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Software and systems engineering — Tools and methods for product line product management

Ingénierie du logiciel et des systèmes — Outils et méthodes pour la gestion des gammes de produits

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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Contents

Page

Foreword ..... **v**

Introduction ..... **vi**

1 Scope **1**

2 Normative references **1**

3 Terms and Definitions **1**

4 Abbreviated terms **2**

5 Reference model for product line product management **2**
5.1 Overview 2
5.2 Product management enablement 3
5.3 Product management operation 3
5.4 Product management support 4

6 Product management enablement **6**
6.1 General 6
6.2 Product management planning 6
6.2.1 Principal constituents 6
6.2.2 Establish product management goals 7
6.2.3 Define key procedures for product management 7
6.2.4 Define schedules and required resources for product management 8
6.2.5 Specify how to monitor, measure and control the effectiveness of a product family 8
6.2.6 Document the product management plan 8
6.3 Product management enabling 9
6.3.1 Principal constituents 9
6.3.2 Establish governance policy for end-to-end product lifecycle 10
6.3.3 Mobilize qualified human resources for end-to-end product lifecycle 10
6.3.4 Identify infrastructure and resource needs for end-to-end product lifecycle 11
6.3.5 Enable quality assurance measurement for end-to-end product lifecycle 11
6.3.6 Improve product management process continuously 12
6.4 Product management managing 12
6.4.1 Principal constituents 12
6.4.2 Tailor and allocate governance policy, R & R and resources to relevant sub functions of product management 13
6.4.3 Collect data from product management sub functions 14
6.4.4 Monitor, measure and control product management operation and support 14
6.4.5 Manage actual operation and support of product management 15
6.4.6 Provide feedback to planning and enabling functions of product management 15

7 Product management operation **15**
7.1 General 15
7.2 Market definition for product family 16
7.2.1 Principal constituents 16
7.2.2 Define types of market segmentation for a product family 17
7.2.3 Compile the voice of customers for each market segment 17
7.2.4 Analyse competitors' profile for each market segment 18
7.2.5 Forecast trends in sales for each market segment 18
7.2.6 Analyse market opportunities for each market segment 19
7.2.7 Document market definition results 19
7.3 Technology scanning for product family 19
7.3.1 Principal constituents 19
7.3.2 Identify key technology for product family 20
7.3.3 Analyse technology impacts on product family 21
7.3.4 Analyse competitors' profile of key technology 21
7.3.5 Forecast evolution trends in key technology 22

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7.3.6 Evaluate strategic alternatives for competitiveness through key technology 22
7.3.7 Formulate technology roadmap for product family 23
7.4 Product family definition 23
7.4.1 Principal constituents 23
7.4.2 Identify high-level domain 24
7.4.3 Identify initial candidate members of product family 24
7.4.4 Define initial functional and non-functional characteristics of product family 25
7.4.5 Analyse high-level commonality 25
7.4.6 Analyse high-level variability 25
7.4.7 Document initial product family 26
7.5 Trade-off analysis for product family 26
7.5.1 Principal constituents 26
7.5.2 Formulate the trade-off analysis team 27
7.5.3 Identify vested stakeholders 28
7.5.4 Identify key decision factors and criteria for viable product family 28
7.5.5 Perform trade-off analysis using scenarios 28
7.5.6 Document trade-off analysis results of product family 29
7.6 Product family evolution 29
7.6.1 Principal constituents 29
7.6.2 Monitor changing trends of business, technology and competitiveness of product family 31
7.6.3 Trigger the initiation decision of a product family evolution process 31
7.6.4 Monitor the progress of the product family evolution process 32
7.6.5 Evaluate the result of the product family evolution 32

8 Product management support 33
8.1 General 33
8.2 Role management in product management 33
8.2.1 Principal constituents 33
8.2.2 Identify and structure roles and responsibilities for product management 34
8.2.3 Coordinate identified roles and responsibilities with the organization structure 34
8.2.4 Guide the execution of roles and responsibilities in product management 35
8.2.5 Assign the roles and responsibilities of product management 35
8.2.6 Monitor, measure and control the roles and responsibilities of product management 36
8.2.7 Improve the structure of roles and responsibilities in product management 36
8.3 Decision support in product management 37
8.3.1 Principal constituents 37
8.3.2 Establish decision support policy for product management 38
8.3.3 Tailor decision procedure for product management 38
8.3.4 Guide the decision execution for product management 39
8.3.5 Document the rationale for decisions concerning product management 39
8.3.6 Learn from decision results of product management 40
8.4 Risk management in product management 40
8.4.1 Principal constituents 40
8.4.2 Identify risks related to the platform and variability in a product family 41
8.4.3 Assess the identified risks related to the platform and variability 42
8.4.4 Develop mitigation plans for the risks 42
8.4.5 Monitor the execution of the mitigation plan 42
8.4.6 Learn from actual results of the execution 43

