INTERNATIONAL ISO/IEC

Second edition
2015-12-01

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

Ingénierie du logiciel et des systèmes - Modèle de référence pour l'ingénierie et la gestion de lignes de produits

Reference number
ISO/IEC 26550:2015(E)

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Foreword

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The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

This second edition cancels and replaces the first edition (ISO/IEC 26550:2013), of which it constitutes a minor revision.

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 1990s.

This International Standard provides a reference model consisting of an abstract representation of the key processes of software and systems product line engineering and management and the relationships between the processes. Two key characteristics, the need for both domain and application engineering lifecycle processes and the need for the explicit variability definition, differentiate product line engineering from single-system engineering. The goal of domain engineering is to define and implement domain assets commonly used by member products within a product line, while the goal of application engineering is to develop applications by exploiting the domain assets including common and variable assets. Domain engineering explicitly defines product line variability which reflects the specific needs of different markets and market segments. Variability may be embedded in domain assets. During application engineering, the domain assets are deployed in accordance with the defined variability models.

The reference model for SSPL engineering and management can be used in subsequent standardization efforts to create standards having a high level of abstraction (e.g. product management, scoping, requirements engineering, design, realization, verification and validation, and organizational and technical management), a medium level of abstraction (e.g. configuration management, variability modeling, risk management, quality assurance, measurement, evaluation, asset repository), or a detailed level of abstraction (e.g. texture, configuration mechanism, asset mining) for software and systems product line engineering.

