



12th International

Software Product Line Conference 2008

Limerick, Ireland, 8 - 12 Sept 2008

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News

- The [13th International Software Product Line Conference \(SPLC09\)](#) will be held in San Francisco, Clifornia, USA.
- Slides of Dave Parnas's Keynote at SPLC08 are available.
- SPLC08 Finished on a very good note. The conference attracted more than 220 delegates.
- [Notes from the Agile and Product Line Engineering workshop session](#) have been posted on here.
- Registration desk will open 8:15am on Monday 8th September 2008.
- Early registration DEADLINE - 07/08/2008. Please [click here to REGISTER](#) now!
- Conference registration is **now open**. Please [click here](#) to register.
- [Conference program](#) is now available.

Associated Files

- [DaveKeyNote](#)

Acrobat Reader (PDF) - 355 Kb

Software Product Line Conference

SPLC is the premier forum for practitioners, researchers and educators to present and discuss experiences, ideas, innovations as well as concerns in the area of software product lines. SPLC 2008 will be the 12th official gathering of the product line community and will take place in Limerick, one of Ireland's top technological and educational centres. SPLC looks back on a history of a successful exchange of ideas and cooperation among product line practitioners and researchers on product line techniques, methods, and tools. This has led to innovative research ideas and successful industrial product lines. The objective of SPLC 2008 is to continue this dialogue. The technical program will feature invited talks, technical paper presentations, and panel discussions on the most relevant topics in product line engineering. In addition, we will host a number of workshops and tutorials, and will offer selected demonstrations and poster presentations. Like previous years, we will also host the SPLC [Doctoral Symposium](#) and the [Product Line Hall of Fame](#) nomination ceremony.

We invite you to be a part of SPLC 2008.

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SPLC2008 / program

Monday, 8 September 2008

Workshops	Tutorials	
W1- <u>Dynamic Software Product Lines</u>		
W2- <u>Aspect-Oriented Requirements and Architecture for Product Lines</u>	9:00 - 12:30	T1: <u>Production Planning in Software Product Line Organization</u>
		T2: <u>Introduction to Software Product Lines</u>
W3- <u>Service-Oriented Architectures and Software Product Lines</u>	Lunch	
W4- <u>Software Product Line Testing</u>	14:00 - 17:30	T3: <u>Introduction to Software Product Line Adoption</u>
		T4: <u>Leveraging MDE in Software Product Line Architectures</u>

Tuesday, 9 September 2008

9:00 - 9:30	Introduction
9:30 - 10:30	Keynote: Professor David Parnas
10:30 - 11:00	Coffee

11:00 - 12:30	<p>Research Papers: <u>Feature Models</u> Session chair: <i>Patrick Heymans</i></p> <p>Feature Relation and Dependency Management: An Aspect-Oriented Approach <i>Cho, Lee, Kang</i></p> <p>Using Feature diagrams with Context Variability to model Multiple Product Lines for Software Supply Chains <i>Hartmann, Trew</i></p> <p>Sample Spaces and Feature Models: There and Back Again <i>Czarnecki, She, Wąsowski</i></p>	<p>Experience Reports: <u>Staying the Course: Maintaining the Product Line</u> Session chair: <i>Juha Savolainen</i></p> <p>Experiences of Large Banks: Hurdles and enablers to the adoption of Software Product Line Practices in large corporate organisations <i>Krsek, van Zyl, Redpath, Clohesy</i></p> <p>Model-based Design of Product Line Components in the Automotive Domain <i>Muthig, Forster, Pech</i></p> <p>Providing Feedback from Application to Family Engineering - The Product Line Planning Game at the Testo AG <i>Carbon, Knodel, Muthig, Meier</i></p>
12:30 - 14:00	Lunch	
14:00 - 15:30	<p>Research Papers: <u>Empirical Discovery of Product Lines</u> Session chair: <i>Stuart Faulk</i></p> <p>An Exploratory Study of Information Retrieval Techniques in Domain Analysis <i>Alves, Schwanninger, Barbosa, Rashid, Sawyer, Rayson, Pohl, Rummler</i></p>	<p><u>Panel 1: Product Line Scoping in Practice</u></p> <p>Mark Dalgarno</p>