Annex A (informative) **Relationships between product management and other key roles in SSPL 44**

Annex B (informative) **Exemplary analysis methods for trade-offs 45**

Bibliography 47

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology,* Subcommittee SC 7*, Software and systems engineering.*

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Introduction

Software and Systems Product Line (SSPL) engineering and management creates, exploits and manages a common platform to develop a family of products (e.g. software products, systems architectures) at lower cost, reduced time to market and with better quality. As a result, it has gained increasing global attention since the 1990s. Strategic management and supports are provided by product line product management for a product family and its evolution. Product management should collaborate with product line scoping process for the detailed definition of a product family. Also markets, technologies and competitors are carefully and continuously observed for product family definition and its continuous evolution. Product management deals with the economic aspects of product family and in particular with the market strategy.

There are needs for defining product line-specific product management processes that integrate the involved product line disciplines with those for a single product. Furthermore, support of tools and methods are required so that a product line organization can perform product management under the systematic control of complexities. This document addresses the product line-specific processes in product management by dividing those into product management enablement, product management operation and product management support process areas with the guidance of a set of tools and methods capabilities for supporting tasks for product line product management.

This document is intended to benefit people who acquire, supply, develop, operate, and maintain tools and methods for product line product management. This document can be used in one or more of the following modes:

— By an organization intended to implement or operate product lines – to understand, adopt and enact the processes, tools and methods for product line product management. This also helps the organization to evaluate and select relevant tools and methods based on business and user-related criteria.

— By a tool vendor who facilitates or leverages product line engineering practices – to provide a set of tool capabilities that should be embodied in a tool for supporting product management enablement, product management operation and product management support.

The ISO/IEC 26550 family of standards addresses both engineering and management processes and capabilities of methods and tools in terms of the key characteristics of product line development. This document provides processes and capabilities of methods and tools for variability mechanisms in product lines. Other standards in the ISO/IEC 26550 family are as follows:

ISO/IEC 26550, ISO/IEC 26551, ISO/IEC 26552, ISO/IEC 26553, ISO/IEC 26554, ISO/IEC 26555, ISO/IEC 26556, ISO/IEC 26557, ISO/IEC 26558, ISO/IEC 26559 are published. ISO/IEC 26561 and ISO/IEC 26562 are to be published. ISO/IEC 26563 is a planned International Standard.

— Processes and capabilities of methods and tools for domain requirements engineering and application requirements engineering are provided in ISO/IEC 26551;

— Processes and capabilities of methods and tools for domain design and application design are provided in ISO/IEC 26552;

— Processes and capabilities of methods and tools for domain realization and application realization are provided in ISO/IEC 26553;

— Processes and capabilities of methods and tools for domain testing and application testing are provided in ISO/IEC 26554;

— Processes and capabilities of methods and tools for technical management are provided in ISO/IEC 26555;

— Processes and capabilities of methods and tools for organizational management are provided in ISO/IEC 26556;

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— Processes and capabilities of methods and tools for variability mechanism are provided in ISO/IEC 26557;

— Processes and capabilities of methods and tools for variability modelling are provided in ISO/IEC 26558;

— Processes and capabilities of methods and tools for variability traceability are provided in ISO/IEC 26559;

— Processes and capabilities of methods and tools for technical probe are provided in ISO/IEC 26561;

— Processes and capabilities of methods and tools for transition management are provided in ISO/IEC 26562;

— Processes and capabilities of methods and tools for configuration management of asset are provided in ISO/IEC 26563;

— Others (ISO/IEC 26564 to ISO/IEC 26599): To be developed.

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Software and systems engineering — Tools and methods for product line product management

1 Scope

This document, within the context of methods and tools for product line product management**:**

— defines product line-specific processes and their subprocesses for product management of software and systems product lines. Those processes are described in terms of purpose, inputs, tasks and outcomes;

— defines method capabilities to support the defined tasks of each process;

— defines tool capabilities to automate/semi-automate tasks or defined method capabilities.

This document does not concern processes and capabilities of tools and methods for a single system but rather deals with those for a family of products.

2 Normative references

There are no normative references in this document.

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