INTERNATIONAL STANDARD

ISO/IEC 15288

First edition
2002-11-01

Systems engineering — System life cycle processes

Ingénierie systèmes — Processus de cycle de vie des systèmes

Reference number
ISO/IEC 15288:2002(E)

© ISO/IEC 2002

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: ISO/IEC/IEEE 15288-2002

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO/IEC 2002

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
© ISO/IEC 2002 – All rights reserved
Full document details: ISO/IEC/IEEE 15288-2002

Contents

Page

Foreword v

Introduction vi

1 Scope 1
1.1 Purpose 1
1.2 Field Of Application 1
1.3 Limitations 1

2 Conformance 2
2.1 Intended Usage 2
2.2 Full Conformance 2
2.3 Tailored Conformance 2

3 Normative reference 2

4 Terms and definitions 2

5 System Life Cycle Processes 5
5.1 Introduction 5
5.2 Agreement Processes 6
5.2.1 Introduction 6
5.2.2 Acquisition Process 6
5.2.3 Supply Process 7
5.3 Enterprise Processes 8
5.3.1 Introduction 8
5.3.2 Enterprise Environment Management Process 9
5.3.3 Investment Management Process 10
5.3.4 System Life Cycle Processes Management Process 11
5.3.5 Resource Management Process 12
5.3.6 Quality Management Process 13
5.4 Project Processes 13
5.4.1 Introduction 13
5.4.2 Project Planning Process 14
5.4.3 Project Assessment Process 15
5.4.4 Project Control Process 17
5.4.5 Decision-making Process 18
5.4.6 Risk Management Process 19
5.4.7 Configuration Management Process 20
5.4.8 Information Management Process 21
5.5 Technical Processes 22
5.5.1 Introduction 22
5.5.2 Stakeholder Requirements Definition Process 23
5.5.3 Requirements Analysis Process 25
5.5.4 Architectural Design Process 27
5.5.5 Implementation Process 29
5.5.6 Integration Process 30
5.5.7 Verification Process 31
5.5.8 Transition Process 32
5.5.9 Validation Process 33
5.5.10 Operation Process 35
5.5.11 Maintenance Process 36
5.5.12 Disposal Process 37

6 System Life Cycle Stages 39
6.1 Introduction 39

Documents
Document Sharing Hub

© ISO/IEC 2002 – All rights reserved
Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: ISO/IEC/IEEE 15288-2002

6.2 Life Cycle Models ... 39
6.3 Life Cycle Stages ... 39

Annex A (normative) Tailoring Process ... 40
A.1 Introduction ... 40
A.2 Tailoring Process ... 40
A.2.1 Purpose of the Tailoring Process ... 40
A.2.2 Tailoring Process Outcomes ... 40
A.2.3 Tailoring Process Activities ... 40

Annex B (informative) Life Cycle Stages ... 42
B.1 Introduction ... 42
B.2 Concept Stage ... 42
B.2.1 Overview ... 42
B.2.2 Purpose of the Concept Stage ... 43
B.2.3 Concept Stage Outcomes ... 43
B.3 Development Stage ... 43
B.3.1 Overview ... 43
B.3.2 Purpose of the Development Stage ... 44
B.3.3 Development Stage Outcomes ... 44
B.4 Production Stage ... 45
B.4.1 Overview ... 45
B.4.2 Purpose of the Production Stage ... 45
B.4.3 Production Stage Outcomes ... 45
B.5 Utilization Stage ... 45
B.5.1 Overview ... 45
B.5.2 Purpose of the Utilization Stage ... 46
B.5.3 Utilization Stage Outcomes ... 46
B.6 Support Stage ... 46
B.6.1 Overview ... 46
B.6.2 Purpose of the Support Stage ... 47
B.6.3 Support Stage Outcomes ... 47
B.7 Retirement Stage ... 47
B.7.1 Overview ... 47
B.7.2 Purpose of the Retirement Stage ... 48
B.7.3 Retirement Stage Outcomes ... 48

Annex C (informative) Relationship between ISO/IEC 15288 and ISO/IEC 12207:1995/AMD.1:2002 ... 49
C.1 Diagrammatic representation ... 49
C.2 Tabular representation ... 50

Annex D (informative) Concepts ... 52
D.1 System Concepts ... 52
D.1.1 Introduction ... 52
D.1.2 Systems ... 52
D.1.3 System Structure ... 53
D.1.4 Hierarchy in Systems and Projects ... 54
D.1.5 Enabling Systems ... 55
D.2 Life Cycle Concepts ... 56
D.2.1 System Life Cycle Model ... 56
D.2.2 System Life Cycle Stages ... 56
D.2.3 Stages in a system-of-interest and its enabling systems ... 57
D.3 Process Concepts ... 58
D.3.1 Life Cycle Processes ... 58
D.3.2 Responsibilities and Agreements within and between Organizations ... 59
D.3.3 Process application ... 60

Bibliography ... 62

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
© ISO/IEC 2002 – All rights reserved
Full document details: ISO/IEC/IEEE 15288-2002

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 15288 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and system engineering*.