	<p>Visual Tool Support for Configuring and Understanding Software Product Lines <i>Botterweck, Thiel, Nestor, Bin Abid</i></p> <p>On-Demand Cluster Analysis for Product Line Functional Requirements <i>Niu, Easterbrook</i></p>	
15:30 - 16:00	Coffee	
16:00 - 17:30	<p>Research Papers: <u>Extending Variability Management</u> Session chair: <i>Frank van der Linden</i></p> <p>Identifying and exploiting the similarities between rationale management and variability management <i>Thurimella, Bruegge, Creighton</i></p> <p>Renewing the Product Line Vision <i>Campbell</i></p> <p>Applying Software Product Lines to Build Autonomic Pervasive Systems <i>Cetina, Fons, Pelechano</i></p>	<p><u>Tool Demos 1</u></p> <p>Session chair: M. Ali Babar</p> <p>Jump-Starting Software Product Lines with Clone Detection <i>Andrew Mark Dalgarno, Software Acumen Limited</i></p> <p>Solving Requirements Management Challenges in Product Line Development <i>Martin Sarabura, Paul Bowden, MKS Inc</i></p> <p>A Tool Chain for Quality-driven Software Architecting <i>Antti Evesti, Eila Niemelä, Katja Henttonen and Marko Palviainen, VTT</i></p>
19:30 - 22:00	<p>Reception Venue: Dolans Pub</p>	

Wednesday , 10 September 2008

9:30 - 10:30	Keynote: Mr. Luc Koch	
10:30 - 11:00	Coffee	
11:00 - 12:30	<p>Research Papers: <u>DSL and Code Generation</u> Session chair: <i>Peter Knauber</i></p> <p>Decision-Model-Based Code Generation for SPLE <i>Weiss, Li, Slye, Dinh-Trong, Sun</i></p> <p>Adding Standardized Variability to Domain Specific Languages <i>Haugen, Møller-Pedersen, Olsen, Svendsen, Oldevik</i></p> <p>Automatic Domain-Specific Modeling Languages for Generating Framework-Based Applications <i>Santos, Koskimies, Lopes</i></p>	<p>Experience Report: <u>Verification and Practice</u> Session chair: <i>Dirk Muthig</i></p> <p>Enabling Verifiable Conformance for Product Lines <i>Lutz</i></p> <p>A Software Product Line Definition for Validation Environments <i>Magro, Garbajosa, Perez</i></p> <p>Variability Modelling Challenges from the Trenches of an Open Source Product Line Re-Engineering Project <i>Hubaux, Heymans, Benavides</i></p>
12:30 - 14:00	Lunch	

14:00 - 15:30	<p>Research Papers: <u>Formal Modeling and Verification</u> Session chair: <i>Oystein Haugen</i></p> <p>Formal Modeling for Product Families Engineering <i>Fantechi, Gnesi</i></p> <p>Calculating and Modeling Common Parts of Software Product Lines <i>Gruler, Leucker, Scheidemann</i></p> <p>Aspect-oriented Modeling for Variability Management <i>Noda, Kishi</i></p>	<p><u>Panel 2: Agile and PLE</u></p> <p>John D. McGregor</p>
15:30 - 16:00	Coffee	
16:00 - 17:30	<p>Research Papers: <u>Product-Line Quality</u> Session chair: <i>Tim Trew</i></p> <p>Automated Diagnosis of Product-line Configuration Errors in Feature Models <i>White, Benavides, Schmidt, Trinidad, Ruiz-Cortés</i></p> <p>Evaluating Flexibility in Embedded Automotive Product Lines Using Real Options <i>Gustavsson, Axelsson</i></p> <p>Variability Driven Quality Evaluation in Software Product Lines <i>Etxeberria, Sagardui</i></p>	

