

# Methodical Aspects for the Development of Product Lines

ILKA PHILIPPOW, KAI BÖLLERT, DETLEF STREITFERDT, MATTHIAS RIEBISCH

Faculty for Informatics and Automation

Ilmenau Technical University

98684 Ilmenau/Thuringia, PF 100565

GERMANY

Ilka.Philippow {Kai.Boellert | Detlef.Streitferdt | Matthias.Riebisch}@tu-ilmenau.de

[www.theoinf.tu-ilmenau.de/proinf/](http://www.theoinf.tu-ilmenau.de/proinf/)

*Abstract:* Reuse is one of the most important aspects for improving the productivity of software development. Nowadays, reuse is mainly realized through object-oriented techniques. Software product line architectures are considered to be a very promising approach for software reuse on a high level. Despite advantages of software reuse, many problems during development and application occur in practice. The main problems in the development and application of product lines result from a poor or non-existing description and documentation. Furthermore, a suitable product line-oriented method for development and application, which is also supported by tools, is lacking. In this paper the evolutionary process for the development and application of product lines is explained and occurring problems are discussed. To support solving some of these problems two approaches are introduced. Activities based on these approaches can be integrated into software product line development processes. One approach deals with the engineering of family requirements using feature modeling techniques. The second approach supports the designing of product line components.

*Key words:* software reuse, product line architecture, evolutionary development process, system family requirements, product line components