Annex A forms a normative part of this International Standard. Annexes B, C and D are for information only.

Documents
Document Sharing Hub

© ISO/IEC 2002 – All rights reserved
Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: ISO/IEC/IEEE 15288-2002

Introduction

The complexity of man-made systems has increased to an unprecedented level. This has led to new opportunities, but also to increased challenges for the organizations that create and utilize systems. These challenges exist throughout the life cycle of a system and at all levels of structural detail. They arise from several sources:

— there are inherent differences among the hardware, software and human elements from which systems are constructed.

— almost every present-day system contains, and/or is modelled and supported by computer-based technology.

— there is a lack of harmonization and integration of the involved disciplines, including science, engineering, management and finance.

There is therefore a need for a common framework to improve communication and co-operation among the parties that create, utilize and manage modern systems in order that they can work in an integrated, coherent fashion.

This International Standard provides a common process framework covering the life cycle of man-made systems. This life cycle spans the conception of ideas through to the retirement of a system. It provides the processes for acquiring and supplying systems. In addition, this framework provides for the assessment and improvement of the life cycle processes.

The processes in this International Standard form a comprehensive set from which an organization can construct 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.

This International Standard can be used in one or more of the following modes:

— By an organization — to help establish an environment of desired processes. These processes can be supported by an infrastructure of methods, procedures, techniques, tools and trained personnel. The organization may then employ this environment to perform and manage its projects and progress systems through their life cycle stages. In this mode this International Standard is used to assess conformance of a declared, established environment to its provisions.

— By a project — to help select, structure and employ the elements of an established environment to provide products and services. In this mode this International Standard is used in the assessment of conformance of the project to the declared and established environment.

— By an acquirer and a supplier — to help develop an agreement concerning processes and activities. Via the agreement, the processes and activities in this International Standard are selected, negotiated, agreed to and performed. In this mode this International Standard is used for guidance in developing the agreement.

This International Standard contains requirements in three Clauses: Clause 5, that defines the requirements for the system life cycle processes, Clause 6, that defines the requirements for stages in a life cycle, and Annex A, that provides requirements for tailoring of this International Standard. Three informative annexes are also contained in this International Standard: Annex B, that provides an example of the use of stages in life cycles, Annex C, that shows its relationship with ISO/IEC 12207:1995/AMD.1:2002 Information technology — Software life cycle processes, and Annex D, that describes the key concepts that it uses. Readers new to this International Standard are advised to consult Annex D to gain an appreciation of these concepts.

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
© ISO/IEC 2002 — All rights reserved
Full document details: ISO/IEC/IEEE 15288-2002

Systems engineering — System life cycle processes

1 Scope

1.1 Purpose

This International Standard establishes a common framework for describing the life cycle of systems created by humans. It defines a set of processes and associated terminology. These processes can be applied at any level in the hierarchy of a system's structure. Selected sets of these processes can be applied throughout the life cycle for managing and performing the stages of a system's life cycle. This is accomplished through the involvement of all interested parties with the ultimate goal of achieving customer satisfaction.

This International Standard also provides processes that support the definition, control and improvement of the life cycle processes used within an organization or a project. Organizations and projects can use these life cycle processes when acquiring and supplying systems.

This International Standard concerns those systems that are man-made and may be configured with one or more of the following: hardware, software, humans, processes (e.g. review process), procedures (e.g. operator instructions), facilities and naturally occurring entities (e.g. water, organisms, minerals).

1.2 Field Of Application

This International Standard applies to the full life cycle of systems, including conception, development, production, utilization, support and retirement of systems, and to the acquisition and supply of systems, whether performed internally or externally to an organization. The life cycle processes of this International Standard can be applied concurrently, iteratively and recursively to a system and its elements.

There is a wide variety of systems in terms of their purpose, domain of application, complexity, size, novelty, adaptability, quantities, locations, life spans and evolution. This International Standard describes the processes that comprise the life cycle of any man-made system. It therefore applies to one-of-a-kind systems, mass-produced systems and customized, adaptable systems.

This International Standard applies to organizations in their role as both acquirers and suppliers. It can be used by a single party in a self-imposed mode or in a multi-party situation. Parties can be from the same organization or from different organizations and the situation can range from an informal agreement to a formal contract.

The processes in this International Standard can be used as a basis for establishing business environments, e.g. methods, techniques, tools and trained personnel. It provides a process reference model characterized in terms of the process purpose and the process outcomes that result from their successful implementation. This International Standard can therefore be used as a reference model to support process assessment as specified in ISO/IEC TR 15504-2.

