accountabilities, and authorities.
b) Engineering environment (for development, operation, or maintenance, as applicable), including test environment, library, equipment, facilities, standards, procedures, and tools.	6.1.2.3.4.5	6.3.1.3 b)5	**Plan project and technical management** b)5. Define the infrastructure and services required.
Contract execution 5.1-2 The supplier shall [develop and] document project management plan(s) based upon the planning requirements and options selected in subclause 6.1.2.3.4.4.	6.1.2.3.4.5	6.3.1.3 b)7	**Plan project and technical management** b)7.1 Generate [and communicate] a plan for project and technical management and execution, including reviews.
Contract execution 6. The supplier shall implement and execute the project management plan(s) developed in clause 5.2.4.	6.1.2.3.4.6	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 7. The supplier shall: a) Develop the software product in accordance with the Technical Processes (subclause 6.4).b) Operate the software product in accordance with the Software Operation Process (subclause 6.4.9).c) Maintain the software product in accordance with the Software Maintenance Process (subclause 6.4.10).	6.1.2.3.4.7	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Contract execution 8.1 The supplier shall monitor and control the progress and the quality of the software products or services of the project throughout the contracted life cycle.	6.1.2.3.4.8	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 8.2 This shall be an ongoing, iterative task, which shall provide for: a) Monitoring progress of technical performance, costs, and schedules and reporting of project status. b) Problem identification, recording, analysis, and resolution.	6.1.2.3.4.8	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 9.1 The supplier shall manage and control the subcontractors in accordance with the Acquisition Process (clause 5.1).	6.1.2.3.4.9	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 9.2 The supplier shall pass down all contractual requirements necessary to ensure that the software product or service delivered to the acquirer is developed or performed in accordance with the prime-contract requirements.	6.1.2.3.4.9	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 10. The supplier shall interface with the independent verification, validation, or test agent as specified in the contract and project plans.	6.1.2.3.4.10	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 11. The supplier shall interface with other parties as specified in the contract and project plans.	6.1.2.3.4.11	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 12. The supplier should coordinate contract review activities, interfaces, and communication with the acquirer's organization.	6.1.2.3.4.12	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 13.1 The supplier shall conduct or support the informal meetings, acceptance review, acceptance testing, joint reviews, and audits with the acquirer as specified in the contract and project plans.	6.1.2.3.4.13	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 13.2 The joint reviews shall be conducted in accordance with clause 6.6, audits in accordance with clause 6.7.	6.1.2.3.4.13	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Contract execution 14. The supplier shall perform verification and validation in accordance with subclauses 7.2.4 and 7.2.5 respectively to demonstrate that the software products or services and processes fully satisfy their respective requirements.	6.1.2.3.4.14	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
	6.1.2.3.4.14	6.1.2.3 d)2	**Execute the agreement** d)2. Assess the execution of the agreement.
Contract execution 15. The supplier shall make available to the acquirer the reports of evaluation, reviews, audits, testing, and problem resolutions as specified in the contract.	6.1.2.3.4.15	6.1.2.3 e)2	**Deliver and support the product or service** e)2. Provide assistance to the acquirer in support of the delivered product or service, per the agreement.
Contract execution 16. The supplier shall provide the acquirer access to the supplier's and subcontractors' facilities for review of software products or services as specified in the contract and project plans.	6.1.2.3.4.16	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
Contract execution 17. The supplier shall perform quality assurance activities in accordance with subclause 7.2.3.	6.1.2.3.4.17	6.1.2.3 d)1	**Execute the agreement** d)1. Execute the agreement according to the established project plans.
	6.1.2.3.4.17	6.1.2.3 d)2	**Execute the agreement** d)2. Assess the execution of the agreement.
Product/service delivery and support 1. The supplier shall deliver the software product or service as specified in the contract.	6.1.2.3.5.1	6.1.2.3 e)1	**Deliver and support the product or service** e)1. Deliver the product or service in accordance with the agreement criteria.
Product/service delivery and support 2. The supplier shall provide assistance to the acquirer in support of the delivered software product or service as specified in the contract.	6.1.2.3.5.2	6.1.2.3 e)2	**Deliver and support the product or** service e)2. Provide assistance to the acquirer in support of the delivered product or service, per the agreement.
Closure 1. The supplier shall accept and acknowledge payment or other agreed consideration.	6.1.2.3.6.1	6.1.1.3 e)2	6.1.1 Acquisition process- Accept the product or service e)2. Provide payment or other agreed consideration.
	6.1.2.3.6.1	6.1.2.3 e)3	**Deliver and support the product or service** e)3. Accept and acknowledge payment or other agreed consideration.
Closure 2. The supplier shall transfer the responsibility for the product or service to the acquirer, or other party, as directed by the agreement.	6.1.2.3.6.2	6.1.2.3 e)4	**Deliver and support the product or service** e)4. Transfer the product or service to the acquirer, or other party, as directed by the agreement.
	6.1.2.3.6.2	6.1.2.3 e)5	**Deliver and support the product or service** e)5. Close the agreement.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.2.1 Life Cycle Model Management Process			
Process establishment 1.1 The organization shall establish a suite of organizational processes for all software life cycle processes and life cycle models as they apply to its business activities.	6.2.1.3.1.1	6.2.1.3 a)1	**6.2.1 Life cycle model management process- Establish the process** a)1. Establish policies and procedures for process management and deployment that are consistent with organizational strategies.
	6.2.1.3.1.1	6.2.1.3 a)2	**Establish the process** a)2. Establish the processes that implement the requirements of this document and that are consistent with organizational strategies.
	6.2.1.3.1.1	6.2.1.3 a)3	**Establish the process** a)3. Define the roles, responsibilities, accountabilities, and authorities to facilitate implementation of processes and the strategic management of life cycles.
	6.2.1.3.1.1	6.2.1.3 a)5	**Establish the process** a)5. Establish standard life cycle models for the organization that are comprised of stages and define the purpose and outcomes for each stage.
Process establishment 1.2 The processes and their application to specific cases shall be documented in the organization's publications.	6.2.1.3.1.1	6.2.1.3 a)2	**Establish the process** a)2. Establish the processes that implement the requirements of this document and that are consistent with organizational strategies.
Process establishment 1.3 As appropriate, a process control mechanism should be established to develop, monitor, control, and improve the process(es).	6.2.1.3.1.1	6.2.1.3 a)1	**Establish the process** a)1. Establish policies and procedures for process management and deployment that are consistent with organizational strategies.
Process assessment 1.1-1&2 The organization should develop, document [and apply] a process assessment procedure.	6.2.1.3.2.1	6.2.1.3 a)1	**Establish the process** a)1. Establish policies and procedures for process management and deployment that are consistent with organizational strategies.
Process assessment 1.1-3 The organization should [develop,] [document] and apply a process assessment procedure.	6.2.1.3.2.1	6.2.1.3 b)1	**Assess the process** b)1. Monitor process execution across the organization.
Process assessment 1.2 Assessment records should be produced and maintained.	6.2.1.3.2.1	6.2.1.3 b)1	**Assess the process** b)1. Monitor process execution across the organization.
	6.2.1.3.2.1	6.3.2.3 b)10	**6.3.2 Project Assessment and Control process- Assess the project** b)10. Record and provide status and findings from assessment tasks.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Process assessment 2 The organization shall plan and carry out reviews of the processes at appropriate intervals to ensure their continuing suitability and effectiveness in the light of assessment results.	6.2.1.3.2.2	6.2.1.3 b)1	**Assess the process** b)1. Monitor process execution across the organization.
	6.2.1.3.2.2	6.2.1.3 b)2	**Assess the process** b)2. Conduct periodic reviews of the life cycle models used by the projects.
Process improvement 1.1 The organization shall effect such improvements to its processes as it determines to be necessary as a result of process assessment and review.	6.2.1.3.3.1	6.2.1.3 b)3	**Assess the process** b)3. Identify improvement opportunities from assessment results.
	6.2.1.3.3.1	6.2.1.3 c)2	**Improve the process** c)2. Implement improvement opportunities and inform relevant stakeholders.
Process improvement 1.2 Process documentation should be updated to reflect improvement in the organizational processes.	6.2.1.3.3.1	6.2.1.3 c)2	**Improve the process** c)2. Implement improvement opportunities and inform relevant stakeholders.
Process improvement 2.1 Historical, technical, and evaluation data should be collected and analyzed to gain an understanding of the strengths and weaknesses of the employed processes.	6.2.1.3.3.2	6.2.1.3 b)2	**Assess the process** b)2. Conduct periodic reviews of the life cycle models used by the projects.
Process improvement 2.2 These analyses should be used as feedback to improve these processes, to recommend changes in the direction of the projects (or subsequent projects), and to determine technology advancement needs.	6.2.1.3.3.2	6.2.1.3 b)3	**Assess the process** b)3. Identify improvement opportunities from assessment results.
	6.2.1.3.3.2	6.2.1.3 c)1	**Improve the process** c)1. Prioritize and plan improvement opportunities.
	6.2.1.3.3.2	6.3.2.3 b)8	**Assess the project** b)8. Monitor critical processes and new technologies.
Process improvement 3.1 Quality cost data should be collected, maintained, and used to improve the organization's processes as a management activity.	6.2.1.3.3.3	6.2.1.3 b)1	**Assess the process** b)1. Monitor process execution across the organization.
	6.2.1.3.3.3	6.2.5.3.b)3	**6.2.5 Quality Management process –** **Evaluate quality management** b)3. Conduct periodic reviews of project Quality Assurance activities for compliance with the Quality Management policies, objectives, and procedures.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Process improvement 3.2 These data shall serve the purpose of establishing the cost of both the prevention and resolution of problems and non-conformity in software products and services.	6.2.1.3.3.3	6.2.1.3 b)1	**Assess the process** b)1. Monitor process execution across the organization.
6.2.2 Infrastructure Management Process			
Process implementation 1.1-1&2 The infrastructure should be defined and documented to meet the requirements of the process employing this process, considering the applicable procedures, standards, tools, and techniques.[a]	6.2.2.3.1.1	6.2.2.3 a)1	**6.2.2 Infrastructure Management process- Establish the infrastructure** a)1. Define project infrastructure requirements.
	6.2.2.3.1.1	6.3.7.3 a)7	**Prepare for measurement** a)7. Identify and plan for the necessary enabling systems or services to be used.
Process implementation 2.1-1&2 The establishment of the infrastructure should be planned and documented.	6.2.2.3.1.2	6.2.2.3 a)2	**Establish the infrastructure** a)2. Identify, obtain and provide infrastructure resources and services that are needed to implement and support projects.
Establishment of the infrastructure 1.1-1&2 The configuration of the infrastructure should be planned and documented. 1.2 Functionality, performance, safety, security, availability, space requirements, equipment, costs, and time constraints should be considered.	6.2.2.3.2.1	6.2.2.3 a)1	**Establish the infrastructure** a)1. Define project infrastructure requirements.
Establishment of the infrastructure 2. The infrastructure shall be installed in time for execution of the relevant process.[b]	6.2.2.3.2.2	6.2.2.3 a)2	**Establish the infrastructure** a)2. Identify, obtain and provide infrastructure resources and services that are needed to implement and support projects.
Maintenance of the infrastructure 1.1 The infrastructure shall be maintained, monitored, and modified as necessary to ensure that it continues to satisfy the requirements of the process employing this process.	6.2.2.3.3.1	6.3.8.3 c)2	**6.3.8 Quality Assurance process- Perform process evaluations** c)2. Evaluate tools and environments that support or automate the process for conformance.
	6.2.2.3.3.1	6.2.2.3 b)1	**Maintain the infrastructure** b)1. Evaluate the degree to which delivered infrastructure resources satisfy project needs.