16:00 - 18:00	<p style="text-align: center;"><u>Tool Demos 2</u></p> <p style="text-align: center;">Session chair: M. Ali Babar</p> <p style="text-align: center;">Modeling and Building Software Product Lines with pure::variants <i>Danilo Beuche, pure-systems GmbH</i></p> <p style="text-align: center;">FLiP: Managing Software Product Line Extraction and Reaction with Aspects <i>Vander Alves, Fraunhofer IESE</i> <i>Fernando Calheiros, Vilmar Nepomuceno, Andrea Menezes, Meantime Mobile Creations</i> <i>Sérgio Soares, Department of Computing and Systems - UPE</i> <i>Paulo Borba, Informatics Center - UFPE</i></p> <p style="text-align: center;">Integrating Models and Aspects into Product Line Engineering <i>Iris Groher, Johannes Kepler University</i> <i>Markus Voelter, Independent Consultant</i> <i>Christa Schwanninger, Siemens AG, CT SE 2</i></p> <p style="text-align: center;">DSML for developing repository-based Eclipse plug-ins <i>Sanna Sivonen, VTT</i></p>
19:00 - 22:30	<p style="text-align: center;">Social Event</p> <p style="text-align: center;">Bus departure: 19:00</p>

Thursday , 11 September 2008	
9:30 - 10:30	<p style="text-align: center;"><u>Panel 3: Catalysts and Inhibitors for Momentum in the Software Product Line Industry</u></p> <p style="text-align: center;"><i>Charlie Krueger</i></p>
10:30 - 11:00	Coffee

11:00 - 12:30	<p>Research Papers: <u>Service-Oriented Product Lines</u> Session chair: <i>Steffen Thiel</i></p> <p>Service-oriented Commonality Analysis Across Existing Systems <i>Hartmann, Harhurin</i></p> <p>A Product Line for Business Process Management <i>Fantinato, Gimenes, Toledo</i></p> <p>An Approach for Developing Service-Oriented Product Lines <i>Lee, Muthig, Naab</i></p>	<p>Experience Reports: <u>Examples of Product Lines</u> Session chair: <i>Isabel John</i></p> <p>Experiences with Mobile Games Product Line Development at Meantime <i>Alves, Camara, Alves</i></p> <p>HomeAway's Transition to Software Product Line Practice: Engineering and Business Results in 60 Days <i>Krueger, Churchett, Buhrdorf</i></p> <p>Building a Family of Compilers <i>Chae, Blume</i></p>
12:30 - 14:00	Lunch	
14:00 - 15:30	<p>Research Papers: <u>Model-based Development</u> Session chair: <i>Tomoji Kishi</i></p> <p>Supporting Evolution in Model-based Product Line Engineering <i>Dhungana, Neumayer, Gruenbacher, Rabiser</i></p> <p>Transformation Patterns for Multi-staged Model Driven Software Development <i>Braganca, Machado</i></p>	<p><u>Tool Demos 3</u> Session chair: M. Ali Babar</p> <p>EASy-Producer – A Product Line Production Environment <i>Holger Eichelberger, Klaus Schmid, University of Hildesheim</i></p> <p>The BigLever Software Gears Unified SPLE Framework <i>Charles W. Krueger, BigLever Software</i></p>

	Reconciling Automation and Flexibility in Product Derivation <i>Perrouin, Klein, Guelfi, Jézéquel</i>	FAMA Framework <i>Pablo Trinidad, David Benavides, Antonio Ruiz-Cortés, Sergio Segura, Alberto Jimenez, University of Seville</i>
15:30 - 16:00	Coffee	
16:00 - 17:30	Hall of Fame <i>Session chair: David Weiss</i> <i>A hall of fame serves as a way to recognize distinguished members of a community in a field of endeavor. Those elected to membership in a hall of fame represent the highest achievement in their field, serving as models of what can be achieved and how. Each Software Product Line Conference culminates with a session in which members of the audience nominate systems for induction into the Software Product Line Hall of Fame.</i>	

Friday, 12 September 2008		
Workshops	Doctoral Symposium	Tutorials
W5- <u>Analyses of Software Product Lines</u> W6- <u>Management and Economics of Software Product Lines</u> W7- <u>Visualisation in Software Product Line Engineering</u>	9:00 - 12:30 Towards a Crosscutting Approach for Variability Management <i>Rodrigo Bonifacio, Paulo Borba</i> Towards an Efficient Reuse of Test Cases for Software Product Lines <i>Andreas Wübbcke</i> Improving the Production Capability of Product Line Organizations <i>Ralf Carbon</i> An Iterative Model for Agile Product Line Engineering	<div> 9:00 - 12:30 </div> <div> T5: <u>Evolutionary Product Line Requirements Engineering</u> T6: <u>Pragmatic Methods for Commercial Software Product Line Engineering Practice</u> </div> <div> Lunch </div>