1.3 Limitations

This International Standard does not detail the life cycle processes in terms of methods or procedures required to meet the requirements and outcomes of a process.

This International Standard does not detail documentation in terms of name, format, explicit content and recording media.

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: ISO/IEC/IEEE 15288-2002

This International Standard is not intended to be in conflict with any organization's policies, procedures, and standards or with any national laws and regulations. Any such conflict should be resolved before using this International Standard.

2 Conformance

2.1 Intended Usage

The requirements in this International Standard are contained in Clause 5, Clause 6 and Annex A. This International Standard provides requirements for a number of processes suitable for usage during the life cycle of a system. It is recognized that particular projects or organizations may not need to use all of the processes provided by this International Standard. Therefore, implementation of this International Standard typically involves selecting a set of processes suitable to the organization or project. There are two ways that an implementation can be claimed to conform with the provisions of this International Standard. Any claim of conformance is cited in only one of the two forms below.

2.2 Full Conformance

A claim of full conformance declares the set of processes for which conformance is claimed. Full conformance is achieved by demonstrating that all of the requirements of the declared set of processes have been satisfied using the outcomes as evidence.

2.3 Tailored Conformance

When this standard is used as a basis for establishing a set of processes that do not qualify for full conformance, the clauses of this International Standard are selected or modified in accordance with the tailoring process prescribed in Annex A. The tailored text, for which tailored conformance is claimed, is declared. Tailored conformance is achieved by demonstrating that requirements for the processes, as tailored, have been satisfied using the outcomes as evidence.

NOTE When this standard is used to help develop an agreement between an acquirer and a supplier, clauses of this International Standard can be selected for incorporation in the agreement with or without modification. In this case, it is more appropriate for the acquirer and supplier to claim compliance with the agreement than conformance with this International Standard.

3 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 12207:1995/AMD.1:2002 *Information technology — Software life cycle processes — Amendment 1*

4 Terms and definitions

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

4.1
acquirer
the stakeholder that acquires or procures a product or service from a supplier

Documents
Document Sharing Hub

 Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
© ISO/IEC 2002 – All rights reserved
Full document details: ISO/IEC/IEEE 15288-2002

NOTE Other terms commonly used for an acquirer are buyer, customer, purchaser. The acquirer may at the same time be the owner, user or operating organization.

4.2
activity
a set of actions that consume time and resources and whose performance is necessary to achieve, or contribute to, the realization of one or more outcomes

4.3
agreement
the mutual acknowledgement of terms and conditions under which a working relationship is conducted

4.4
baseline
a specification or product that has been formally reviewed and agreed upon, that thereafter serves as the basis for further development, and that can be changed only through formal change control procedures

4.5
enabling system
a system that complements a system-of-interest during its life cycle stages but does not necessarily contribute directly to its function during operation

NOTE 1 For example, when a system-of-interest enters the production stage, an enabling production system is required.

NOTE 2 Each enabling system has a life cycle of its own. This International Standard is applicable to each enabling system when, in its own right, it is treated as a system-of-interest.

4.6
enterprise
that part of an organization with responsibility to acquire and to supply products and/or services according to agreements

NOTE An organization may be involved in several enterprises and an enterprise may involve one or more organizations.

4.7
facility
the physical means or equipment for facilitating the performance of an action, e.g. buildings, instruments, tools

4.8
life cycle model
a framework of processes and activities concerned with the life cycle, which also acts as a common reference for communication and understanding

4.9
operator
an individual who, or an organization that, contributes to the functionality of a system and draws on knowledge, skills and procedures to contribute the function

NOTE 1 The role of operator and the role of user may be vested, simultaneously or sequentially, in the same individual or organization.

NOTE 2 An individual operator combined with knowledge, skills and procedures may be considered as an element of the system.

4.10
organization
a group of people and facilities with an arrangement of responsibilities, authorities and relationships

[ISO 9000:2000]

Documents
Document Sharing Hub

© ISO/IEC 2002 – All rights reserved
Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: ISO/IEC/IEEE 15288-2002

4.11
process
set of interrelated or interacting activities which transforms inputs into outputs

[ISO 9000:2000]

4.12
project
an endeavour with defined start and finish dates undertaken to create a product or service in accordance with specified resources and requirements

NOTE 1 Adapted from ISO 9000: 2000 and the PMBOK Guide(2000).

NOTE 2 A project may be viewed as a unique process comprising co-ordinated and controlled activities and may be composed of activities from the Project Processes and Technical Processes defined in this International Standard..

4.13
resource
an asset that is utilized or consumed during the execution of a process

NOTE 1 Resources may include diverse entities such as personnel, facilities, capital equipment, tools, and utilities such as power, water, fuel and communication infrastructures.