	6.2.2.3.3.1	6.2.2.3 b)2	**Maintain the infrastructure** b)2. Identify and provide improvements or changes to the infrastructure resources as the project requirements change.
Maintenance of the infrastructure 1.2 As part of maintaining the infrastructure, the extent to which the infrastructure is under configuration management shall be defined.	6.2.2.3.3.1	6.2.2.3 b)2	**Maintain the infrastructure** b)2. Identify and provide improvements or changes to the infrastructure resources as the project requirements change.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.2.3 Project Portfolio Management Process			
Project initiation 1. The organization shall identify, prioritize, select and establish new business opportunities, ventures or undertakings in a manner that is consistent with the business strategy and action plans of the organization.	6.2.3.3.1.1	6.2.3.3 a)1	**6.2.3 Portfolio Management process- Define and authorize projects** a)1. Identify potential new or modified capabilities or missions.
	6.2.3.3.1.1	6.2.3.3 a)2	**Define and authorize projects** a)2. Prioritize, select and establish new business opportunities, ventures or undertakings.
Project initiation 2. The organization shall define accountabilities and authorities for each project.	6.2.3.3.1.1	6.2.3.3 a)3	**Define and authorize projects** a)3. Define projects, accountabilities and authorities.
Project initiation 3. The organization shall identify the expected outcomes of the projects.	6.2.3.3.1.1	6.2.3.3 a)4	**Define and authorize projects** a)4. Identify the expected goals, objectives, and outcomes of each project.
	6.2.3.3.1.1	6.3.1.3 a)2	**6.3.1 Project Planning process- Define the project** a)2. Define the project scope as established in the agreement.
Project initiation 4. The organization shall allocate resources for the achievement of project objectives.	6.2.3.3.1.4	6.2.3.3 a)5	**Define and authorize projects** a)5. Identify and allocate resources for the achievement of project goals and objectives.
Project initiation 5. The organization shall identify any multi-project interfaces that must be managed or supported by the project.	6.2.3.3.1.5	6.2.3.3 a)6	**Define and authorize projects** a)6. Identify multi-project interfaces and dependencies to be managed or supported by each project.
Project initiation 6. The organization shall specify the project reporting requirements and review milestones that will govern the execution of the project.	6.2.3.3.1.6	6.2.3.3 a)7	**Define and authorize projects** a)7. Specify the project reporting requirements and review milestones that govern the execution of each project.
Project initiation 7. The organization shall authorize the project to commence execution of approved project plans, including the technical plans.	6.2.3.3.1.7	6.2.3.3 a)8	**Define and authorize projects** a)8. Authorize each project to commence execution of project plans.
	6.2.3.3.1.7	6.3.1.3 c)1	**Activate the project** c)1. Obtain approval to start the project.
	6.2.3.3.1.7	6.3.2.3 c)4	**Control the project** c)4. Authorize the project to proceed toward the next milestone or event, if justified.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Portfolio evaluation 1. The organization shall evaluate ongoing projects to confirm that: a) Projects are making progress towards achieving established goals. b) Projects are complying with project directives. c) Projects are being conducted according to system life cycle plans and procedures. d) Projects remain viable, as indicated by, for example, continuing need for the service, practicable product implementation, acceptable investment benefits.	6.2.3.3.2.1	6.2.3.3 b)1	**Evaluate the portfolio of projects** b)1. Evaluate projects to confirm ongoing viability.
Portfolio evaluation 2. The organization shall act to continue or redirect projects that are satisfactorily progressing or can be expected to progress satisfactorily by appropriate redirection.	6.2.3.3.2.2	6.2.3.3 b)2	**Evaluate the portfolio of projects** b)2. Act to continue or redirect projects that are satisfactorily progressing or can be expected to progress satisfactorily by appropriate redirection.
Project closure 1. The organization shall act to cancel or suspend projects whose disadvantages or risks to the organization outweigh the benefits of continued investments, where agreements permit this.	6.2.3.3.3.1	6.2.3.3 c)1	**Terminate projects** c)1. Where agreements permit, act to cancel or suspend projects whose disadvantages or risks to the organization outweigh the benefits of continued investments.
Project closure 2. After completion of the agreement for products and services, the organization shall act to close the project per organizational policies and procedures and the agreement.	6.2.3.3.3.2	6.2.3.3 c)2	**Terminate projects** c)2. After completion of the agreement for products and services, act to close the projects.
6.2.4 Human Resource Management Process			
Skill identification 1.1 A review of the organization and project requirements shall be conducted to establish and make timely provision for acquiring or developing the resources and skills required by the management and technical staff.	6.2.4.3.1.1	6.2.4.3 a)1	**Identify skills** a)1. Identify skill needs based on current and expected projects.
	6.2.4.3.1.1	6.2.4.3 b)1	**6.2.4 Human Resource process- Develop skills** b)1. Establish skills development strategy.
Skill identification 1.2 These needs may be met through training, recruitment or other staff development mechanisms.	6.2.4.3.1.1	6.2.4.3 b)1	**Develop skills** b)1. Establish skills development strategy.
Skill identification 2. The types and levels of training and knowledge needed to satisfy organization and project requirements shall be determined.	6.2.4.3.1.2	6.2.4.3 a)1	**Identify skills** a)1. Identify skill needs based on current and expected projects.
	6.2.4.3.1.2	6.2.4.3 b)1	**Develop skills** b)1. Establish skills development strategy.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
	6.2.4.3.1.2	6.4.12.3 a)5	**Prepare for operation** a)5. Identify or define training and qualification requirements for personnel needed for software system operation.
Skill development 1.1-1&2 A training plan, addressing implementation schedules, resource requirements, and training needs, should be developed and documented.	6.2.4.3.2.1	6.2.4.3 b)1	**Develop skills** b)1. Establish skills development strategy.
Skill development 2. Training manuals, including presentation materials used in providing training should be developed or acquired.	6.2.4.3.2.2	6.2.4.3 b)2	**Develop skills** b)2. Obtain or develop training, education or mentoring resources.
Skill development 3.1 The training plan shall be implemented to provide training to personnel.	6.2.4.3.2.3	6.2.4.3 b)3	**Develop skills** b)3. Provide planned skill development.
Skill development 3.2 Training records should be maintained.	6.2.4.3.2.3	6.2.4.3 b)4	**Develop skills** b)4. Maintain records of skill development.
Skill acquisition and provision 1.1 Establish a systematic program for recruitment of staff qualified to meet the needs of the organization and projects.	6.2.4.3.3.1	6.2.4.3 c)1	**Acquire and provide skills** c)1. Obtain qualified personnel when skill deficits are identified.
	6.2.4.3.3.1	6.2.4.3 c)2	**Acquire and provide skills** c)2. Maintain and manage the pool of skilled personnel necessary to staff ongoing projects.
Skill acquisition and provision 1.2 Provide opportunities for the career development of existing staff.	6.2.4.3.3.1	6.2.4.3 c)4	**Acquire and provide skills** c)4. Motivate personnel, e.g., through career development and reward mechanisms.
Skill acquisition and provision 2. Define objective criteria that can be used to evaluate staff performance.	6.2.4.3.3.2	6.2.4.3 b)1	**Develop skills** b)1. Establish skills development strategy.
Skill acquisition and provision 3. Evaluate the performance of the staff in respect of their contributions to the goals of the organization or project.	6.2.4.3.3.3	6.2.4.3 c)4	**Acquire and provide skills** c)4. Motivate personnel, e.g. , through career development and reward mechanisms.
Skill acquisition and provision 4. Ensure that feedback is provided to the staff on the results of any evaluations performed.	6.2.4.3.3.4	6.2.4.3 c)4	**Acquire and provide skills** c)4. Motivate personnel, e.g. , through career development and reward mechanisms.
Skill acquisition and provision 5. Maintain adequate records of staff performance including information on skills, training completed, and performance evaluations.	6.2.4.3.3.5	6.2.4.3 a)2	**Identify skills** a)2. Identify and record skills of personnel.
	6.2.4.3.3.5	6.2.4.3 b)4	**Develop skills** b)4. Maintain records of skill development.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Skill acquisition and provision 6.1 Define the organization's and project's need for project teams.	6.2.4.3.3.6	6.2.4.3 c)3	**Acquire and provide skills** c)3. Make project assignments based on project and staff-development needs.
	6.2.4.3.3.6	6.2.4.3 c)5	**Acquire and provide skills** c)5. Control multi-project management interfaces to resolve personnel conflicts.
Skill acquisition and provision 6.2 Define team structure and operating rules. NOTE Conflicts in multi-project resource demands should be resolved.	6.2.4.3.3.6	6.2.4.3 c)3	**Acquire and provide skills** c)3. Make project assignments based on project and staff-development needs.
	6.2.4.3.3.6	6.2.4.3 c)5	**Acquire and provide skills** c)5. Control multi-project management interfaces to resolve personnel conflicts.
	6.2.4.3.3.6	6.3.1.3 b)4	**Plan project and technical management** b)4. Define roles, responsibilities, accountabilities, and authorities.
Skill acquisition and provision 7. Empower teams to perform their role by ensuring the teams have: a) An understanding of their role on the project. b) A shared vision or sense of common interests on the success of the project. c) Appropriate mechanisms or facilities for communication and interactions among teams. d) Support from appropriate management to accomplish project requirements.	6.2.4.3.3.7	6.2.4.3 c)4	**Acquire and provide skills** c)4. Motivate personnel, e.g. , through career development and reward mechanisms.
Skill acquisition and provision 8. It should be ensured that the right mix and categories of appropriately trained personnel are available for the planned activities and tasks in a timely manner.	6.2.4.3.3.8	6.2.4.3 c)3	**Acquire and provide skills** c)3. Make project assignments based on project and staff-development needs.
	6.2.4.3.3.8	6.4.12.3 a)6	**Prepare for operation** a)6. Depending on the need for human intervention and control of operations, assign trained, qualified personnel to be operators.
Knowledge Management 1.1 The organization shall plan the requirements for managing the organization's knowledge assets.	6.2.4.3.4.1	6.2.6.3 a)1	**6.2.6 Knowledge Management process- Plan knowledge management** a)1. Define the knowledge management strategy.
Knowledge Management 1.2 The planning shall include the definition of the infrastructure and training to support the contributors and the users of the organization's knowledge assets, the classification schema for the assets and the asset criteria.	6.2.4.3.4.1	6.2.6.3 a)1	**Plan knowledge management** a)1. Define the knowledge management strategy.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Knowledge Management 2.1 The organization shall establish a network of experts within the organization.	6.2.4.3.4.1	6.2.6.3 b)2	**Share knowledge and skills throughout the organization** b)2. Capture or acquire knowledge and skills.
	6.2.4.3.4.1	6.2.6.3 c)2	**Share knowledge assets throughout the organization** c)2. Develop or acquire knowledge assets.
Knowledge Management 2.2 The network shall contain the identification of the organization's experts, a list of their area of expertise and the identification of available information within a classification schema, e.g., knowledge area.	6.2.4.3.4.2	6.2.6.3 b)1	**Share knowledge and skills throughout the organization** b)1. Establish and maintain a classification for capturing and sharing knowledge and skills across the organization.
	6.2.4.3.4.2	6.2.6.3 c)2	**Share knowledge assets throughout the organization** c)2. Develop or acquire knowledge assets.
Knowledge Management 2.3 The organization shall ensure that the network is maintained current.	6.2.4.3.4.2	6.2.6.3 b)3	**Share knowledge and skills throughout the organization** b)3. Share knowledge and skills across the organization.
	6.2.4.3.4.2	6.2.6.3 d)1	**Manage knowledge, skills, and knowledge assets** d)1. Maintain knowledge, skills, and knowledge assets.
Knowledge Management 3.1 The organization shall establish a mechanism to support the exchange of information between the experts and the flow of expert information to the organization's projects.	6.2.4.3.4.3	6.2.6.3 a)1	**Plan knowledge management** a)1. Define the knowledge management strategy.