	<i>Yaser Ghanam, Frank Maurer</i>	14:00 - 17:30	T7: <u>Transforming Legacy Systems into Software Product Lines</u>
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Klaus Pohl, *Univ. of Duisburg-Essen, Germany & Lero, Univ. of Limerick, Ireland*

Klaus (dot) Pohl (at) sse (dot) uni-due (dot) de

Birgit Geppert, *Avaya Labs, USA*

bgeppert (at) research (dot) avayalabs (dot) com

Program Chair:

Local Arrangements Chair:

Muhammad Ali Babar, *Lero, University of Limerick, Ireland*

Muhammad (dot) AliBabar (at) lero (dot) ie

Juha-Pekka Tolvanen, *Meta Case, Finland*

jpt (at) metacase (dot) com

Doctoral Symposium Chair:

Klaus Schmid, *University of Hildesheim, Germany*

schmid (at) sse (dot) uni-hildesheim (dot) de

Panel Chair:

Paul Clements, *Software Engineering, USA*

clements (at) sei (dot) cmu (dot) edu

Product Line Hall of Fame Chair:

David M. Weiss, *Avaya, USA*

weiss (at) avaya (dot) com

Tutorial Chair:

Frank van der Linden, *Philips, Netherlands*

Frank (dot) Van (dot) Der (dot) Linden (at) philips (dot) com

Steffen Thiel, *Lero, University of Limerick, Ireland*

Steffen (dot) Thiel (at) lero (dot) ie

Workshop Chair:

Financial Chair:

Susan Mitchell, *Lero, University of Limerick, Ireland*

Susan (dot) Mitchell (at) lero (dot) ie

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Muhammad (dot) AliBabar (at) lero (dot) ie

Local Organization Support:

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Charles Krueger, *BigLever, USA*

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Rob van Ommering, *Philips, The Netherlands*

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SPLC2008 / Workshops

The workshop program provides a platform for bringing together people from industry, academia, and research institutions to present and discuss experiences and practices in the area of software product line development.

The following full-day workshops will be held in conjunction with SPLC 2008:

Monday, September 8, 2008

- [W1 2nd International Workshop on Dynamic Software Product Lines \(DSPL 2008\)](#)
- [W2 Workshop on Early Aspects: Aspect-Oriented Requirements and Architecture for Product Lines \(EA@SPLC 2008\)](#)
- [W3 Workshop on Service-Oriented Architectures and Software Product Lines - Putting Both Together \(SOAPL 2008\)](#)
- [W4 5th Software Product Lines Testing Workshop \(SPLiT 2008\)](#)

Friday, September 12, 2008

- [W5 Workshop on Analyses of Software Product Lines \(ASPL 2008\)](#)
- [W6 2nd International Workshop on Management and Economics of Software Product Lines \(MESPUL 2008\)](#)
- [W7 Workshop on Open Source Software and Product Lines \(OSSPL 2008\)](#) - **Cancelled**
- [W8 2nd International Workshop on Visualisation in Software Product Line Engineering \(ViSPLE 2008\)](#)

W1: 2nd International Workshop on Dynamic Software Product Lines (DSPL 2008)

Organisers

Svein Hallsteinsen, SINTEF, Norway
 Mike Hinchey, Lero, University of Limerick, Ireland
 Sooyong Park, Sogang University, South Korea
 Klaus Schmid, University of Hildesheim, Germany

Description

In domains such as ubiquitous computing, pervasive computing, service robots, unmanned aerial vehicles, etc., the importance and complexity of software are increasing more than ever. These domains are characterized above all by extensive variation both in requirements and resource constraints. The Software Product Line (SPL) approach has been receiving increased attention as a means to cope with this, specifically as software engineers and developers are faced with increasing pressure to deliver high-quality software more quickly and economically.