NOTE 2 Resources may be reusable, renewable or consumable.

4.14
stage
a period within the life cycle of a system that relates to the state of the system description or the system itself

NOTE 1 Stages relate to major progress and achievement milestones of the system through its life cycle.

NOTE 2 Stages may be overlapping.

4.15
stakeholder
a party having a right, share or claim in a system or in its possession of characteristics that meet that party's needs and expectations

4.16
supplier
an organization or an individual that enters into an agreement with the acquirer for the supply of a product or service

4.17
system
a combination of interacting elements organized to achieve one or more stated purposes

NOTE 1 A system may be considered as a product or as the services it provides.

NOTE 2 In practice, the interpretation of its meaning is frequently clarified by the use of an associative noun, e.g. aircraft system. Alternatively the word system may be substituted simply by a context dependent synonym, e.g. aircraft, though this may then obscure a system principles perspective.

4.18
system element
a member of a set of elements that constitutes a system

NOTE A system element is a discrete part of a system that can be implemented to fulfil specified requirements

Documents
Document Sharing Hub

 Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
© ISO/IEC 2002 – All rights reserved
Full document details: ISO/IEC/IEEE 15288-2002

4.19
system-of-interest
the system whose life cycle is under consideration in the context of this International Standard

4.20
system life cycle
the evolution with time of a system-of-interest from conception through to retirement

4.21
trade-off
decision-making actions that select from various requirements and alternative solutions on the basis of net benefit to the stakeholders

4.22
user
individual who or group that benefits from a system during its utilization

NOTE The role of user and the role of operator may be vested, simultaneously or sequentially, in the same individual or organization.

4.23
validation
confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled

[ISO 9000: 2000]

NOTE Validation in a system life cycle context is the set of activities ensuring and gaining confidence that a system is able to accomplish its intended use, goals and objectives.

4.24
verification
confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

[ISO 9000: 2000]

NOTE Verification in a system life cycle context is a set of activities that compares a product of the system life cycle against the required characteristics for that product. This may include, but is not limited to, specified requirements, design description and the system itself.

5 System Life Cycle Processes

5.1 Introduction

This clause describes the requirements for the life cycle processes. It defines their purposes and outcomes, and the activities required to achieve them. An organization conducts the life cycle processes selectively to fulfil the purpose and outcomes of life cycle stages.

The life cycle processes are described in four process groups as follows:

Agreement processes;

Enterprise processes;

Project processes;

Technical processes.

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: ISO/IEC/IEEE 15288-2002

NOTE Each life cycle process may be invoked, as required, at any time throughout the life cycle and there is no definitive order in their use. Any life cycle process may be executed concurrently with any other life cycle process. Any life cycle process may apply at any level in the hierarchical representation of a system's structure. Therefore, in the following description of the system life cycle processes, the order that the processes are presented and the process groups used do not imply any precedence in, or sequence of application of, processes during the life cycle of a system. The process groups, however, do reflect underlying concepts used in this International Standard and these are described in Annex D.

5.2 Agreement Processes

5.2.1 Introduction

This subclause specifies the requirements for the establishment of agreements with organizational entities external and internal to the organization.

The Agreement Processes consist of the following:

a) Acquisition Process – used by organizations for acquiring products or services;

b) Supply Process – used by organizations for supplying products or services.

These processes define the activities necessary to establish an agreement between two organizations. If the Acquisition Process is invoked, it provides the means for conducting business with a supplier of products that are supplied for use as an operational system, of services in support of an operational system, or of elements of a system being developed by a project. If the Supply Process is invoked, it provides the means for conducting a project in which the result is a product or service that is delivered to the acquirer.

5.2.2 Acquisition Process

5.2.2.1 Purpose of the Acquisition Process

The purpose of the Acquisition Process is to obtain a product or service in accordance with the acquirer's requirements.

5.2.2.2 Acquisition Process Outcomes

As a result of the successful implementation of the Acquisition Process:

a) A strategy for the acquisition is established.

b) A supplier is selected.

c) Communication with the supplier is maintained.

d) A justification for the selection is declared.

e) An agreement to acquire a product or service according to defined acceptance criteria is established.

f) A product or service complying with the agreement is accepted.

g) Payment or other consideration is rendered.

5.2.2.3 Acquisition Process Activities

The acquirer shall implement the following activities in accordance with applicable organizational policies and procedures with respect to the Acquisition Process.

a) Establish a plan for how the acquisition will be conducted.

Documents
Document Sharing Hub

 Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
© ISO/IEC 2002 – All rights reserved
Full document details: ISO/IEC/IEEE 15288-2002

NOTE This plan includes reference to the life cycle model, a schedule of milestones and selection criteria if the supplier is external to the acquiring organization.

b) Prepare a request for the supply of a product or service.