	6.2.4.3.4.3	6.2.6.3 c)2	**Share knowledge assets throughout the organization** c)2. Develop or acquire knowledge assets.
Knowledge Management 3.2 The mechanism shall support the organization's access, storage and retrieval requirements.	6.2.4.3.4.3	6.2.6.3 a)1	**Plan knowledge management** a)1. Define the knowledge management strategy.
	6.2.4.3.4.3	6.2.6.3 c)2	**Share knowledge assets throughout the organization** c)2. Develop or acquire knowledge assets.
Knowledge Management 4. The organization shall perform configuration management of assets in accordance with the Configuration Management Process specified in subclause 6.4.2.	6.2.4.3.4.4	6.2.6.3 c)2	**Share knowledge assets throughout the organization** c)2. Develop or acquire knowledge assets.
Knowledge Management 5. The organizations shall capture and maintain information for access by the organization per the plan.	6.2.4.3.4.5	6.2.6.3 c)2	**Share knowledge assets throughout the organization** c)2. Develop or acquire knowledge assets.
6.2.5 Quality Management Process			
Quality management 1. The organization shall establish quality management policies, standards and procedures.	6.2.5.3.1.1	6.2.5.3 a)1	**6.2.5 Quality Management process- Plan quality management** a)1. Establish quality management policies, objectives, and procedures.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Quality management 2. The organization shall establish organization quality management goals and objectives based on business strategy for customer satisfaction.	6.2.5.3.1.2	6.2.5.3 a)3	**Plan quality management** a)3. Define quality evaluation criteria and methods.
Quality management 3. The organization shall define responsibilities and authority for implementation of quality management.	6.2.5.3.1.3	6.2.5.3 a)2	**Plan quality management** a)2. Define responsibilities and authority for implementation of quality management.
Quality management 4. The organization shall assess customer satisfaction and report.	6.2.5.3.1.4	6.2.5.3 b)2	**Evaluate quality management** b)2. Assess customer satisfaction.
Quality management 5 The organization shall conduct periodic reviews of project quality plans. NOTE Assure that quality objectives based on the stakeholder requirements are established for each project.	6.2.5.3.1.5	6.2.5.3 b)3	**Evaluate quality management** b)3. Conduct periodic reviews of project Quality Assurance activities for compliance with the Quality Management policies, objectives, and procedures.
Quality management 6. The organization shall monitor the status of quality improvements on products and services.	6.2.5.3.1.6	6.2.5.3 b)4	**Evaluate quality management** b)4. Monitor the status of quality improvements on processes, products, and services.
Quality management corrective action 1. The organization shall take corrective actions when quality management goals are not achieved.	6.2.5.3.2.1	6.2.5.3 c)1	**Perform corrective and preventive action** c)1. Plan corrective actions when quality management objectives are not achieved.
Quality management corrective action 2. The organization shall implement corrective actions and communicate results through the organization.	6.2.5.3.2.2	6.2.5.3 c)3	**Perform corrective and preventive action** c)3. Monitor corrective and preventive actions to completion and inform relevant stakeholders.
6.3.1 Project Planning Process			
Project initiation 1. The manager shall establish the requirements of the project to be undertaken.	6.3.1.3.1.1	6.3.1.3 a)1	**6.3.1 Project Planning process- Define the project** a)1. Identify the project objectives and constraints.
Project initiation 2. Once the project requirements are established, the manager shall establish the feasibility of the project by checking that the resources (personnel, materials, technology, and environment) required to execute and manage the project are available, adequate, and appropriate and that the timescales to completion are achievable.	6.3.1.3.1.2	6.3.1.3 a)1	**Define the project** a)1. Identify the project objectives and constraints.
	6.3.1.3.1.2	6.3.2.3 b)2	**Assess the project** b)2. Assess management and technical plans against objectives to determine adequacy and feasibility.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Project initiation 3. As necessary, and by agreement of all parties concerned, the requirements of the project may be modified at this point to achieve the completion criteria.	6.3.1.3.1.3	6.3.1.3 a)1	**Define the project** a)1. Identify the project objectives and constraints.
Project planning 1.1 The manager shall prepare the plans for execution of the project.	6.3.1.3.2.1	6.3.1.3 a)3	**Define the project** a)3. Define and maintain a life cycle model that is comprised of stages using the defined life cycle models of the organization.
	6.3.1.3.2.1	6.3.1.3 a)5	**Define the project** a)5. Define and maintain the processes that will be applied on the project.
	6.3.1.3.2.1	6.3.1.3 b)1	**Plan project and technical management** b)1. Define and maintain a project schedule based on management and technical objectives and work estimates.
	6.3.1.3.2.1	6.3.1.3 b)7	**Plan project and technical management** b)7.1 Generate [and communicate] a plan for project and technical management and execution, including reviews.
Project planning 1.2 The plans associated with the execution of the project shall contain descriptions of the associated activities and tasks and identification of the software products that will be provided.	6.3.1.3.2.1	6.3.1.3 a)5	**Define the project** a)5. Define and maintain the processes that will be applied on the project.
Project planning 1.3 These plans shall include, but are not limited to, the following: a) Schedules for the timely completion of tasks. b) Estimation of effort. c) Adequate resources needed to execute the tasks. d) Allocation of tasks. e) Assignment of responsibilities. f) Quantification of risks associated with the tasks or the process itself. g) Quality assurance measures to be employed throughout the project. h) Costs associated with the process execution. i) Provision of environment and infrastructure. j) Definition and maintenance of a life cycle model that is comprised of stages using the defined life cycle models for projects of the organization.	6.3.1.3.2.1	6.3.1.3 a)3	**Define the project** a)3. Define and maintain a life cycle model that is comprised of stages using the defined life cycle models of the organization.
i) Provision of environment and infrastructure.	6.3.1.3.2.1	6.3.1.3 b)5	**Plan project and technical management** b)5. Define the infrastructure and services required.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
	6.3.1.3.2.1	6.3.1.3 b)6	**Plan project and technical management** b)6. Plan the acquisition of materials and enabling systems and services supplied from outside the project.
j) Definition and maintenance of a life cycle model that is comprised of stages using the defined life cycle models for projects of the organization.	6.3.1.3.2.1	6.3.1.3 a)5	**Define the project** a)5. Define and maintain the processes that will be applied on the project.
a) Schedules for the timely completion of tasks. f) Quantification of risks associated with the tasks or the process itself. g) Quality assurance measures to be employed throughout the project. j) Definition and maintenance of a life cycle model that is comprised of stages using the defined life cycle models for projects of the organization.	6.3.1.3.2.1	6.3.1.3 b)2	**Plan project and technical management** b)2. Define achievement criteria for the life cycle stage decision gates, delivery dates and major dependencies on external inputs or outputs.
a) Schedules for the timely completion of tasks. b) Estimation of effort. h) Costs associated with the process execution. i) Provision of environment and infrastructure.	6.3.1.3.2.1	6.3.1.3 b)3	**Plan project and technical management** b)3. Define the costs and plan a budget.
a) Schedules for the timely completion of tasks. b) Estimation of effort. c) Adequate resources needed to execute the tasks. d) Allocation of tasks. e) Assignment of responsibilities.	6.3.1.3.2.1	6.3.1.3 b)1	**Plan project and technical management** b)1. Define and maintain a project schedule based on management and technical objectives and work estimates.
c) Adequate resources needed to execute the tasks. d) Allocation of tasks. e) Assignment of responsibilities.	6.3.1.3.2.1	6.3.1.3 b)4	**Plan project and technical management** b)4. Define roles, responsibilities, accountabilities, and authorities.
Project activation 1. The manager shall obtain authorization for the project.	6.3.1.3.3.1	6.2.3.3 a)8	**Define and authorize projects** a)8. Authorize each project to commence execution of project plans.
	6.3.1.3.3.1	6.3.1.3 c)1	**Activate the project** c)1. Obtain approval to start the project.
Project activation 2. The manager shall submit requests for necessary resources to perform the project.	6.3.1.3.3.2	6.3.1.3 c)2	**Activate the project** c)2. Submit requests and obtain commitments for necessary resources to perform the project.
Project activation 3. The manager shall initiate the implementation of the project plan/s to satisfy the objectives and criteria set, exercising control over the project.	6.3.1.3.3.3	6.3.1.3 c)3	**Activate the project** c)3. Implement project plans.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.3.2 Project Assessment and Control Process			
Project monitoring 1. The manager shall monitor the overall execution of the project, providing both internal reporting of the project progress and external reporting to the acquirer as defined in the contract.	6.3.2.3.1.1	6.3.2.3 b)3	**6.3.2 Project assessment and control process- Assess the project** b)3. Assess project and technical status against appropriate plans to determine actual and projected cost, schedule, and performance variances.
Project control 1.1 The manager shall investigate, analyze, and resolve the problems discovered during the execution of the project.	6.3.2.3.2.1	6.3.2.3 c)1	**Control the project** c)1. Initiate necessary actions needed to address identified issues.
Project control 1.2 The resolution of problems may result in changes to plans.	6.3.2.3.2.1	6.3.2.3 c)2	**Control the project** c)2. Initiate necessary project replanning.
Project control 1.3 It is the manager's responsibility to ensure the impact of any changes is determined, controlled, and monitored.	6.3.2.3.2.1	6.3.1.3 b)4	**6.3.1 Project Planning process- Plan project and technical management** b)4. Define roles, responsibilities, accountabilities, and authorities.
	6.3.2.3.2.1	6.3.2.3 c)1	**Control the project** c)1. Initiate necessary actions needed to address identified issues.
Project control 1.4 Problems and their resolution shall be documented.	6.3.2.3.2.1	6.3.2.3 c)1	**Control the project** c)1. Initiate necessary actions needed to address identified issues.
Project control 2.1 The manager shall report, at agreed points, the progress of the project, declaring adherence to the plans and resolving instances of the lack of progress.	6.3.2.3.2.2	6.3.2.3 b)10	**Assess the project** b)10. Record and provide status and findings from assessment tasks.
	6.3.2.3.2.2	6.3.2.3 c)1	**Control the project** c)1. Initiate necessary actions needed to address identified issues.
Project control 2.2 These include internal and external reporting as required by the organizational procedures and the contract.	6.3.2.3.2.2	6.3.2.3 c)1	**Control the project** c)1. Initiate necessary actions needed to address identified issues.
Project assessment 1. The manager shall ensure that the software products and plans are evaluated for satisfaction of requirements.	6.3.2.3.3.1	6.3.2.3 b)11	**Assess the project** b)11. Monitor process execution within the project.
Project assessment 2. The manager shall assess the evaluation results of the software products, activities, and tasks completed during the execution of the project for achievement of the objectives and completion of the plans.	6.3.2.3.3.2	6.2.3.3 b)1	**6.2.3 Portfolio Management process- Evaluate the portfolio of projects** b)1. Evaluate projects to confirm ongoing viability.
	6.3.2.3.3.2	6.3.2.3 b)11	**Assess the project** b)11. Monitor process execution within the project.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Project closure 1. When all software products, activities, and tasks are completed, the manager shall determine whether the project is complete, taking into account the criteria as specified in the contract or as part of organization's procedure.	6.3.2.3.4.1	6.2.3.3 c)2	**Terminate projects** c)2. After completion of the agreement for products and services, act to close the projects..
Project closure 2. These results and records shall be archived in a suitable environment as specified in the contract.	6.3.2.3.4.2	6.3.6.3 b)4	**6.3.6 Information Management process- Perform information management** b)4. Archive designated information.