More importantly, modern computing and network environments demand a high degree of adaptability from software systems. Computing environments, user requirements and interface mechanisms between software and hardware devices like sensors may change dynamically during run-time. Therefore, in these kinds of dynamic environments, application of SPL needs to be changed from a static perspective to a dynamic perspective, where systems capable of modifying their own behavior with respect to changes in its operating environment are achieved by dynamically rebinding variation points at runtime. This is the idea of Dynamic Software Product Lines (DSPL).

Dynamic Software Product Lines is an emerging, and promising, area of research, with clear overlaps to other areas of research in addition to SPL, notably: Self-* (adapting, managing, healing, ...) systems, dynamic architectures and Agent-Oriented Software Engineering. The objective of this workshop is to solicit ideas, research directions, and results of SPL that employs and supports dynamism in the manner outlined above.

Important Dates

Submission Deadline: ~~June 29, 2008~~ **July 6, 2008 (extended)**

Notifications to Authors: July 20, 2008

Camera-ready Papers: August 3, 2008

Main Contact

Svein Hallsteinsen, SINTEF, Norway
svein (dot) hallsteinsen (at) sintef (dot) no

Workshop Homepage

<http://selab.sogang.ac.kr/dspl08/>

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W2: Workshop on Early Aspects: Aspect-Oriented Requirements and Architecture for Product Lines (EA@SPLC 2008)

Organisers

Vander Alves, Fraunhofer IESE, Germany
Christa Schwanninger, Siemens AG, Germany
Paul Clements, Software Engineering Institute, USA
Awais Rashid, Lancaster University, UK
Ana Moreira, New University of Lisbon, Portugal

João Araújo, New University of Lisbon, Portugal
 Elisa Baniassad, Chinese University of Hong Kong, Hong Kong
 Bedir Tekinerdogan, University of Twente, The Netherlands

Description

Early aspects deal with crosscutting concerns in requirements analysis, domain analysis and architecture design. Work on early aspects focuses on systematically identifying, modularizing, and analyzing such crosscutting concerns and their impact at the early phases of the software development life cycle.

The effectiveness of a software product line approach directly depends on how well feature variability within the portfolio is managed from early analysis to implementation and through maintenance and evolution. Variability of features often has widespread impact on multiple artefacts in multiple lifecycle stages, making it a pre-dominant engineering challenge in Software Product Line Engineering (SPLE). What is strongly needed in SPLE is an improved modularization of variations, their holistic treatment across the software lifecycle and advanced maintenance of their (forward and backward) traceability.

Accordingly, this workshop focuses on the application of aspect-oriented requirements engineering and architecture design in identifying and managing variability across a product line. Topics of interest include, but are not limited to, concepts, methods and tools for early aspects in domain analysis and domain architecture design, and the potential of early aspects for improved traceability, impact analysis, and application engineering.

The main goal of this workshop is to bring together researchers and practitioners from the product line and the early aspects communities in order to discuss the latest achievements and future challenges of the applicability of early aspects in the context product lines.

Important Dates

Submission Deadline: July 1, 2008
 Notification of Acceptance: July 21, 2008
 Camera-ready Papers: August 4, 2008

Main Contact

Vander Alves, Fraunhofer IESE, Germany
 vander (dot) alves (at) iese (dot) fraunhofer (dot) de

Workshop Homepage

<http://ea08splc.iese.fraunhofer.de/>

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W3: Workshop on Service-Oriented Architectures and Software Product Lines - Putting Both Together (SOAPL 2008)

Organisers

Robert Krut, Software Engineering Institute, USA

Sholom Cohen, Software Engineering Institute, USA
 Dragan Gasevic, Athabasca University, Canada
 Andreas Helferich, Universität Stuttgart, Germany
 Jaejoon Lee, Lancaster University, UK
 Grace Lewis, Software Engineering Institute, USA
 Tomi Männistö, Helsinki University of Technology, Finland
 Curt Pederson, American Family Insurance, USA
 Dennis Smith, Software Engineering Institute, USA
 Christoph Wienands, Siemens Corporate Research, USA

