08142 Abstracts Collection
Combining the Advantages of Product Lines and Open Source
— Dagstuhl Seminar —

Frank van der Linden[1], Jesús Bermejo[2] and Björn Lundell[3]

[1] Philips Medical, Best, NL
frank.van.der.linden@philips.com
[2] Telvent, Sevilla, ES
Jesus.bermejo@telvent.abengoa.com
[3] Univ. Skövde, SE
bjorn.lundell@his.se

Abstract. From 02.04. to 05.04.2008, the Dagstuhl Seminar 08142 "Combining the Advantages of Product Lines and Open Source" was held in the International Conference and Research Center (IBFI), Schloss Dagstuhl. During the seminar, several participants presented their current research, and ongoing work and open problems were discussed. Abstracts of the presentations given during the seminar as well as abstracts of seminar results and ideas are put together in this paper. The first section describes the seminar topics and goals in general. Links to extended abstracts or full papers are provided, if available.

Keywords. Product lines, product families, open source development, distributed development, agility, variability management

08142 Summary – Combining the Advantages of Product Lines and Open Source

From April 2 to 5, the Dagstuhl Seminar 08142 "Combining the Advantages of Product Lines and Open Source" was held in the International Conference and Research Center (IBFI), Schloss Dagstuhl. During the seminar, several participants presented their current research, and ongoing work and open problems were discussed. Abstracts of the presentations given during the seminar as well as abstracts of seminar results and ideas are put together in this paper. The first section describes the seminar topics and goals in general.

Keywords: Dagstuhl Seminar Proceedings, DROPS

Joint work of: van den Linden, Frank; Bermejo, Jesús; Lundell, Björn

Full Paper: http://drops.dagstuhl.de/opus/volltexte/2008/1546

A product line organization using an open development method

Gary J. Chastek (CMU - Pittsburgh, US)

Opening access to the source code for a product is a business strategy that is increasingly used as the basis for innovative collaborations with stakeholders. The strategy has been successful at producing a large quantity of high-quality software. A tactic in this strategy is to effectively use the efforts of many widely dispersed professionals. The processes, software tools and the communication mechanisms used to facilitate concurrent development by a large number of people are of as much interest as the software being created. In this position paper we present our view of how a software product line organization might operate if it used an open development method (ODM) but is not necessarily producing open source software. We will describe a hypothetical product line (HPL), which is part speculation, part our experience, and partly the experience of others.

Keywords: Opening product line

Joint work of: Chastek, Gary J.; Northrop, Linda M.; McGregor, John D.

Full Paper: http://drops.dagstuhl.de/opus/volltexte/2008/1541

MOSIS project data

Hans Petter Dahle (ICT Norway, NO)

Model-driven development offers high level approach

Speeds development of highly configurable embedded software-intensive systems

Keywords: Model driven development product lines variability

Full Paper: http://drops.dagstuhl.de/opus/volltexte/2008/1542

Intellectual Property: the big challenge in incorporating open

Daniel German (University of Victoria, CA)

Open source software is software that is licensed using an open source license. The Open Source Initiative (OSI) defines the characteristics that an open source license should satisfy and has become the only organization in charge of certifying open source licenses.

As of March 2008, OSI has approved 68 different open source licenses.

An open source license indicates the rights and responsibilities that the user of open source software has. Each of those 68 licenses is different from the others, giving or revoking rights to the software. Any organization interested in using open source software must know and understand how such software is licensed, and how the license affects the way it can use, reuse, incorporate, modify, or extend the software. It should also understand the risks that it entails.

Another important issues to consider is issue of compatibility of licenses. How can software under different licenses (some proprietary) be combined?

As part of this presentation I will describe a model for software composition that addresses this issue, and present a group of licensing patterns that explain how software with different licenses be combined, and how one can legally circumvent some of the restrictions that software licenses impose.

Keywords: Intellectual property

Introducing Product Lines through Open Source Tools

Øystein Haugen (University of Oslo, NO)

We present an approach to introducing product lines to companies that lower their initial risk by applying open source tools and a smooth learning curve into the use and creation of domain specific modeling combined with standardized variability modeling.