6.3.3 Decision Management Process			
Decision planning 1 The project shall define a decision-making strategy. NOTE This includes identifying decision categories and a prioritization scheme, and identifying responsible parties. The decision makers are identified and given the responsibility and authority to make decisions. Decisions may arise as a result of an effectiveness assessment, a technical trade-off, a problem needing to be solved, action needed as a response to risk exceeding the acceptable threshold, a new opportunity or approval for project progression to the next life cycle stage. A decision-making strategy includes the identification and allocation of responsibility for, and authority to make, decisions.	6.3.3.3.1.1	6.3.3.3 a)1	6.3.3 Decision Management process- Prepare for decisions a)1. Define a decision management strategy.
Decision planning 2. The project shall involve relevant parties in the decision-making in order to draw on experience and knowledge.	6.3.3.3.1.2	6.3.3.3 a)3	**Prepare for decisions** a)3. Involve relevant stakeholders in the decision-making in order to draw on experience and knowledge.
Decision planning 3. The project shall identify the circumstances and need for a decision.	6.3.3.3.1.3	6.3.3.3 a)2	**Prepare for decisions** a)2. Identify the circumstances and need for a decision.
Decision analysis 1.1 The project shall select and declare the decision-making strategy for each decision situation.	6.3.3.3.2.1	6.3.3.3 b)1	**Analyze the decision information** b)1. Select and declare the decision management strategy for each decision.
Decision analysis 1.2 The project shall identify desired outcomes and measurable success criteria.	6.3.3.3.2.1	6.3.3.3 b)2	**Analyze the decision information** b)2. Determine desired outcomes and measurable selection criteria.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Decision analysis 2. The project shall evaluate the balance of consequences of alternative actions, using the defined decision-making strategy, to arrive at an optimization of, or an improvement in, an identified decision situation.	6.3.3.3.2.2	6.3.3.3 b)3	**Analyze the decision information** b)3. Identify the trade space and alternatives.
	6.3.3.3.2.2	6.3.3.3 b)4	**Analyze the decision information** b)4. Evaluate each alternative against the criteria.
	6.3.3.3.2.2	6.3.3.3 c)1	**Make and manage decisions** c)1. Determine preferred alternative for each decision.
Decision tracking 1. The project shall record, track, evaluate and report decision outcomes to confirm that problems have been effectively resolved, adverse trends have been reversed and advantage has been taken of opportunities.	6.3.3.3.3.1	6.3.3.3 c)2	**Make and manage decisions** c)2. Record the resolution, decision rationale, and assumptions.
	6.3.3.3.3.1	6.3.3.3 c)3	**Make and manage decisions** c)3. Record, track, evaluate and report decisions.
Decision tracking 2. The project shall maintain records of problems and opportunities and their disposition, as stipulated in agreements or organizational procedures and in a manner that permits auditing and learning from experience.	6.3.3.3.3.2	6.3.3.3 c)3	**Make and manage decisions** c)3. Record, track, evaluate and report decisions.
6.3.4 Risk Management Process			
Risk Management planning 1. Risk management policies describing the guidelines under which risk management is to be performed shall be defined.	6.3.4.3.1.1	6.3.4.3 a)1	**6.3.4 Risk Management process- Plan risk management** a)1. Define the risk management strategy.
Risk Management planning 2. A description of the Risk Management Process to be implemented shall be documented.	6.3.4.3.1.2	6.3.4.3 a)2	**Plan risk management** a) 2. Define and record the context of the Risk Management process.
Risk Management planning 3. The parties responsible for performing risk management and their roles and responsibilities shall be identified.	6.3.4.3.1.3	6.3.4.3 a)1	**Plan risk management** a)1. Define the risk management strategy.
Risk Management planning 4. The responsible parties shall be provided with adequate resources to perform the Risk Management Process.	6.3.4.3.1.4	6.3.4.3 a)1	**Plan risk management** a)1. Define the risk management strategy.
Risk Management planning 5. A description of the process for evaluating and improving the Risk Management Process shall be provided.	6.3.4.3.1.5	6.3.4.3 a)1	**Plan risk management** a)1. Define the risk management strategy.
Risk profile management 1.1-1&2 The context of the Risk Management Process shall be defined and documented.	6.3.4.3.2.1	6.3.4.3 a)2	**Plan risk management** a)2. Define and record the context of the Risk Management process.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Risk profile management 2. Risk thresholds, defining the conditions under which a level of risk may be accepted, shall be documented.	6.3.4.3.2.2	6.3.4.3 b)1	**Manage the risk profile** b)1. Define and record the risk thresholds and conditions under which a level of risk may be accepted.
Risk profile management 3. A risk profile shall be established and maintained.	6.3.4.3.2.3	6.3.4.3 b)2	**Manage the risk profile** b)2. Establish and maintain a risk profile.
Risk profile management 4. The relevant risk profile shall be communicated periodically to stakeholders based upon their needs.	6.3.4.3.2.4	6.3.4.3 b)3	**Manage the risk profile** b)3. Periodically provide the relevant risk profile to stakeholders based upon their needs.
Risk analysis 1. Risks shall be identified in the categories described in the risk management context.	6.3.4.3.3.1	6.3.4.3 c)1	**Analyze risks** c)1. Identify risks in the categories described in the risk management context.
Risk analysis 2. The probability of occurrence and consequences of each risk identified shall be estimated.	6.3.4.3.3.2	6.3.4.3 c)2	**Analyze risks** c)2. Estimate the likelihood of occurrence and consequences of each identified risk.
Risk analysis 3. Each risk shall be evaluated against its risk thresholds.	6.3.4.3.3.3	6.3.4.3 c)3	**Analyze risks** c)3. Evaluate each risk against its risk thresholds.
Risk analysis 4.1-1&2 For each risk that is above its risk threshold, recommended treatment strategies shall be defined and documented.	6.3.4.3.3.4	6.3.4.3 c)4	**Analyze risks** c)4. For each risk that does not meet its risk threshold, define and record recommended treatment strategies and measures.
Risk analysis 4.2-1&2 Measures indicating the effectiveness of the treatment alternatives shall also be defined and documented.	6.3.4.3.3.4	6.3.4.3a)1	**Plan risk management** a)1. Define the risk management strategy.
Risk treatment 1. Stakeholders shall be provided recommended alternatives for risk treatment in risk action requests.	6.3.4.3.4.1	6.3.4.3 d)1	**Treat risks** d)1. Identify recommended alternatives for risk treatment.
Risk treatment 2. If the stakeholders determine that actions should be taken to make a risk acceptable, then a risk treatment alternative shall be implemented.	6.3.4.3.4.2	6.3.4.3 d)2	**Treat risks** d)2. Implement risk treatment alternatives for which the stakeholders determine that actions should be taken to make a risk acceptable.
Risk treatment 3. If the stakeholders accept a risk that exceeds its threshold, it shall be considered a high priority and monitored continuously to determine if any future risk treatment actions are necessary.	6.3.4.3.4.3	6.3.4.3 d)3	**Treat risks** d)3. When the stakeholders accept a risk that does not meet its threshold, consider it a high priority and monitor it continually to determine if future risk treatment actions are necessary or if its priority has changed.
Risk treatment 4. Once a risk treatment is selected, it shall receive the same management actions as problems do, in accordance with the assessment and control activities in subclause 6.3.2 of this standard or ISO/IEC 15288:2008.	6.3.4.3.4.4	6.3.4.3 d)4	**Treat risks** d)4. Once a risk treatment is selected, coordinate management action.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Risk monitoring 1.1 All risks and the risk management context shall be continuously monitored for changes.	6.3.4.3.5.1	6.3.4.3 e)1	**Monitor risks** e)1. Continually monitor risks and the risk management context for changes and evaluate the risks when their state has changed.
Risk monitoring 1.2 Risks whose states have changed shall undergo risk evaluation.	6.3.4.3.5.1	6.3.4.3 e)3	**Monitor risks** e)3. Continually monitor for the emergence of new risks and sources throughout the life cycle.
Risk monitoring 2. Measures shall be implemented and monitored to evaluate the effectiveness of risk treatments.	6.3.4.3.5.2	6.3.4.3 e)2	**Monitor risks** e)2. Implement and monitor measures to evaluate the effectiveness of risk treatments.
Risk monitoring 3. The project shall continuously monitor for new risks and sources throughout its life cycle.	6.3.4.3.5.3	6.3.4.3 e)3	**Monitor risks** e)3. Continually monitor for the emergence of new risks and sources throughout the life cycle.
Risk management process evaluation 1 Information shall be collected throughout the project's life cycle for purposes of improving the Risk Management Process and generating lessons learned. NOTE The risk information includes the risks identified, their sources, their causes, their treatment, and the success of the treatments selected. 2 The Risk Management Process shall be periodically reviewed for its effectiveness and efficiency. 3 Information on the risks identified, their treatment, and the success of the treatments shall be reviewed periodically for purposes of identifying systemic project and organizational risks.	6.3.4.3.6.1	None	None of activities and tasks is mapped.
6.3.5 Configuration Management Process			
Configuration management planning 1. The project shall define a configuration management strategy.	6.3.5.3.1.1	6.3.5.3 a)1	**6.3.5 Configuration Management process- Plan configuration management** a)1. Define a configuration management strategy, including approaches for the following: i) Governance of CM, including roles, responsibilities, accountabilities, and authorities, and use of configuration control (change control) boards; and ii) Consideration of the level of risk and impact in approval of configuration baselines and regular and emergency change requests.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Configuration management planning 2. The project shall identify items that are subject to configuration control.	6.3.5.3.1.2	6.3.5.3 b)1	**Perform configuration identification** b)1. Select the software system elements to be uniquely identified as configuration items subject to configuration control.
Configuration management execution 1. The project shall maintain information on configurations with an appropriate level of integrity and security.	6.3.5.3.2.1	6.3.5.3 b)3	**Perform configuration identification** b)3. Define baselines through the life cycle.
	6.3.5.3.2.1	6.3.5.3 e)1	**Perform configuration status accounting** e)1. Develop and maintain the CM status information for software system elements, baselines, and releases.
Configuration management execution 2. The project shall ensure that changes to configuration baselines are properly identified, recorded, evaluated, approved, incorporated and verified.	6.3.5.3.2.2	6.3.5.3 c)3	**Perform configuration change management** c)3. Track and manage approved changes to the baseline, Requests for Change and Requests for Variance.
6.3.6 Information Management Process			
Information management planning 1. The project shall define the items of information that will be managed during the system life cycle and, according to organizational policy or legislation, maintained for a defined period beyond.	6.3.6.3.1.1	6.3.6.3 a)2	6.3.6 Information Management process-Prepare for information management a)2. Define the items of information that will be managed.
Information management planning 2. The project shall designate authorities and responsibilities regarding the origination, generation, capture, archiving and disposal of items of information.	6.3.6.3.1.2	6.3.6.3 a)3	**Prepare for information management** a)3. Designate authorities and responsibilities for information management.
Information management planning 3. The project shall define the rights, obligations and commitments regarding the retention of, transmission of and access to information items.	6.3.6.3.1.3	6.3.6.3 a)3	**Prepare for information management** a)3. Designate authorities and responsibilities for information management.
Information management planning 4. The project shall define the content, semantics, formats and medium for the representation, retention, transmission and retrieval of information.	6.3.6.3.1.4	6.3.6.3 a)4	**Prepare for information management** a)4. Define the content, formats and structure of information items.
Information management planning 5. The project shall define information maintenance actions.	6.3.6.3.1.5	6.3.6.3 a)5	**Prepare for information management** a)5. Define information maintenance actions.
Information management execution 1. The project shall obtain the identified items of information.	6.3.6.3.2.1	6.3.6.3 b)1	**Perform information management** b)1. Obtain, develop, or transform the identified items of information.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Information management execution 2. The project shall maintain information items and their storage records according to integrity, security and privacy requirements.	6.3.6.3.2.2	6.3.6.3 b)2	**Perform information management** b)2. Maintain information items and their storage records, and record the status of information.
