

Australian/New Zealand Standard™

**Systems and software engineering—
System life cycle processes**



AS/NZS ISO/IEC/IEEE 15288:2015

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee IT-015, Software and Systems Engineering. It was approved on behalf of the Council of Standards Australia on 4 June 2015 and on behalf of the Council of Standards New Zealand on 4 June 2015.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT-015, Software and Systems Engineering to supersede AS/NZS ISO/IEC 15288:2013.

The objective of this Standard is to create a common process framework to facilitate communication and cooperation among the parties that create, utilize and manage modern systems in order that they can work in an integrated, coherent fashion.

This Standard is identical with, and has been reproduced from ISO/IEC/IEEE 15288:2015, *Systems and software engineering—System life cycle processes*. Changes in this revision of ISO/IEC/IEEE 15288 were developed in conjunction with a corresponding revision of ISO/IEC/IEEE 12207, *Systems and software engineering—Software life cycle processes*.

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The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annexes to which they apply. A ‘normative’ annex is an integral part of a Standard, whereas an ‘informative’ annex is only for information and guidance.

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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 architectural detail. This International Standard provides a common process framework for describing the life cycle of systems created by humans, adopting a Systems Engineering approach. Systems Engineering is an interdisciplinary approach and means to enable the realization of successful systems. It focuses on defining stakeholder needs and required functionality early in the development cycle, documenting requirements, then proceeding with design synthesis and system validation while considering the complete problem. It integrates all the disciplines and specialty groups into a team effort forming a structured development process that proceeds from concept to production to operation. It considers both the business and the technical needs of all stakeholders with the goal of providing a quality product that meets the needs of users and other applicable stakeholders. This life cycle spans the conception of ideas through to the retirement of a system. It provides the processes for acquiring and supplying systems. It helps to improve communication and cooperation among the parties that create, utilize and manage modern systems in order that they can work in an integrated, coherent fashion. 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 fulfill 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.
- By process assessors — to serve as a process reference model for use in the performance of process assessments that may be used to support organizational process improvement.

AUSTRALIAN/NEW ZEALAND STANDARD

Systems and software engineering—System life cycle processes**1 Overview****1.1 Scope**

This International Standard establishes a common framework of process descriptions for describing the life cycle of systems created by humans. It defines a set of processes and associated terminology from an engineering viewpoint. 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 stakeholders, with the ultimate goal of achieving customer satisfaction.

This International Standard also provides processes that support the definition, control and improvement of the system life cycle processes used within an organization or a project. Organizations and projects can use these 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 system elements: hardware, software, data, humans, processes (e.g., processes for providing service to users), procedures (e.g., operator instructions), facilities, materials and naturally occurring entities.

When a system element is software, the software life cycle processes in ISO/IEC/IEEE 12207:2015 may be used to implement that system element. The two standards are harmonized for concurrent use on a single project or in a single organization.

1.2 Purpose

The purpose of this International Standard is to provide a defined set of processes to facilitate communication among acquirers, suppliers and other stakeholders in the life cycle of a system.

This International Standard applies to organizations in their roles as both acquirers and suppliers. It can be used by a single organization 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, procedures, techniques, tools and trained personnel. Annex A provides normative direction regarding the tailoring of these system life cycle processes.

1.3 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 incrementally to 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 man-made systems. It therefore applies to one-of-a-kind systems, mass-produced systems and customized, adaptable systems. It also applies to a complete stand-alone system and to systems that are embedded and integrated into larger more complex and complete systems.

This International Standard provides a process reference model characterized in terms of the process purpose and the process outcomes that result from the successful execution of the activity tasks. Annex B lists examples of artifacts and information items that may be associated with various processes. This International Standard can therefore be used as a reference model to support process assessment as specified in ISO/IEC