NOTE Provide a definition of requirements to one or more suppliers. If a supplier is external to organization, then the request can include the business practices with which a supplier is expected to comply and the criteria for selecting a supplier.

c) 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.

d) Select a supplier.

NOTE To obtain competitive solicitations, proposals to supply are evaluated and compared against the selection criteria. Where proposals include offerings that are not covered by the criteria, then the proposals are compared with each other to determine their order of suitability and thus supplier preference. The justification for rating each proposal is declared and suppliers may be informed why they were or were not selected.

e) Negotiate an agreement with the supplier.

NOTE This agreement may range in formality from a written contract to a verbal understanding. Appropriate to the level of formality, the agreement establishes requirements, development and delivery milestones, verification, validation and acceptance conditions, exception handling procedures, change control procedures and payment schedules, so that both parties of the agreement understand the basis for executing the agreement. Rights and restrictions associated with technical data and intellectual property are noted in the agreement. The negotiation is complete when the acquirer accepts the terms of an agreement offered by the supplier.

f) Assess the execution of the agreement.

NOTE This includes confirmation that both parties are meeting their responsibilities according to the agreement. Projected cost, performance and schedule risks are monitored, and the impact of undesirable outcomes on the organization is evaluated regularly. Variations to the terms of the agreement are negotiated as necessary.

g) Confirm that the delivered product or service complies with the agreement.

NOTE Exceptions that arise during the conduct of the agreement or with the delivered product or service are resolved according to the procedures established in the agreement.

h) Make payment or provide other agreed consideration to the supplier for the product or service rendered.

NOTE When the supplied product or service has satisfied the conditions of the agreement, the acquirer concludes the agreement by rendering payment or other agreed consideration.

5.2.3 Supply Process

5.2.3.1 Purpose of the Supply Process

The purpose of the Supply Process is to provide an acquirer with a product or service that meets agreed requirements.

5.2.3.2 Supply Process Outcomes

As a result of the successful implementation of the Supply Process:

a) An acquirer for a product or service is identified.

b) A response to the acquirer's request is made.

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: ISO/IEC/IEEE 15288-2002

c) An agreement to supply a product or service according to defined acceptance criteria is established.

d) Communication with the acquirer is maintained.

e) A product or service conforming to the agreement is supplied according to agreed delivery procedures and conditions.

f) Responsibility for the acquired product or service, as directed by the agreement, is transferred.

g) Payment or other agreed consideration is received.

5.2.3.3 Supply Process Activities

The supplier shall implement the following activities in accordance with applicable organizational policies and procedures with respect to the Supply Process.

a) Determine the existence and identity of an acquirer who has, or who represents a party or parties having, a need for a product or service.

NOTE For a product or service developed for consumers, an agent, e.g. a marketing function within the supplier organization, may represent the acquirer.

b) Evaluate a request for the supply of a product or service to determine feasibility and how to respond.

c) Prepare a response that satisfies the solicitation.

d) Negotiate an agreement with the acquirer.

NOTE This agreement may range in formality from a written contract to a verbal understanding. Negotiate the differences, where applicable, between the acquisition request or tasking statement and the capability expressed in the response. The Supplier confirms that the requirements, delivery milestones and acceptance conditions are achievable, that exception handling and change control procedures and payment schedules are acceptable, and that they establish a basis for executing the agreement without unnecessary risks.

e) Execute the agreement according to the Supplier's established project plans and in accordance with the agreement.

NOTE A supplier may adopt, or agree to use, acquirer processes.

f) Assess the execution of the agreement.

NOTE Projected cost, performance and schedule risks are monitored and communicated to the acquirer as appropriate. The impact of undesirable outcomes on the organization is evaluated.

g) Deliver the product or service in accordance with the agreement criteria.

h) Accept and acknowledge payment or other agreed consideration.

i) Transfer the responsibility for the product or service to the acquirer, or other party, as directed by the agreement.

5.3 Enterprise Processes

5.3.1 Introduction

The Enterprise Processes manage the organization's capability to acquire and supply products or services through the initiation, support and control of projects. They provide resources and infrastructure necessary to support projects and ensure the satisfaction of organizational objectives and established agreements. They are not

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
© ISO/IEC 2002 – All rights reserved
Full document details: ISO/IEC/IEEE 15288-2002

intended to be a comprehensive set of business processes that enable strategic management of the organization's business.

The Enterprise Processes consist of the following:

a) Enterprise Environment Management Process;

b) Investment Management Process;

c) System Life Cycle Processes Management Process;

d) Resource Management Process;

e) Quality Management Process.

5.3.2 Enterprise Environment Management Process

5.3.2.1 Purpose of the Enterprise Environment Management Process

The purpose of the Enterprise Environment Management Process is to define and maintain the policies and procedures needed for the organization's business with respect to the scope of this International Standard.