Information management execution 3. The project shall retrieve and distribute information to designated parties as required by agreed schedules or defined circumstances.	6.3.6.3.2.3	6.3.6.3 b)3	**Perform information management** b)3. Publish, distribute or provide access to information and information items to designated stakeholders.
Information management execution 4. The project shall provide official documentation as required.	6.3.6.3.2.4	6.3.6.3 b)3	**Perform information management** b)3. Publish, distribute or provide access to information and information items to designated stakeholders.
Information management execution 5. The project shall archive designated information, in accordance with the audit, knowledge retention and project closure purposes.	6.3.6.3.2.5	6.3.6.3 b)4	**Perform information management** b)4. Archive designated information.
Information management execution 6. The project shall dispose of unwanted, invalid or unverifiable information according to organization policy, and security and privacy requirements.	6.3.6.3.2.6	6.3.6.3 b)5	**Perform information management** b)5. Dispose of unwanted, invalid or unvalidated information.
6.3.7 Measurement process			
Measurement planning 1. The project shall describe the characteristics of the organization that are relevant to measurement.	6.3.7.3.1.1	6.3.7.3 a)2	**6.3.7 Measurement process- Prepare for measurement** a)2. Describe the characteristics of the organization that are relevant to measurement, such as business and technical objectives.
Measurement planning 2 The project shall identify and prioritize the information needs.	6.3.7.3.1.2	6.4.3.3 c)2	**6.4.3 System/Software requirements definition process- Analyze system/ software requirements** c)2. Define critical performance measures that enable the assessment of technical achievement.
	6.3.7.3.1.2	6.3.7.3 a)3	**Prepare for measurement** a)3. Identify and prioritize the information needs.
Measurement planning 3 The project shall select and document measures that satisfy the information needs.	6.3.7.3.1.3	6.3.7.3 a)4	**Prepare for measurement** a)4. Select and specify measures that satisfy the information needs.
Measurement planning 4 The project shall define data collection, analysis, and reporting procedures.	6.3.7.3.1.4	6.3.7.3 a)5	**Prepare for measurement** a)5. Define data collection, analysis, access and reporting procedures.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Measurement planning 5. The project shall define criteria for evaluating the information products and the measurement process.	6.3.7.3.1.5	6.3.7.3 a)6	**Prepare for measurement** a)6. Define criteria for evaluating the information items and the Measurement process.
Measurement planning 6. The project shall review, approve, and provide resources for measurement tasks.	6.3.7.3.1.6	6.3.7.3 a)7	**Prepare for measurement** a)7. Identify and plan for the necessary enabling systems or services to be used.
Measurement planning 7. The project shall acquire and deploy supporting technologies.	6.3.7.3.1.7	6.3.7.3 a)7	**Prepare for measurement** a)7. Identify and plan for the necessary enabling systems or services to be used.
Measurement performance 1 The project shall integrate procedures for data generation, collection, analysis and reporting into the relevant processes.	6.3.7.3.2.1	6.3.2.3 b)9	**6.3.2 Project assessment and control process- Assess the project** b)9. Analyze measurement results and make recommendations.
	6.3.7.3.2.1	6.3.7.3 a)5	**Prepare for measurement** a)5. Define data collection, analysis, access and reporting procedures.
	6.3.7.3.2.1	6.3.7.3 b)1	**Perform measurement** b)1. Integrate manual or automated procedures for data generation, collection, analysis and reporting into the relevant processes.
Measurement performance 2. The project shall collect, store, and verify data.	6.3.7.3.2.2	6.3.7.3 b)2	**Perform measurement** b)2. Collect, store, and verify data.
Measurement performance 3 The project shall analyze data and develop information products.	6.3.7.3.2.3	6.3.2.3 b)9	**Assess the project** b)9. Analyze measurement results and make recommendations.
	6.3.7.3.2.3	6.3.7.3 b)3	**Perform measurement** b)3. Analyze data and develop information items.
Measurement performance 4.1-1&2 The project shall document and communicate results to the measurement users.	6.3.7.3.2.4	6.3.7.3 b)4	**Perform measurement** b)4 Record results and inform the measurement users.
Measurement evaluation 1. The project shall evaluate information products and the measurement process.	6.3.7.3.3.1	6.3.8.3 c)1	**6.3.8 Quality Assurance process- Perform process evaluations** c)1. Evaluate project life cycle processes for conformance.
	6.3.7.3.3.1	6.3.7.3 b)3	**Perform measurement** b)3. Analyze data and develop information items.
Measurement evaluation 2.1-1 The project shall identify [and communicate] potential improvements.	6.3.7.3.3.2	6.3.7.3 b)3	**Perform measurement** b)3. Analyze data and develop information items.
Measurement evaluation 2.1-2 The project shall [identify and] communicate potential improvements.	6.3.7.3.3.2	6.3.7.3 b)4	**Perform measurement** b)4.Record results and inform the measurement users.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.4.1 Stakeholder Requirements Definition Process			
Stakeholder identification 1. The project shall identify the individual stakeholders or stakeholder classes who have a legitimate interest in the system throughout its life cycle.	6.4.1.3.1.1	6.4.2.3 a)1	**6.4.2 Stakeholder Needs and Requirements Definition process- Prepare for Stakeholder Needs and Requirements Definition** a)1. Identify the stakeholders who have an interest in the software system throughout its life cycle.
Requirements identification 1. The project shall elicit stakeholder requirements.	6.4.1.3.2.1	6.4.2.3 b)2	**Define stakeholder needs** b)2. Identify stakeholder needs.
	6.4.1.3.2.1	6.4.2.3 b)4	**Define stakeholder needs** b)4. Define the stakeholder needs and rationale.
	6.4.1.3.2.1	6.4.2.3 d)3	**Transform stakeholder needs into stakeholder requirements** d)3. Define stakeholder requirements, consistent with life cycle concepts, scenarios, interactions, constraints, and critical quality characteristics.
Requirements identification 2 The project shall define the constraints on a system solution that are unavoidable consequences of existing agreements, management decisions and technical decisions. NOTE These may result from 1) instances or areas of stakeholder-defined solution; 2) implementation decisions made at higher levels of system hierarchical structure; 3) required use of defined enabling systems, resources and staff.	6.4.1.3.2.2	6.4.2.3 d)1	**Transform stakeholder needs into stakeholder requirements** d)1. Identify the constraints on a system solution.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Requirements identification 3 The project shall define a representative set of activity sequences to identify all required services that correspond to anticipated operational and support scenarios and environments. NOTE Scenarios are used to analyze the operation of the system in its intended environment in order and to identify requirements that may not have been formally specified by any of the stakeholders, e.g., legal, regulatory and social obligations. The context of use of the system is identified and analyzed. Include in the context analysis the activities that users perform to achieve system objectives, the relevant characteristics of the end-users of the system (e.g., expected training, degree of fatigue), the physical environment (e.g., available light, temperature) and any equipment to be used (e.g., protective or communication equipment). The social and organizational influences on users that could affect system use or constrain its design are analyzed when applicable.	6.4.1.3.2.3	6.4.1.3 c)1	**Characterize the solution space** c)1. Define preliminary operational concepts and other concepts in life cycle stages.
	6.4.1.3.2.3	6.4.2.3 c)1	**Develop the operational concept and other life cycle concepts** c)1. Define a representative set of scenarios to identify the required capabilities that correspond to anticipated operational and other life cycle concepts.
Requirements identification 4. The project shall identify the interaction between users and the system, taking into the account human capabilities and skills limitations. NOTE 1 Usability requirements are determined, establishing, as a minimum, the most effective, efficient, and reliable human performance and human-system interaction. Where possible, applicable standards, e.g., ISO 9241, and accepted professional practices are used in order to define: a) Physical, mental, and learned capabilities; b) Work place environment and facilities, including other equipment in the context of use; c) Normal, unusual, and emergency conditions; d) Operator and user recruitment, training and culture. NOTE 2 If usability is important, usability requirements should be planned, specified, and implemented through the life cycle processes.	6.4.1.3.2.4	6.4.2.3 b)1	**Define stakeholder needs** b)1. Define context of use within the concept of operations and the preliminary life cycle concepts.
	6.4.1.3.2.4	6.4.2.3 c)2	**Develop the operational concept and other life cycle concepts** c)2. Identify the factors affecting interactions between users and the system. i) Anticipated physical, mental, and learned capabilities of the users; ii) Workplace, environment and facilities, including other equipment in the context of use; iii) Normal, unusual, and emergency conditions; and iv) Operator and user recruitment, training and culture.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Requirements identification 5 The project shall specify health, safety, security, environment and other stakeholder requirements and functions that relate to critical qualities and shall address possible adverse effects of use of the system on human health and safety.	6.4.1.3.2.5	6.4.2.3 d)2	**Transform stakeholder needs into stakeholder requirements** d)2. Identify the stakeholder requirements and functions that relate to critical quality characteristics, such as assurance, safety, security, environment, or health.
Requirements evaluation 1. The project shall analyze the complete set of elicited requirements.	6.4.1.3.3.1	6.4.2.3 e)1	**Analyze stakeholder requirements** e)1. Analyze the complete set of stakeholder requirements.
Requirements agreement 1. The project shall resolve requirements problems. NOTE This includes requirements that cannot be realized or are impractical to achieve.	6.4.1.3.4.1	6.4.2.3 e)4	**Analyze stakeholder requirements** e)4. Resolve stakeholder requirements issues.
Requirements agreement 2. The project shall feed back the analyzed requirements to applicable stakeholders to ensure that the needs and expectations have been adequately captured and expressed.	6.4.1.3.4.2	6.4.2.3 e)3	**Analyze stakeholder requirements** e)3. Feed back the analyzed requirements to applicable stakeholders to validate that their needs and expectations have been adequately captured and expressed.
Requirements agreement 3, The project shall establish with stakeholders that their requirements are expressed correctly.	6.4.1.3.4.3	6.4.2.3 f)1	**Manage the stakeholder needs and requirements definition** f)1. Obtain explicit agreement with designated stakeholders on the stakeholder requirements.
Requirements recording 1. The project shall record the stakeholder requirements in a form suitable for requirements management through the life cycle and beyond.	6.4.1.3.5.1	6.4.2.3 f)3	**Manage the stakeholder needs and requirements definition** f)3. Provide key artifacts and information items that have been selected for baselines.
Requirements recording 2 The project shall maintain stakeholder requirements traceability to the sources of stakeholder need. NOTE The stakeholder requirements are reviewed at key decision times in the life cycle to ensure that account is taken of any changes of need.	6.4.1.3.5.2	6.4.2.3 f)2	**Manage the stakeholder needs and requirements definition** f)2. Maintain traceability of stakeholder needs and requirements.
6.4.2 System Requirements Analysis Process			
Requirements specification 1.1 The specific intended use of the system to be developed shall be analyzed to specify system requirements.	6.4.2.3.1.1	6.4.3.3 b)1	**Define system/software requirements** b)1. Define each function that the software system or element is required to perform.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Requirements specification 1.2 The system requirements specification shall describe: functions and capabilities of the system; business, organizational and user requirements; safety, security, human-factors engineering (ergonomics), interface, operations, and maintenance requirements; design constraints and qualification requirements. NOTE 1 Appropriate techniques should be performed to optimize the preferred solution. NOTE 2 The impact of the system requirements on the operating environment should be understood. NOTE 3 System requirements should be prioritized, approved, baselined and communicated to all affected parties. Updates to the requirements baseline should be evaluated for cost, schedule and technical impact.	6.4.2.3.1.1	6.4.3.3 b)1	**Define system/software requirements** b)1. Define each function that the software system or element is required to perform.
	6.4.2.3.1.1	6.4.3.3 b)5	**Define system/software requirements** b)5. Define system/software requirements and requirements attributes,
	6.4.2.3.1.1	6.4.3.3 c)2	**Analyze system/software requirements** c)2. Define critical performance measures that enable the assessment of technical achievement.
