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Software and systems engineering - Reference model for product line engineering and management

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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 of Standardization Documents"

drafted.

This document is equivalent to ISO /IEC 26550.2015 "Software and Systems Engineering Product Line Engineering and Management Reference Model".

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

---According to the latest version of international standards and the selection of national standards, this document within the scope of the full text refers to the standard cited in the original text.

The standard number has been partially revised, and the corresponding national standard number has been added. The original reference to ISO /IEC 12207.2008 has been updated as

ISO /IEC /IEEE12207.2017, the national standard has been identically adopted as GB/T 8566-2022, the original quoted international standard

ISO /IEC /IEEE15288.2015 national standard has been adopted as GB/T 22032-2021, originally quoted as international standard

ISO /IEC 15940.2006 has been updated to ISO /IEC 15940.2013, and the national standard is equivalent to GB/T 30972-

2014, these modifications do not affect the technical content of this document;

---Chapter 3 Terms and Definitions The original text is missing 3.22, this document changes the item numbers of the original 3.23~3.29 to 3.22~3.28.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

to global attention. SSPL Engineering and Management creates, leverages and manages a common platform for lower cost, faster time to market and more

Good quality develops a range of products (eg software products, system architectures).

This document provides a reference model that includes an abstraction of key processes and relationships between processes in software and systems product line engineering and management.

Elephant representation. The difference between product line engineering and single system engineering is that it has two key characteristics, namely requirements area engineering and application engineering.

Lifecycle processes, and the need for a clear definition of variability. The goal of domain engineering is to define and implement the common use of member products in a product line

For domain assets, the goal of application engineering is to develop applications that utilize domain assets including generic and variable assets. Domain Engineering Clear

Define product line variability that reflects the specific needs of different markets and market segments. Mutability can be embedded into domain assets. In application engineering,

Domain assets are configured according to a defined variability model.

SSPL engineering and management reference model can be used for subsequent standardization work, created for software and systems product line engineering. high abstraction

standards (such as product management, scoping, requirements engineering, design, implementation, verification and validation, organizational and technical management), moderately abstract standards

(such as configuration management, variability modeling, risk management, quality assurance, measurement, evaluation, and asset storage), and detailed abstract standards (such as construction,

configuration mechanism and asset mining).

Software and Systems Engineering

Product Line Engineering and Management Reference Model

1 Scope

This document is the basis for a family of standards for engineering and management of software and systems product lines.

The scope of this document includes.

---Provide specific terms and definitions for software and systems product line engineering and management;

--- Define a reference model for the overall structure and process of software and systems product line engineering and management, and describe the product line reference model

how the components are combined;

--- Define the relationship between the product line reference model components.

This document does not describe any methods and tools related to the engineering and management of software and systems product lines. These methods and tools are in the product line

It is described in the Engineering and Management series of standards (ISO /IEC 26551~ISO /IEC 26556). This document does not address ISO /IEC /IEEE

24765.2010, which provides a common vocabulary for all systems and software engineering work.

In this document, "product" refers to a software system, or a "system-level product" composed of hardware and software systems. This document only deals with hardware systems

The product line engineering and management of the product line may be useful, but it is not specific to the hardware product line. Although hardware usually forms a product together with software

product, but this document is not intended to assist in the engineering, production, storage, logistics and management of the hardware that constitutes the product, such processes being other

Disciplines (eg mechanics, electronics).

Note. Appendix A provides additional information about the product.

This document includes product line reference models, terms and definitions, and is defined in GB/T 8566-2022/ISO /IEC /IEEE12207.2017,

GB/T 22032-2021/ISO /IEC /IEEE15288.2015, GB/T 30972-2014/ISO /IEC 15940.2013, ISO /

The structure of IEC 14102.2008 serves as a baseline.

2 Normative references

There are no normative references in this document.

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

Architectural structures and rules (such as general rules and constraints) that govern the products of specific members within a product line.

NOTE. The application architecture describes the high-level design of a specific member product within the product line. Application architecture reuse (possibly modified) area for member products in the product line

Common parts of the schema, and bind the variable parts of the domain schema. In most cases, the application architecture of member products requires the development of application-specific

transsexual.

3.2

application asset applicationasset

The output of a specific application engineering process such as application implementation. Such assets can be used in other life cycle processes of application engineering and can be

Adjusted to domain assets based on product management decisions.