5.3.2.2 Enterprise Environment Management Process Outcomes

As a result of the successful implementation of the Enterprise Environment Management Process:

a) Policies and procedures for the strategic management of system life cycles are provided.

b) Accountability and authority for system life cycle management are defined.

c) A policy for the improvement of system life cycle processes is provided.

5.3.2.3 Enterprise Environment Management Process Activities

The organization shall implement the following activities in accordance with applicable organization policies and procedures with respect to the Enterprise Environment Management Process.

a) Establish plans for each business area.

NOTE Identify the short-term objectives that contribute to achieving strategic objectives and the projects that will be undertaken to accomplish the strategic objectives.

b) Prepare system life cycle policies and procedures that implement the requirements of this International Standard and are consistent with enterprise strategic and business area plans.

NOTE The actual range and detail of the system life cycle implementation within a project will be dependent upon the complexity of the work, the methods used, and the skills and training of personnel involved in performing the work. A project tailors policies and procedures according to its requirements and needs. Relevant policies and procedures include risk management, quality management and resource management.

c) Define, integrate, and communicate the roles, responsibilities and authorities to facilitate implementation of system life cycle processes and the strategic management of system life cycles.

d) Define business criteria that control progression through the system life cycle.

NOTE Establish the decision-making criteria regarding entering and exiting each life cycle stage, and for other key milestones. Express these in terms of business achievement.

e) Conduct periodic reviews of the system life cycle model used by a project.

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: ISO/IEC/IEEE 15288-2002

NOTE Confirm the continuing suitability, adequacy and effectiveness of the life cycle models used by each project and make improvements as appropriate. This includes the stages, processes and achievement criteria that control progression through the life cycle.

f) Communicate to projects the policies and procedures adopted by the enterprise in order to implement the requirements of this standard.

5.3.3 Investment Management Process

5.3.3.1 Purpose of the Investment Management Process

The purpose of the Investment Management Process is to initiate and sustain sufficient and suitable projects in order to meet the objectives of the organization.

This process commits the investment of adequate organization funding and resources, and sanctions the authorities needed to establish selected projects. It performs continued qualification of projects to confirm they justify, or can be redirected to justify, continued investment.

5.3.3.2 Investment Management Process Outcomes

As a result of the successful implementation of the Investment Management Process:

a) Investment opportunities or necessities are qualified and selected.

b) Resources and budgets are identified and allocated.

c) Project management accountability and authorities are defined.

d) Projects meeting agreement, stakeholder and organization requirements are sustained.

e) Projects not meeting agreement, stakeholder or organization requirements are redirected or terminated.

5.3.3.3 Investment Management Process Activities

The organization shall implement the following activities in accordance with applicable organization policies and procedures with respect to the Investment Management Process.

a) Establish new business opportunities, ventures or undertakings consistent with the business strategy and action plans of the organization.

NOTE Prioritize the projects to be started and establish thresholds to determine which projects will be executed.

b) Define projects, accountabilities and authorities.

c) Identify the expected outcomes of the projects.

d) Allocate resources for the achievement of project objectives.

e) Identify any multi-project interfaces that must be managed or supported by the project. This includes the use of enabling systems used by more than one project and the use of common system elements by more than one project.

f) Specify the project reporting requirements and review milestones that will govern the execution of the project.

g) Authorize the project to commence execution of approved project plans, including the technical plans.

h) Evaluate ongoing projects to confirm that:

Documents
Document Sharing Hub

 Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
© ISO/IEC 2002 All rights reserved
Full document details: ISO/IEC/IEEE 15288-2002

1) projects are making progress towards achieving established goals;

2) projects are complying with project directives;

3) projects are being conducted according to system life cycle plans and procedures;

4) projects remain viable, as indicated by, for example, continuing need for the service, practicable product implementation, acceptable investment benefits.

i) Act to continue or redirect projects that are satisfactorily progressing or can be expected to progress satisfactorily by appropriate redirection.

j) Act to cancel or suspend projects whose disadvantages or risks to the organization outweigh the benefits of continued investments, where agreements permit this.

5.3.4 System Life Cycle Processes Management Process

5.3.4.1 System Life Cycle Processes Management Process Purpose

The purpose of the System Life Cycle Processes Management Process is to assure that effective system life cycle processes are available for use by the organization.

This process provides system life cycle processes that are consistent with the organization's goals and policies, that are defined, adapted and maintained in a consistent way in order to meet the nature of individual projects, and that are capable of being applied using effective, proven methods and tools.