Requirements specification 1.3 The system requirements specification shall be documented.	6.4.2.3.1.1	6.4.3.3 d)3	**Manage system/software requirements** d)3. Provide key artifacts and information items that have been selected for baselines.
Requirements evaluation 1.1 The system requirements shall be evaluated considering the criteria listed below. a) Traceability to acquisition needs; b) Consistency with acquisition needs; c) Testability d) Feasibility of system architectural design; e) Feasibility of operation and maintenance.	6.4.2.3.2.1	6.4.3.3 c)1	**Analyze system/software requirements** c)1. Analyze the complete set of system/software requirements.
	6.4.2.3.2.1	6.4.3.3 c)4	**Analyze system/software requirements** c)4. Identify and resolve issues, deficiencies, conflicts, and weaknesses within the complete set of requirements.
Requirements evaluation 1.2 The results of evaluations shall be documented.	6.4.2.3.2.1	6.4.3.3 c)1	**Analyze system/software requirements** c)1. Analyze the complete set of system/software requirements.
6.4.3 System Architectural Design Process			
Establishing architecture 1.1 A top-level architecture of the system shall be established.	6.4.3.3.1.1	6.4.4.3 c)2	**Develop models and views of candidate architectures** c)2. Identify architectural entities and relationships between entities that address key stakeholder concerns and critical software system requirements.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
	6.4.3.3.1.1	6.4.4.3 e)3	**Assess architecture candidates** e)3. Select the preferred architecture(s) and capture key decisions and rationale.
Establishing architecture 1.2 The architecture shall identify items of hardware, software, and manual operations. NOTE 1 Internal and external interfaces of each system element should be defined in the system architecture. NOTE 2 Human-centred design activities should be identified and performed and human factors and ergonomic knowledge and techniques should be incorporated in system design. NOTE 3 The system architecture design and the relationship with the system requirements should be baselined and communicated to all affected parties.	6.4.3.3.1.1	6.4.4.3 c)2	**Develop models and views of candidate architectures** c)2. Identify architectural entities and relationships between entities that address key stakeholder concerns and critical software system requirements.
	6.4.3.3.1.1	6.4.4.3 c)3	**Develop models and views of candidate architectures** c)3. Allocate concepts, properties, characteristics, behaviors, functions, or constraints that are significant to architecture decisions of the software system to architectural entities.
	6.4.3.3.1.1	6.4.4.3 d)1	**Relate the architecture to design** d)1. Identify software system elements that relate to architectural entities and the nature of these relationships.
	6.4.3.3.1.1	6.4.4.3 e)3	**Assess architecture candidates** e)3. Select the preferred architecture(s) and capture key decisions and rationale.
Establishing architecture 1.3 It shall be ensured that all the system requirements are allocated among the items.	6.4.3.3.1.1	6.4.4.3 c)2	**Develop models and views of candidate architectures** c)2. Identify architectural entities and relationships between entities that address key stakeholder concerns and critical software system requirements.
	6.4.3.3.1.1	6.4.4.3 c)3	**Develop models and views of candidate architectures** c)3. Allocate concepts, properties, characteristics, behaviors, functions, or constraints that are significant to architecture decisions of the software system to architectural entities.
	6.4.3.3.1.1	6.4.4.3 d)3	**Relate the architecture to design** d)3. Partition, align and allocate requirements to architectural entities and system elements.
	6.4.3.3.1.1	6.4.4.3 f)6	**Manage the selected architecture** f)6. Maintain traceability of the architecture.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Establishing architecture 1.4 Hardware configuration items, software configuration items, and manual operations shall be subsequently identified from these items.	6.4.3.3.1.1	6.4.4.3 c)2	**Develop models and views of candidate architectures** c)2. Identify architectural entities and relationships between entities that address key stakeholder concerns and critical software system requirements.
	6.4.3.3.1.1	6.4.4.3 d)3	**Relate the architecture to design** d)3. Partition, align and allocate requirements to architectural entities and system elements.
	6.4.3.3.1,1	6.4.4.3 f)6	**Manage the selected architecture** f)6. Maintain traceability of the architecture.
Establishing architecture 1.5 The system architecture and the system requirements allocated to the items shall be documented. NOTE 3 The system architecture design and the relationship with the system requirements should be baselined and communicated to all affected parties.	6.4.3.3.1.1	6.4.4.3 e)4	**Assess architecture candidates** e)4. Establish the architecture baseline of the selected architecture.
	6.4.3.3.1.1	6.4.4.3 f)7	**Manage the selected architecture** f)7. Provide key artifacts and information items that have been selected for baselines.
Architectural evaluation 1.1 The system architecture and the requirements for the items shall be evaluated considering the criteria listed below. a) Traceability to the system requirements. b) Consistency with the system requirements. c) Appropriateness of design standards and methods used. d) Feasibility of the software items fulfilling their allocated requirements. e) Feasibility of operation and maintenance. NOTE System architecture traceability to the system requirements should also provide for traceability to the stakeholder requirements baseline.	6.4.3.3.2.1	6.4.4.3 f)6	**Manage the selected architecture** f)6. Maintain traceability of the architecture.
Architectural evaluation 1.2 The results of the evaluations shall be documented.	6.4.3.3.2.1	6.4.4.3 f)7	**Manage the selected architecture** f)7. Provide key artifacts and information items that have been selected for baselines.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.4.4 Implementation Process[c]			
6.4.5 System Integration Process			
Integration 1.1 The software configuration items shall be integrated, with hardware configuration items, manual operations, and other systems as necessary, into the system.	6.4.5.3.1.1	6.4.8.3 b)2	**6.4.8 Integration process- Perform integration** b)2. Integrate the implemented elements.
Integration 1.2 The aggregates shall be tested, as they are developed, against their requirements.	6.4.5.3.1.1	6.4.8.3 b)3	**Perform integration** b)3. Check that the integrated software interfaces or functions run from initiation to an expected termination within an expected range of data values.
	6.4.5.3.1.1	6.4.8.3 c)2	**Manage results of integration** c)2. Maintain traceability of the integrated software system elements.
Integration 1.3 The integration and the test results shall be documented.	6.4.5.3.1.1	6.4.8.3 c)1	**Manage results of integration** c)1. Record integration results and anomalies encountered.
	6.4.5.3.1.1	6.4.8.3 c)2	**Manage results of integration** c)2. Maintain traceability of the integrated software system elements.
	6.4.5.3.1.1	6.4.8.3 c)3	**Manage results of integration** c)3. Provide key artifacts and information items that have been selected for baselines.
Test readiness 1.1 For each qualification requirement of the system, a set of tests, test cases (inputs, outputs, test criteria), and test procedures for conducting System Qualification Testing shall be developed and documented. NOTE A regression strategy, to be applied for re-testing the system when changes are made, should be developed.	6.4.5.3.2.1	6.4.9.3 a)3	**6.4.9 Verification process- Prepare for verification** a)3. Define the purpose, conditions and conformance criteria for each verification action.
Test readiness 1.2 The developer shall ensure that the integrated system is ready for System Qualification Testing.	6.4.5.3.2.1	6.4.8.3 b)3	**Perform integration** b)3. Check that the integrated software interfaces or functions run from initiation to an expected termination within an expected range of data values.
Test readiness 2.1 The integrated system shall be evaluated considering the criteria listed below. a) Test coverage of system requirements. b) Appropriateness of test methods and standards used. c) Conformance to expected results. d) Feasibility of system qualification testing. e) Feasibility of operation and maintenance.	6.4.5.3.2.2	6.4.9.3 b)2	**Perform verification** b)2. Perform the verification procedures.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.4.6 System Qualification Testing Process			
Qualification testing 1.1 System qualification testing shall be conducted in accordance with the qualification requirements specified for the system. NOTE Qualification requirements for the system should include criteria for evaluating compliance with system requirements	6.4.6.3.1.1	6.3.8.3 b)1	**6.3.8 Quality Assurance process- Perform product or service evaluations** b)1. Evaluate products and services for conformance to established criteria, contracts, standards, and regulations.
	6.4.6.3.1.1	6.4.9.3 b)2	**6.4.9 Verification process- Perform verification** b)2. Perform the verification procedures.
Qualification testing 1.2 It shall be ensured that the implementation of each system requirement is tested for compliance and that the system is ready for delivery.	6.4.6.3.1.1	6.3.8.3 b)2	**6.3.8 Quality assurance process- Perform product or service evaluations** b)2. Monitor that verification and validation of the outputs of the life cycle processes are performed to determine conformance to specified requirements.
	6.4.6.3.1.1	6.4.9.3 b)2	**Perform verification** b)2. Perform the verification procedures.
Qualification testing 1.3 The qualification testing results shall be documented.	6.4.6.3.1.1	6.4.9.3 c)2	**Manage results of verification** c)2. Record incidents and problems during verification and track their resolution.
Qualification testing 2.1 The system shall be evaluated considering the criteria listed below. a) Test coverage of system requirements; b) Conformance to expected results; c) Feasibility of operation and maintenance.	6.4.6.3.1.2	6.4.9.3 b)2	**Perform verification** b)2. Perform the verification procedures.
Qualification testing 2.2 The results of the evaluations shall be documented.	6.4.6.3.1.2	6.4.9.3 c)2	**Manage results of verification** c)2. Record incidents and problems during verification and track their resolution.
Qualification testing 3.1 The developer shall support audit(s) in accordance with subclause 7.2.7.	6.4.6.3.1.3	6.4.9.3 b)2	**Perform verification** b)2. Perform the verification procedures.
Qualification testing 3.2 The results of the audit(s) shall be documented.	6.4.6.3.1.3	6.4.9.3 c)2	**Manage results of verification** c)2. Record incidents and problems during verification and track their resolution.
Qualification testing 4 Upon successful completion of the audit(s), if conducted, the developer shall update and prepare the deliverable software product for Software Installation and Software Acceptance Support.	6.4.6.3.1.4	6.4.9.3 c)5	**Manage results of verification** c)5. Provide key artifacts and information items that have been selected for baselines.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.4.7 Software installation Process			
Software installation 1.1 The implementer shall develop a plan to install the software product in the target environment as designated in the contract. NOTE 1 The software installation strategy should be developed in agreement with the customer and the operating organization. NOTE 2 An important part of developing an installation strategy is to develop a strategy to return to the last working system version. In order to be able to re-install the last working version, a complete backup of the system should be made before starting the installation. NOTE 3 Based on the installation requirements, the installer should develop criteria for the environment where the software will be installed. NOTE 4 The installer should specify the requirements for adaptation of the system for its intended environment. NOTE 5 The installer should adapt the system to meet the requirements for operation.	6.4.7.3.1.1	6.4.10.3 a)1	**6.4.10 Transition process- Prepare for the software system transition** a)1. Define a strategy for managing software releases and other software system transitions, including the following considerations: i) establishing the type of transition and transition success criteria; ii) determining the frequency of recurring transitions, such as updates and upgrades to development, test, and operational software systems; iii) minimizing security risks, disruption, and downtime during transition; iv) archiving, destroying, or converting and validating data from previous systems to the new system; including data received through external interfaces; v) contingency planning for problem resolution, backup and return to the last working system version; vi) scheduling transitions consistent with ongoing business processing, with phased or synchronized transition of systems vii) change management for stakeholders, including interface partners, human operators, system administrators, and software system or service users;
	6.4.7.3.1.1	6.4.10.3 a)4	**Prepare for the software system transition** a)4. Prepare detailed transition information, such as plans, schedules, and procedures.
Software installation 1.2 The resources and information necessary to install the software product shall be determined and be available.	6.4.7.3.1.1	6.4.10.3 a)2	**Prepare for the software system transition** a)2. Identify and define facility, site, communications network, or target environment changes needed for software system installation or transition.