Keywords: Open source tools

Full Paper: http://drops.dagstuhl.de/opus/volltexte/2008/1543

Adapting Open Source Software for Establishing Product Line Infrastructures

Jeajoon Lee (Lancaster University, GB)

While we're exploring two research projects (i.e., a system for virtual office of the future and an ambient intelligent system for assistant living), we could adapt open source software (workflow engine and middleware platform) to build product line infrastructures of the systems. Our experiences from both projects show that the product line architectures of the target systems played a key role for the adaptation of OSS. During the seminar, our experiences and questions arose from the projects will be discussed.

Keywords: Open source software, product line infrastructure, product line architecture

Extended Abstract: http://drops.dagstuhl.de/opus/volltexte/2008/1544

Does OSS Tooling Promote OSS Practises

Pentti Marttiin (Nokia Siemens Networks - Helsinki, FI)

Open Source Software (OSS) development is seen as a panacea by many companies. The promise of community-style development, innovation and cost savings drive the wider adoption of OSS in companies. However, it is still difficult to institutionalize the open and agile culture of sharing innovation especially into larger departmentalized organizations. This paper discusses adoption experiences of OSS based portal into a company wide use. We argue that although employment of OSS tooling has successes, the lack of processes still wait for their leveraging thus the innovation potential inside the company.

Keywords: OSS, Inner Source, Portal, Platform

Joint work of: Marttiin, Pentti; Lindman, Juho

Automatic architectural enforcement

Anders Mattsson (Combitech AB, SE)

Automatic architectural enforcement would be very beneficial especially in product line development using open source practices where there is very limited or no access to the architects and the architecture is of paramount importance. However, current techniques for modelling software architecture do not support the modelling of architectural design rules which means that architectural enforcement is achieved by manual reviews. This paper addresses this problem by proposing how architectural design rules could be expressed in UML in a meta-model for the system model.

Keywords: Architecture, Model Driven Development, Open Source Software, Product Line development

Full Paper: http://drops.dagstuhl.de/opus/volltexte/2008/1545

Balancing Technology, Organization and Process in inner Source

Patrick Oor (ICT NoviQ, NL)

The Software Product Line strategy resorts often on a platform team, being responsible for the core assets. A central problem is that this platform team becomes a bottleneck in the development organization, as conflicting requirements are asked for by many different core assets users. This presentation is about how Open Source Development Methods help to decouple product and platform teams. The idea is that working in an Open Source manner within the borders of a company gives the right amount of flexibility to each product team, while allowing the platform team to focus on the long term business targets and build a sustainable set of core assets.

Keywords: Software Product Lines, Open Source Development Methods, Inner Source, Collaborative Development

Extended Abstract: http://drops.dagstuhl.de/opus/volltexte/2008/1548

From SPLs to Open, Compositional Platforms

Jilles Van Gurp (NOKIA Research Center - Helsinki, FI)

In this position paper we reflect on how software development in large organizations such as ours is slowly changing from being top down managed, as is common in SPL organizations, towards something that increasingly resembles what is happening in large open source organizations. Additionally, we highlight what this means in terms of organization and tooling.

Keywords: Compositional development, software product lines, open source

Joint work of: Van Gurp, Jilles; Prehofer, Christian

Full Paper: http://drops.dagstuhl.de/opus/volltexte/2008/1540

Introduction presentation

Frank van der Linden (Philips Medical Systems - Best, NL)

Practitioners and researchers have already identified the potential cross-fertilisation benefits of software product lines and open source software development.

Product line development is being established as an important way of producing software in companies. This ensured an efficient way to obtain a variety of products. It is also an important contemporary research issue, as indicated by the recent special issue of Communications of the ACM, December 2006.

Using open source software appears to be a profitable way to obtain good software. This is a result of several of its properties, ranging from effective feedback to the openness of the source. At a first glance open source and product line practices are conflicting.

This workshop aims to find ways to overcome these conflicting practices and how to profit from both approaches. Product line engineering can improve in agility and fast feedback improving the quality of the result. Open source software development can profit for variability management techniques, developed in product line engineering to improve the efficiency to deal with a diversity of configurations.

Keywords: Open source and product lines

Joint work of: van der Linden, Frank; Lundell, Björn; Bermejo, Jesús