5.3.4.2 System Life Cycle Processes Management Process Outcomes

As a result of the successful implementation of the System Life Cycle Processes Management Process:

a) System life cycle processes for use by the organization are defined.

b) Policy to apply system life cycle processes is defined.

c) Policy to adapt system life cycle processes to meet the needs of individual projects is defined.

d) Measures are defined to evaluate the application of the system life cycle processes.

e) Improvements to the definition and application of system life cycle processes are undertaken.

5.3.4.3 System Life Cycle Processes Management Process Activities

The organization shall implement the following activities in accordance with applicable organization policies and procedures with respect to the System Life Cycle Processes Management Process.

a) Establish standard sets of system life cycle processes for applicable system life cycle stages.

b) Establish acceptable tailoring and application policies and procedures, with approval requirements.

c) Identify methods and tools that support system life cycle process execution.

d) Establish measures wherever possible that determine performance of the implemented standard processes.

e) Monitor process execution, store and analyze process measures, and identify trends with respect to enterprise criteria.

f) Identify opportunities for improvement of standard system life cycle process implementation.

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: ISO/IEC/IEEE 15288-2002

g) Improve processes, methods and tools as determined.

5.3.5 Resource Management Process

5.3.5.1 Purpose of the Resource Management Process

The purpose of the Resource Management Process is to provide resources to projects.

This process provides resources, materials and services to projects to support organization and project objectives throughout the life cycle. This includes a supply of educated, skilled and experienced personnel qualified to perform life cycle processes. This process assures that there is effective co-ordination and sharing of resources, information and technologies.

5.3.5.2 Resource Management Process Outcomes

As a result of the successful implementation of the Resource Management Process:

a) Necessary resources, materials and services are provided to projects.

b) Skills of personnel are maintained or enhanced.

c) Conflicts in multi-project resource demands are resolved.

5.3.5.3 Resource Management Process Activities

The organization shall implement the following activities in accordance with applicable organization policies and procedures with respect to the Resource Management Process:

a) Determine and provide the resource infrastructure support needed to implement the requirements of this International Standard within the organization and provide project support.

NOTE Project plans and future business needs contribute to the understanding of the resource infrastructure that is required. Physical factors, such as facilities, and human factors, such as ambient noise level, of the work environment are defined.

b) Obtain resources other than personnel that are needed to implement and support projects.

c) Maintain and manage the pool of personnel necessary to staff ongoing projects.

NOTE This includes the recruitment, training and retention of personnel with experience levels and skills necessary to properly staff projects; managing the competency of personnel to perform life cycle processes; provision of training and education to improve their skill sets and support their career paths; staff assessment and review, e.g. their proficiency, motivation, ability to work in a team environment, as well as the need to be retrained, reassigned or reallocated.

d) Motivate staff, e.g. through career development and reward mechanisms.

e) Control multi-project management interfaces to resolve schedule conflicts:

   1) of capacity in organizational infrastructure and supporting services and resources among ongoing projects;

   2) from project personnel being over-committed.

Documents
Document Sharing Hub

 Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply. © ISO/IEC 2002 – All rights reserved

Full document details: ISO/IEC/IEEE 15288-2002

5.3.6 Quality Management Process

5.3.6.1 Quality Management Process Purpose

The purpose of the Quality Management Process is to assure that products, services and implementations of life cycle processes meet enterprise quality goals and achieve customer satisfaction.

5.3.6.2 Quality Management Process Outcomes

As a result of the successful implementation of the Quality Management process:

a) Organization quality management policies and procedures are defined.

b) Organization quality goals and objectives are defined.

c) Accountability and authority for quality management are defined.

d) The status of customer satisfaction is monitored.

e) Appropriate action is taken when quality goals are not achieved.

5.3.6.3 Quality Management Process Activities

The organization shall implement the following activities in accordance with applicable organization policies and procedures with respect to the Quality Management Process.

a) Establish quality management policies, standards and procedures.

NOTE A process model for quality management system requirements can be found in ISO 9001:2000 with further guidance in ISO 9004:2000.

b) Establish organization quality management goals and objectives based on business strategy for customer satisfaction.

c) Define responsibilities and authority for implementation of quality management.

d) Assess customer satisfaction and report.

NOTE The implementation of this International Standard provides the organization with an approach to achieving customer satisfaction.

e) Conduct periodic reviews of project quality plans.

NOTE Assure that quality objectives based on the stakeholder requirements are established for each project.

f) Monitor the status of quality improvements on products and services.

5.4 Project Processes

5.4.1 Introduction

The Project Processes are used to establish and evolve project plans, to assess actual achievement and progress against the plans and to control execution of the project through to fulfilment. Individual Project Processes may be invoked at any time in the life cycle and at any level in a hierarchy of projects, as required by project plans or unforeseen events. The Project Processes are applied with a level of rigour and formality that depends on the risk and complexity of the project.

The Project Processes consist of the following processes:

Documents
Document Sharing Hub

© ISO/IEC 2002 – All rights reserved
Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.