	6.4.7.3.1.1	6.4.10.3 a)3	**Prepare for the software system transition** a)3. Identify information needs and arrange for user documentation and training of operators, users, and other stakeholders necessary for system utilization and support.
Software installation 1.3 As specified in the contract, the implementer shall assist the acquirer with the set-up activities.	6.4.7.3.1.1	6.4.10.3 b)4	**Perform the transition** b)4. Provide user documentation and training for the operators, users, and other stakeholders necessary for product utilization and support.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Software installation 1.4 Where the installed software product is replacing an existing system, the implementer shall support any parallel running activities that are required by contract.	6.4.7.3.1.1	6.4.10.3 b)3	**Perform the transition** b)3. Install the product in its physical or virtual operational location and interface to its environment.
Software installation 1.5 The installation plan shall be documented.	6.4.7.3.1.1	6.4.10.3 c)4	**Manage results of transition** c)4. Provide key artifacts and information items that have been selected for baselines.
Software installation 2.1 The developer shall install the software product in accordance with the installation plan.	6.4.7.3.1.2	6.4.10.3 b)3	**Perform the transition** b)3. Install the product in its physical or virtual operational location and interface to its environment.
Software installation 2.2 It shall be ensured that the software code and databases initialize, execute, and terminate as specified in the contract. NOTE The installer should assure that the software product is ready for use in its intended environment.	6.4.7.3.1.2	6.4.10.3 b)3	**Perform the transition** b)3. Install the product in its physical or virtual operational location and interface to its environment.
	6.4.7.3.1.2	6.4.10.3 b)5	**Perform the transition** b)5. Perform activation and check_out, including the following as agreed:i) Demonstrate proper installation of the software system.ii) Demonstrate the installed or transitioned product is capable of delivering its required functions.iii) Demonstrate the functions provided by the system are sustainable by the enabling systems. iv) Review the software system for operational readiness.v) Commission the software system for operations.
Software installation 2.3 The installation events and results shall be documented.	6.4.7.3.1.2	6.4.10.3 c)1	**Manage results of transition** c)1. Record transition results and anomalies encountered.
	6.4.7.3.1.2	6.4.10.3 c)2	**Manage results of transition** c)2. Record transition incidents and problems and track their resolution.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.4.8 Software Acceptance Support Process			
Software acceptance support 1.1 The developer shall support the acquirer's acceptance review and testing of the software product.	6.4.8.3.1.1	6.4.10.3 b)5	**6.4.10 Transition process- Perform the transition** b)5 Perform activation and check_out,
	6.4.8.3.1.1	6.4.11.3 b)2	**6.4.11 Validation process- Perform validation** b)2. Perform the validation procedures in the defined environment.
Software acceptance support 1.2 Acceptance review and testing shall consider the results of the Software Review (subclause 7.2.6), Software Audit (subclause 7.2.7), Software Qualification Testing, and System Qualification Testing (if performed) processes. NOTE This includes documentation and communication of problems detected during acceptance testing to those responsible for resolution.	6.4.8.3.1.1	6.4.10.3 b)5	**Perform the transition** b)5 Perform activation and check_out,
	6.4.8.3.1.1	6.4.10.3 c)	**Manage results of transition** c)3. Maintain traceability of the transitioned software system elements.
Software acceptance support 1.2 Acceptance review and testing shall consider the results of the Software Review (subclause 7.2.6), Software Audit (subclause 7.2.7), Software Qualification Testing, and System Qualification Testing (if performed) processes.	6.4.8.3.1.1	6.4.11.3 c)1	**Manage results of validation** c)1. Review validation results and anomalies encountered and identify follow-up actions.
Software acceptance support 1.3 The results of the acceptance review and testing shall be documented.	6.4.8.3.1.1	6.4.10.3 c)4	**Manage results of transition** c)4. Provide key artifacts and information items that have been selected for baselines.
	6.4.8.3.1.1	6.4.11.3 c)2	**Manage results of validation** c)2. Record incidents and problems during validation and track their resolution.
Software acceptance support 2. The developer shall complete and deliver the software product as specified in the contract. NOTE The contract may require the developer to put the product into operation in the customer's environment.	6.4.8.3.1.2	6.4.10.3 b)2	**Perform the transition** b)2. Deliver the software system or element for installation at the correct location and time.
	6.4.8.3.1.2	6.4.12.3 b)1	**6.4.12 Operation process- Perform operation** b)1. Use the software system in its intended operational environment.
Software acceptance support 3. The developer shall provide initial and continuing training and support to the acquirer as specified in the contract. NOTE Initial support includes identifying and communicating problems detected during acceptance to those responsible for resolution.	6.4.8.3.1.3	6.4.10.3 b)4	**Perform the transition** b)4. Provide user documentation and training for the operators, users, and other stakeholders necessary for product utilization and support.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.4.9 Software Operation Process			
Preparation for operation 1.1 The operator shall develop a plan and set operational standards for performing the activities and tasks of this process.	6.4.9.3.1.1	6.4.12.3 a)1	**6.4.12 Operation process- Prepare for operation** a)1. Define an operation strategy, including the following considerations: i) The expected or agreed capacity, availability, response time, and security of services as they are introduced, routinely operated and withdrawn from service; ii) The human resources strategy, depending on the need to define training and qualification requirements, train or obtain personnel to control and monitor software system operations, administer system access, and support customer service requests and user assistance; iii) The release criteria and schedules of the software system to permit modifications that sustain existing or enhanced services; iv) The approach to implement the operational modes in the Operational Concept, including normal operations and preparations for, and testing of, envisioned types of contingency operations; v) Measures for operation that will provide insight into performance levels; vi) The operational and occupational safety strategy for operators and others using or in contact with the software system during operation, accounting for safety regulations; and vii) The environmental protection and sustainability strategy for operating the software system.
Preparation for operation 1.2-1 The plan shall be documented [and executed].	6.4.9.3.1.1	6.4.12.3 c)4	**Manage results of operation** c)4. Provide key artifacts and information items that have been selected for baselines.
Preparation for operation 1.2-2 The plan shall be [documented and] executed.	6.4.9.3.1.1	6.4.12.3 b)	**Perform operation** b)

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
	6.4.9.3.1.1	6.4.12.3 b)3	**Perform operation** b)3. Monitor software system operation, including consideration of the following: i) Managing adherence to the operation strategy (e.g. , operational procedures); ii) Recording and reporting significant events, such as possible breaches of software and data confidentiality and integrity; iii) Operating the software system in a safe manner and compliant with legislated guidelines e.g. , those concerning occupational safety and environmental protection; and iv) Recording when software system or service performance is not within acceptable parameters.
Preparation for operation 2.1 The operator shall establish procedures for receiving, recording, resolving, tracking problems, and providing feedback.	6.4.9.3.1.2	6.4.12.3 a)1	**Prepare for operation** a)1. Define an operation strategy,
	6.4.9.3.1.2	6.3.8.3 a)1	**6.3.8 Quality Assurance process- Prepare for quality assurance** a)1.1 Define a Quality Assurance strategy 1.2 The strategy is consistent with the organizational Quality Management policies and objectives and includes: v) Required verification, validation, monitoring, measurement, review, inspection, audit, and test activities specific to the products or services; and vi) Problem resolution and process and product improvement activities.
Preparation for operation 2.2 Whenever problems are encountered, they shall be recorded and entered into the Software Problem Resolution Process (subclause 7.2.8).	6.4.9.3.1.2	6.4.12.3 c)2	**Manage results of operation** c)2. Record operational incidents and problems and track their resolution.
Preparation for operation 3. The operator shall establish procedures for testing the software product in its operation environment, for entering problem reports and modification requests to the Software Maintenance Process (subclause 6.4.10), and for releasing the software product for operational use.	6.4.9.3.1.3	6.4.12.3 a)1	**Prepare for operation** a)1. Define an operation strategy,

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Operation activation and check-out 1. For each release of the software product, the operator shall perform operational testing, and, on satisfying the specified criteria, release the software product for operational use.	6.4.9.3.2.1	6.4.11.3 b)2	**6.4.11 Validation process- Perform validation** b)2. Perform the validation procedures in the defined environment.
Operation activation and checkout 2. The operator shall ensure that the software code and databases initialize, execute, and terminate as described in the plan.	6.4.9.3.2.2	6.4.11.3 b)2	**Perform validation** b)2. Perform the validation procedures in the defined environment.
Operation activation and checkout 3. The operator shall activate the system in its intended operational situation to deliver instances of service or continuous service according to its intended purpose.	6.4.9.3.2.3	6.4.12.3 b)1	**Perform operation** b)1. Use the software system in its intended operational environment.
Operational use 1. The system shall be operated in its intended environment according to the user documentation.	6.4.9.3.3.1	6.4.12.3 b)1	**Perform operation** b)1. Use the software system in its intended operational environment.
NOTE 1 Operating in the intended environment includes developing criteria for operational use so that compliance with agreed requirements can be demonstrated, and performing operational testing of each release of the product, assessing satisfaction against specified criteria.	6.4.9.3.3.1	6.4.12.3 c)3	**Manage results of operation** c)3. Maintain traceability of the operational services and configuration items.
	6.4.9.3.3.1	6.4.12.3 d)3	**Support the customer** d)3. Determine the degree to which the delivered software system or services satisfy the needs of the customers and users.
NOTE 1. NOTE 2 Risks to product operation are identified and monitored. NOTE 3 The operator monitors operational service on a regular basis, where appropriate, against defined criteria.	6.4.9.3.3.1	6.4.12.3 b)3	**Perform operation** b)3. Monitor software system operation, including consideration of the following: i) Managing adherence to the operation strategy (e.g. , operational procedures); ii) Recording and reporting significant events, such as possible breaches of software and data confidentiality and integrity; iii) Operating the software system in a safe manner and compliant with legislated guidelines e.g. , those concerning occupational safety and environmental protection; and iv) Recording when software system or service performance is not within acceptable parameters.
NOTE 1. NOTE 2	6.4.9.3.3.1	6.4.12.3 b)4	**Perform operation** b)4. Consistent with the operational strategy, develop and, where feasible, automate operational procedures to minimize the risk of operational anomalies.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
NOTE 1. NOTE 3	6.4.9.3.3.1	6.4.12.3 b)5	**Perform operation** b)5. Consistent with the operational strategy, analyze measurements to confirm that: i) Service performance is within acceptable parameters or agreed service levels for the agreed workload; ii) System and service availability and response times are acceptable; iii) Cost of operation is consistent with objectives and constraints; and iv) Potential improvements are identified and prioritized.
NOTE 3	6.4.9.3.3.1	6.4.12.3 b)6	**Perform operation** b)6. Perform contingency operations, if necessary.
Customer support 1.1 The operator shall provide assistance and consultation to the users as requested.	6.4.9.3.4.1	6.4.12.3 d)1	**Support the customer** d)1. Provide assistance and consultation to the customers and users to resolve complaints, incidents, problems, and service requests.
NOTE Assistance and consultation includes the providing of training, documentation, and other support services supporting effective use of the product.	6.4.9.3.4.1	6.4.12.3 c)4	**Manage results of operation** c)4. Provide key artifacts and information items that have been selected for baselines.
Customer support 1.2 These requests and subsequent actions shall be recorded and monitored. NOTE Assistance and consultation includes the providing of training, documentation, and other support services supporting effective use of the product.	6.4.9.3.4.1	6.4.12.3 c)4	**Manage results of operation** c)4. Provide key artifacts and information items that have been selected for baselines.
Customer support 1.2 These requests and subsequent actions shall be recorded and monitored.	6.4.9.3.4.1	6.4.12.3 d)2	**Support the customer** d)2. Record and monitor requests and subsequent actions for support.
