Information technology — Software life cycle processes

Technologies de l’information — Processus du cycle de vie des logiciels
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Foreword

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

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. 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.

International Standard ISO/IEC 12207 was prepared by Joint Technical Committee ISO/IEC JTC 1, Information technology, Subcommittee SC 7, Software engineering.

Annex A forms an integral part of this International Standard. Annexes B and C are for information only.
Introduction

Software is an integral part of information technology and conventional systems, such as transportation, military, medical care, and finance. There is a proliferation of standards, procedures, methods, tools, and environments for developing and managing software. This proliferation has created difficulties in software management and engineering, especially in integrating products and services. The software discipline needs to migrate from this proliferation to a common framework that can be used by software practitioners to "speak the same language" to create and manage software. This International Standard provides such a common framework.

The framework covers the life cycle of software from conceptualization of ideas through retirement and consists of processes for acquiring and supplying software products and services. In addition, the framework provides for controlling and improving these processes.

The processes in this International Standard form a comprehensive set. An organization, depending on its purpose, can select an appropriate subset to fulfill that purpose. This International Standard is, therefore, designed to be tailored for an individual organization, project, or application. It is also designed to be used when software is a stand-alone entity, or an embedded or integral part of the total system.
Information technology – Software life cycle processes

1 Scope

1.1 Purpose

This International Standard establishes a common framework for software life cycle processes, with well-defined terminology, that can be referenced by the software industry. It contains processes, activities, and tasks that are to be applied during the acquisition of a system that contains software, a stand-alone software product, and software service and during the supply, development, operation, and maintenance of software products. Software includes the software portion of firmware.

This International Standard also provides a process that can be employed for defining, controlling, and improving software life cycle processes.

1.2 Field of application

This International Standard applies to the acquisition of systems and software products and services, to the supply, development, operation, and maintenance of software products, and to the software portion of firmware, whether performed internally or externally to an organization. Those aspects of system definition needed to provide the context for software products and services are included.

NOTE – The processes used during the software life cycle need to be compatible with the processes used during the system life cycle.

This International Standard is intended for use in a two-party situation and may be equally applied where the two parties are from the same organization. The situation may range from an informal agreement up to a legally binding contract. This International Standard may be used by a single party as self-imposed tasks.

This International Standard is not intended for off-the-shelf software products unless incorporated into a deliverable product.

This International Standard is written for acquirers of systems and software products and services and for suppliers, developers, operators, maintainers, managers, quality assurance managers, and users of software products.

1.3 Tailoring of this International Standard

This International Standard contains a set of processes, activities, and tasks designed to be tailored in respect of software projects. The tailoring process is deletion of non-applicable processes, activities, and tasks.

NOTE – Addition of unique or special processes, activities, and tasks may be provided in the contract.
1.4 Compliance

Compliance with this International Standard is defined as the performance of all the processes, activities, and tasks selected from this International Standard in the Tailoring Process (annex A) for the software project. The performance of a process or an activity is complete when all its required tasks are performed in accordance with the pre-established criteria and the requirements specified in the contract as applicable.

Any organization (for example, national, industrial association, company) imposing this International Standard, as a condition of trade, is responsible for specifying and making public the minimum set of required processes, activities, and tasks, which constitute suppliers' compliance with this International Standard.

1.5 Limitations

This International Standard describes the architecture of the software life cycle processes but does not specify the details of how to implement or perform the activities and tasks included in the processes.

This International Standard is not intended to prescribe the name, format, or explicit content of the documentation to be produced. This International Standard may require development of documents of similar class or type; various plans are an example. This International Standard, however, does not imply that such documents be developed or packaged separately or combined in some fashion. These decisions are left to the user of this International Standard.

This International Standard does not prescribe a specific life cycle model or software development method. The parties of this International Standard are responsible for selecting a life cycle model for the software project and mapping the processes, activities, and tasks in this International Standard onto that model. The parties are also responsible for selecting and applying the software development methods and for performing the activities and tasks suitable for the software project.

This International Standard is not intended to be in conflict with any organization's policies, standards or procedures that are already in place. However, any conflict needs to be resolved and any overriding conditions and situations need to be cited in writing as exceptions to the application of this International Standard.

Throughout this International Standard, "shall" is used to express a provision that is binding between two or more parties, "will" to express a declaration of purpose or intent by one party, "should" to express a recommendation among other possibilities, and "may" to indicate a course of action permissible within the limits of this International Standard.

In this International Standard, there are a number of lists for tasks; none of these is presumed to be exhaustive – they are intended as examples.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.