Full document details: ISO/IEC/IEEE 15288-2002

a) Project Planning Process;

b) Project Assessment Process;

c) Project Control Process;

d) Decision-making Process;

e) Risk Management Process;

f) Configuration Management Process;

g) Information Management Process.

NOTE Planning, assessment and control are key to all management practices. They are evident in the management of any undertaking, ranging from a complete organization down to a single life cycle process and its activities. In this International Standard, the project has been chosen as the context for describing processes concerned with planning, assessment and control. The principles related to these processes can be applied in any area of an organization's management.

5.4.2 Project Planning Process

5.4.2.1 Purpose of the Project Planning Process

The purpose of the Project Planning Process is to produce and communicate effective and workable project plans.

This process determines the scope of the project management and technical activities, identifies process outputs, project tasks and deliverables, establishes schedules for project task conduct, including achievement criteria, and required resources to accomplish project tasks.

5.4.2.2 Project Planning Process Outcomes

As a result of the successful implementation of the Project Planning Process:

a) Project plans are available.

b) Roles, responsibilities and authorities are defined.

c) Resources and services necessary to achieve the project objectives are formally requested.

d) Project performance measures are defined.

e) Project staff are directed in accordance with the project plans.

5.4.2.3 Project Planning Process Activities

The project shall implement the following activities in accordance with applicable organization policies and procedures with respect to the Planning Process.

a) Identify the project objectives and constraints.

NOTE Objectives and constraints include performance and other quality aspects, cost, time and stakeholder satisfaction. Each objective is identified with a level of detail that permits selection, tailoring and implementation of the appropriate processes and activities.

b) Define the project scope as established in the agreement.

NOTE The project includes all the relevant activities required to satisfy business decision criteria and complete the project successfully. A project can have responsibility for one or more stages in the complete system life cycle. Planning includes appropriate actions for maintaining project plans, performing assessments and controlling the project.

Documents
Document Sharing Hub

 Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
© ISO/IEC 2002 All rights reserved
Full document details: ISO/IEC/IEEE 15288-2002

c) Establish a work breakdown structure based on the evolving system architecture.

NOTE Each element of the system architecture, and appropriate processes and activities are described with a level of detail that is consistent with identified risks. Related tasks in the work breakdown structure are grouped into project tasks according to organizational responsibilities. Project tasks identify every work item being developed or produced and its associated tasks.

d) Define and maintain a project schedule based on project objectives and work estimates.

NOTE This includes definition of the duration, relationship, dependencies and sequence of project activities, achievement milestones, resources employed and the reviews necessary to achieve timely completion of the project.

e) Define project achievement criteria for the life cycle stage decision gates, delivery dates and major dependencies on external inputs or outputs.

NOTE The time intervals between internal project reviews are defined in accordance with organizational policy on issues such as business and system criticality, schedule and technical risks.

f) Define the project costs and plan a budget.

NOTE Costs are based on, e.g. the project schedule, labour estimates, infrastructure costs, procurement items, acquired service and enabling system estimates, and budget reserves for risk management.

g) Establish the structure of authorities and responsibilities for project work.

NOTE This includes defining the project organization, staff acquisitions, the development of staff skills and the methods of team working. They include the effective use of human resources and draw on organizational functions that contribute to all stages of the system life cycle. The structure of authority is designated, including, as appropriate, the legally responsible roles and individuals, e.g. design authorization, safety authorization, award of certification or accreditation.

h) Define the infrastructure and services required by the project.

NOTE This includes defining the capacity needed, its availability and its allocation to project tasks. Also included are facilities, tools, communications and information technology assets. The requirements for enabling systems for each life cycle stage within the scope of the project are also specified.

i) Plan the acquisition of materials, goods and enabling system services supplied from outside the project.

NOTE This includes, as necessary, plans for solicitation, supplier selection, acceptance, contract administration and contract closure. The agreement processes are used for the planned acquisitions.

j) Generate and communicate a plan for technical management of the project, including reviews.

k) Define the project measures to be generated and the associated data to be collected, validated and analyzed.

NOTE This includes identifying project data sources, recipients and timing.

l) Generate a project quality plan.

NOTE This includes defining and documenting project quality objectives that assures that the enterprise quality goals and objectives and enterprise quality management policies and procedures are attained. Plan in accordance with ISO 9001:2000 or other quality standards.

5.4.3 Project Assessment Process

5.4.3.1 Purpose of the Project Assessment Process

The purpose of the Project Assessment Process is to determine the status of the project.

Documents
Document Sharing Hub

Authorized licensed use limited to: Tsinghua University. Downloaded on February 24,2026 at 18:20:42 UTC from IEEE Xplore. Restrictions apply.
Full document details: ISO/IEC/IEEE 15288-2002