Customer support 2.1 The operator shall forward user requests, as necessary, to the Software Maintenance Process (subclause 6.4.10) for resolution.	6.4.9.3.4.2	6.4.12.3 c)1	**Manage results of operation** c)1. Record results of operation and anomalies encountered.
	6.4.9.3.4.2	6.4.12.3 d)2	**Support the customer** d)2. Record and monitor requests and subsequent actions for support.
	6.4.9.3.4.2	6.4.13.3 b)1	**Perform maintenance** b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Customer support 2.2 These requests shall be addressed and the actions that are planned and taken shall be reported to the originators of the requests.	6.4.9.3.4.2	6.4.12.3 c)2	**Manage results of operation** c)2. Record operational incidents and problems and track their resolution.
	6.4.9.3.4.2	6.4.12.3 d)2	**Support the customer** d)2. Record and monitor requests and subsequent actions for support.
Customer support 2.3 All resolutions shall be monitored to conclusion.	6.4.9.3.4.2	6.4.12.3 c)2	**Manage results of operation** c)2. Record operational incidents and problems and track their resolution.
	6.4.9.3.4.2	6.4.12.3 d)2	**Support the customer** d)2. Record and monitor requests and subsequent actions for support.
Operation problem resolution 1. The operator shall forward identified problems to the Software Problem Resolution Process for resolution.	6.4.9.3.5.1	6.4.12.3 c)1	**Manage results of operation** c)1. Record results of operation and anomalies encountered.
	6.4.9.3.5.1	6.4.12.3 c)2	**Manage results of operation** c)2. Record operational incidents and problems and track their resolution.
	6.4.9.3.5.1	6.4.12.3 d)1	**Support the customer** d)1. Provide assistance and consultation to the customers and users to resolve complaints, incidents, problems, and service requests.
Operation problem resolution 2.1 If a reported problem has a temporary work-around before a permanent solution can be released, the originator of the problem report shall be given the option to use it.	6.4.9.3.5.2	6.4.12.3 c)2	**Manage results of operation** c)2. Record operational incidents and problems and track their resolution.
	6.4.9.3.5.2	6.4.12.3 d)1	**Support the customer** d)1. Provide assistance and consultation to the customers and users to resolve complaints, incidents, problems, and service requests.
	6.4.9.3.5.2	6.4.13.3 b)3	**6.4.13 Maintenance process- Perform maintenance** b)3. Upon encountering unexpected faults that cause a software system failure, restore the system to operational status
Operation problem resolution 2.2 Permanent corrections, releases that include previously omitted functions or features, and system improvements shall be applied to the operational software product using the Software Maintenance Process (subclause 6.4.10).	6.4.9.3.5.2	6.4.12.3 d)1	**Support the customer** d)1. Provide assistance and consultation to the customers and users to resolve complaints, incidents, problems, and service requests.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.

Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
6.4.10 Software Maintenance Process			
Process implementation 1.1-1&2 The maintainer shall develop, document, [and execute] plans and procedures for conducting the activities and tasks of the Software Maintenance Process.	6.4.10.3.1.1	6.4.13.3 a)1	**6.4.13 Maintenance process- Prepare for maintenance** a)1. Define a maintenance strategy, including consideration of the following: i) Establishing priorities, typical schedules, and procedures for performing, verifying, distributing, and installing software maintenance changes in conformance with operational availability requirements; ii) Establishing techniques and methods for becoming aware of the need for corrective, adaptive, and perfective maintenance; iii) Periodic assessment of the design characteristics in case of evolution of the software system and of its architecture; iv) Forecasting potential obsolescence of components and technologies using information on technical changes in related systems; v) Establishing priorities and resources to obtain access to the correct versions of the product and product information needed for performing maintenance (e.g. , scheduled or phased installation, maintenance patches or software upgrades); vi) Measures for maintenance that will provide insight into performance levels, effectiveness, and efficiency, including access to historical fault and failure; vii) Agreed rights to data and the impact on data in the system during problem resolution and maintenance activity; viii) Approach to assure that counterfeit or unauthorized system elements are not introduced into the system; ix) Impact of the maintenance change on other software systems elements versus the risk of leaving a reported software anomaly in place; and x) The skill and personnel levels required to effect system or software repairs or replacements, fixes, patches, updates, and upgrades, considering legal and regulatory requirements regarding health and safety, security, and the environment.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Process implementation 1.1-2 The maintainer shall [develop], document, [and execute] plans and procedures for conducting the activities and tasks of the Software Maintenance Process.	6.4.10.3.1.1	6.4.13.3 d)4	**Manage results of maintenance and logistics** d)4. Provide key artifacts and information items that have been selected for baselines.
Process implementation 1.1-3 The maintainer shall [develop, document, and] execute plans and procedures for conducting the activities and tasks of the Software Maintenance Process.	6.4.10.3.1.1	6.4.13.3b)	**Perform maintenance** b)
Process implementation 2.1 The maintainer shall establish procedures for receiving, recording, and tracking problem reports and modification requests from the users and providing feedback to the users.	6.4.10.3.1.2	6.4.13.3 a)1	**Prepare for maintenance** a)1. Define a maintenance strategy,
Process implementation 2.2 Whenever problems are encountered, they shall be recorded and entered into the Software Problem Resolution Process (subclause 7.2.8).	6.4.10.3.1.2	6.4.13.3 d)1	**Manage results of maintenance and logistics** d)1. Record incidents and problems, including their resolutions, and significant maintenance and logistics results.
Process implementation 3. The maintainer shall implement (or establish organizational interface with) the Configuration Management Process (subclause 7.2.2) for managing modifications to the existing system.	6.4.10.3.1.3	6.4.13.3 a)1	**Prepare for maintenance** a)1. Define a maintenance strategy,
Problem and modification analysis 1. The maintainer shall analyze the problem report or modification request for its impact on the organization, the existing system, and the interfacing systems for the following: a) Type; for example, corrective, improvement, preventive, or adaptive to new environment; b) Scope; for example, size of modification, cost involved, time to modify; c) Criticality; for example, impact on performance, safety, or security.	6.4.10.3.2.1	6.4.1.3 b)1	**6.4.1 Business or Mission Analysis process- Define the problem or opportunity space** b)1. Analyze customer complaints, problems and opportunities in the context of relevant trade-space factors.
	6.4.10.3.2.1	6.4.13.3 b)1	**Perform maintenance** b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.
	6.4.10.3.2.1	6.4.13.3 b)5	**Perform maintenance** b)5. Perform preventive maintenance by replacing, patching, augmenting, or upgrading software system elements, to improve the performance of a software system that is projected to reach unacceptable service levels.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
	6.4.10.3.2.1	6.4.13.3 b)6	**Perform maintenance** b)6. Identify when adaptive or perfective maintenance is required.
Problem and modification analysis 2. The maintainer shall replicate or verify the problem.	6.4.10.3.2.2	6.4.13.3 b)1	**Perform maintenance** b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.
Problem and modification analysis 3. Based upon the analysis, the maintainer shall develop options for implementing the modification.	6.4.10.3.2.3	6.4.13.3 b)1	**Perform maintenance** b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.
Problem and modification analysis 4. The maintainer shall document the problem/modification request, the analysis results, and implementation options.	6.4.10.3.2.4	6.4.13.3 b)1	**Perform maintenance** b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.
Problem and modification analysis 5. The maintainer shall obtain approval for the selected modification option as specified in the contract.	6.4.10.3.2.5	6.4.13.3 b)1	**Perform maintenance** b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.
Modification implementation 1.1 The maintainer shall conduct analysis and determine which documentation, software units, and versions thereof need to be modified.	6.4.10.3.3.1	6.4.13.3 b)1	**Perform maintenance** b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.
Modification implementation 1.2 These shall be documented.	6.4.10.3.3.1	6.4.13.3 d)4	**Manage results of maintenance and logistics** d)4. Provide key artifacts and information items that have been selected for baselines.
Modification implementation 2.1 The maintainer shall enter the Technical Processes (subclause 6.4) to implement the modifications.	6.4.10.3.3.2	6.4.13.3 b)4	**Perform maintenance** b)4. Implement the procedures for correction of flaws (defects) and errors, or for replacement or upgrade of system elements.
	6.4.10.3.3.2	6.4.13.3 b)5	**Perform maintenance** b)5. Perform preventive maintenance by replacing, patching, augmenting, or upgrading software system elements, to improve the performance of a software system that is projected to reach unacceptable service levels, e.g., lack of capacity due to increases in demand or stored data, or to avoid unacceptable operating conditions, e.g., running with outdated security software.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

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Table 4 *(continued)*

Activities & tasks (ISO/IEC 12207:2008)	Sub clause	Sub clause	Activities & tasks (ISO/IEC/IEEE 12207:2017)
Modification implementation 2.2 The requirements of the Technical Processes shall be supplemented as follows: a) Test and evaluation criteria for testing and evaluating the modified and the un-modified parts (software units, components, and configuration items) of the system shall be defined and documented. b) The complete and correct implementation of the new and modified requirements shall be ensured. It also shall be ensured that the original, unmodified requirements were not affected.	6.4.10.3.3.2	6.4.13.3 b)1	**Perform maintenance** b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.
	6.4.10.3.3.2	6.4.13.3 b)2	**Perform maintenance** b)2. Analyze the impact of maintenance changes on data structures, data, and related software functions, user documentation, and interfaces.
	6.4.10.3.3.2	6.4.13.3 d)3	**Manage results of maintenance and logistics** d)3. Maintain traceability of the system elements being maintained.
	6.4.10.3.3.2	6.4.13.3 d)4	**Manage results of maintenance and logistics** d)4. Provide key artifacts and information items that have been selected for baselines.
Modification implementation 2.3 The test results shall be documented.	6.4.10.3.3.2	6.4.13.3 d)4	**Manage results of maintenance and logistics** d)4. Provide key artifacts and information items that have been selected for baselines.
Maintenance review/acceptance 1. The maintainer shall conduct review(s) with the organization authorizing the modification to determine the integrity of the modified system.	6.4.10.3.4.1	6.4.13.3 d)3	**Manage results of maintenance and logistics** d)3. Maintain traceability of the system elements being maintained.
	6.4.10.3.4.1	6.4.13.3 d)5	**Manage results of maintenance and logistics** d)5. Monitor and measure customer satisfaction with system and maintenance support.
Maintenance review/acceptance 2. The maintainer shall obtain approval for the satisfactory completion of the modification as specified in the contract.	6.4.10.3.4.2	6.4.13.3 d)5	**Manage results of maintenance and logistics** d)5. Monitor and measure customer satisfaction with system and maintenance support.
Migration 1. If a system or software product (including data) is migrated from an old to a new operational environment, it shall be ensured that any software product or data produced or modified during migration is in accordance with this International Standard.	6.4.10.3.5.1	6.4.13.3 a)1	**Prepare for maintenance** a)1. Define a maintenance strategy,
	6.4.10.3.5.1	6.4.13.3 b)1	**Perform maintenance** b)1. Review stakeholder requirements, complaints, events, incident and problem reports to identify corrective, adaptive, perfective and preventive maintenance needs.

[a] Infrastructure Management Process 6.2.2.3.1.1 **Process implementation** 1.1 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 that includes the phrase "Identify and plan for the necessary enabling systems or services needed to support".

[b] 6.2.2.3.2.2 **Establishment of the infrastructure** 2 task in ISO/IEC 12207:2008 contributes to the task in each technical process in ISO/IEC/IEEE 12207:2017, 6.4 and 6.3.7 a)7 that includes the phrase "Obtain or acquire access to the enabling systems or services to be used".

[c] 6.4.4 Implementation Process in ISO/IEC 12207:2008 describes neither activities nor tasks and has the NOTE explaining that the Software Implementation Process (7.1.1) is a conforming instance of the Implementation Process.