

ICS 35.080

CCS L 77



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 8566-2022

Replacing GB/T 8566-2007

**Systems and software engineering - Software life cycle
processes**

Issued on: October 12, 2022

Implemented on: May 1, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules for Standardization Documents" drafting.

This document and GB/T 22032-2021 "System and Software Engineering System Life Cycle Process" together constitute the software and system engineering

Basic standards in the field.

This document replaces GB/T 8566-2007 "Information Technology Software Life Cycle Process". Compared with GB/T 8566-2007, except knot

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

--- Terms and definitions have been adjusted and supplemented (see Chapter 3, Chapter 3 of the 2007 edition);

--- The software life cycle process model has made major adjustments and changes (see Appendix NA for details).

This document is equivalent to ISO /IEC /IEEE 12207:2017 "System and Software Engineering Software Life Cycle Process".

The following minimal editorial changes have been made to this document.

---Delete Appendix I (informative) and the process mapping of ISO /IEC /IEEE12207.2008, the.2007 version replaced by this document adopts

ISO /IEC 12207.1995, this document adopts ISO /IEC /IEEE12207.2017, ISO /IEC /IEEE12207.2008

It is an intermediate version, meaningless to national standards, and does not involve changes in technical content;

--- Added Appendix NA (informative).

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

The complexity of software systems has increased to unprecedented levels. This opens up new opportunities for organizations that create and use systems, but

It also brings more challenges, these challenges exist in the whole life cycle of the software system and all the details on the architecture level. this document

A common process framework is provided to describe the life cycle of artificially created systems using software engineering methods. software engineering is successful

An interdisciplinary approach and approach to the development of software systems that focuses on defining the needs of stakeholders and the functionality required prior to the development cycle,

It focuses on establishing requirements documents, it focuses on performing design integration and system verification, and it also considers global issues. software engineering combines all

Procedures and professional groups are integrated into a team working to form a structured development process from concept to production, to operation, to maintenance, while

Also consider the business and technical needs of all stakeholders, with the aim of providing high-quality products that meet the requirements of users and other stakeholders mark. This life cycle spans the entire process from conception to system decommissioning, providing a process for the acquisition and provisioning of the system, while

It also helps to improve communication and cooperation among all parties who create, use, and manage modern software systems so that they can be developed in an integrated, high-level manner.

Cohesive patterns work. The framework also provides for the assessment and improvement of life cycle processes.

The processes in this document form a comprehensive set from which organizations can build software life cycle models appropriate for their products and services.

Depending on the purpose of the organization, an appropriate subset can be selected and applied to achieve that purpose.

This document can be used in one or more of the following modes.

a) Organizational Use - Helps establish the context of the required process. These processes can be defined by methods, procedures, techniques, tools and trained

People make up the infrastructure to support it. Organizations can then use these environments to execute and manage their own projects, and through their

life cycle phases to develop a software system. In this mode, this document is used to assess whether the declared, established environment is

whether it complies with its provisions.

b) Project Use - Helps select, structure and use elements of an established environment to deliver products and services. in this mode

, this document is used to assess whether the project conforms to the declared and established environment.

c) Use by acquirers and suppliers-help develop agreements on processes and activities. By this agreement, the processes and activities in this document

Selected, negotiated, agreed to and executed. In this mode, this document is used to guide the development of the protocol.

d) Process evaluators use --- as a process reference model for the performance of process evaluation to support the organization's process improvement.

Considering the difference between software and system scope, the "project-specific package management process" in the software life cycle process model in this document is the same as

The "programme management process" in the GB/T 22302-2021 system life cycle process model refers to the same process, but there are difference.

Systems and Software Engineering Software Life Cycle Process

1.1 Overview

This document uses well-defined terms to establish a common framework for software life cycle processes that can be referenced by the software industry. Should

A framework contains processes, activities and tasks that can be used during the acquisition, supply, development, operation, maintenance or disposal of software systems, products and services.

These life cycle processes are completed through the participation of all parties related to the system, with the ultimate goal of achieving customer satisfaction.

This document applies to software systems, products and services, and the acquisition, supply, development, operation, maintenance and

Disposition (whether performed internally or externally to the organization). Software includes the software portion of firmware and also includes the environment that provides software products and services

The required system defines those sections.

This document also provides procedures that can be used within an organization or a project to define, control and improve software life cycle processes.

The processes, activities and tasks in this document can also be applied during the acquisition of a system including software, where either used alone,

It can also be used in combination with GB/T 22032-2021.

GB/T 22032-2021 mainly focuses on man-made systems that use little or no software, and the use of GB/T 22032-2021

In contrast to environments, this document is primarily concerned with a continuum of software-manufactured systems. In reality, it is rare to meet a person without software

Complex systems, and all software systems need to be run by components (hardware) of the physical system, or only as a part of the software system in focus

part, or only as an enabling system or infrastructure. Therefore, whether to apply this document to the software life cycle, or to

GB/T 22032-2021 applies to the software life cycle, the choice of which depends on the system concerned. The procedures in the two standards have similar

have the same process purpose and process output, but differ in the activities and tasks in performing software engineering or systems engineering, respectively.

1.2 Purpose

The goal of this document is to provide a defined set of processes during the system life cycle to facilitate

communication between.

This document is applicable to buyers, suppliers, developers, integrators, operators,