Description

Service-Oriented Architecture (SOA) and software product line (SPL) approaches to software development share a common goal. They both encourage an organization to reuse existing assets and capabilities rather than repeatedly redeveloping them for new systems. The intent is that organizations can capitalize on reuse to achieve desired benefits such as productivity gains, decreased development costs, improved time to market, higher reliability, and competitive advantage. Their distinct goals may be stated as:

- SOA: enable assembly, orchestration and maintenance of enterprise solutions to quickly react to changing business requirements
- SPL: systematically capture and exploit commonality among a set of related systems while managing variations for specific customers or market segments

This workshop will build on results of the SOAPL 2007 workshop: Service-Oriented Architectures and Product Lines - What is the Connection? and the workshop report (CMU/SEI-2008-SR-006). This year's workshop, SOAPL 2008, will explore experiences in integrating SOA and SPL, specifically:

1. How web services have been used to support product lines using a service-oriented architecture?
2. How product line practices have been used to support web services and service-oriented architectures?

Topics of interest for the workshop include, but are not limited to:

- Practice areas that span both SOA and product lines (e.g., domain analysis, legacy mining, operations/governance, etc.)
- Handling variability through services
- Cost models to justify investment in SOA for product lines
- Use of support technology such as: domain specific languages, tools, other
- Differences between service-oriented and more conventional product line development approaches
- Architectural approaches: static vs. dynamic

Participants in the SOAPL 2008 will include product line and service-oriented practitioners who have experience in integrating service-oriented architectures and software product lines approaches. These include practitioners in product line engineering, product line management, and architects/developers of SOA-based systems.

Important Dates

Submission Deadline: July 1, 2008
Notification of Acceptance: July 15, 2008
Camera-ready Papers: July 31, 2008

Main Contact

Robert Krut, Software Engineering Institute, USA
rk (at) sei (dot) cmu (dot) edu

Workshop Homepage

<http://www.sei.cmu.edu/productlines/SOAPL2008/>

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W4: 5th Software Product Lines Testing Workshop (SPLiT 2008)

Organisers

Peter Knauber, Mannheim University of Applied Sciences, Germany
Andreas Metzger, University of Duisburg-Essen, Germany
John D. McGregor, Clemson University, USA

Description

Software product line engineering (SPLE) has shown to be a very successful paradigm for developing a diversity of similar software products at low cost, in short time, and with high quality. Similar to the development of single software products, the key aim of testing in software product line engineering is to uncover the evidence of faults in the development artifacts and products. However, significant differences between SPLE and the development of single systems exist. Those differences lead to specific challenges for product line testing.

This fifth instance of the SPLiT workshop series will discuss novel approaches and open issues in software product line testing. Specifically, SPLiT 2008 aims at investigating how testing in software product line engineering can benefit from experience of other disciplines and vice versa. Thus, the workshop will provide an opportunity to discuss innovative ideas, setting a research agenda, and starting collaborations on diverse topics of SPL testing and related areas.

To this end, SPLiT 2008 will bring together both testing researchers and practitioners in a highly interactive event. Each paper session will be organized in order to stimulate discussions. Dedicated working sessions will be devoted to specific issues in SPL testing.

Topics of interest include, but are not limited to:

- Test case design techniques and test case generation
- Definition and measurement of test coverage and test effectiveness
- Techniques for increasing test efficiency and effectiveness
- Test of quality characteristics
- Use of formal approaches for testing
- Application of product line testing strategies and techniques in the context of other development paradigms

- Application of testing strategies from other development paradigms in the SPL context
- Fault models for SPLs

Important Dates

Submission Deadline: 31 May, 2008

Notification to Authors: 15 June, 2008

Camera-Ready Papers: 30 June, 2008

Main Contact

Peter Knauber, Mannheim University of Applied Sciences, Germany
p (dot) knauber (at) hs-mannheim (dot) de

Workshop Homepage

<http://www.biglever.com/split2008/>

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W5: Workshop on Analyses of Software Product Lines (ASPL 2008)

Organisers

David Benavides, University of Seville, Spain

Antonio Ruiz Cortes, University of Seville, Spain

Don Batory, University of Texas at Austin, USA

Patrick Heymans, University of Namur, Belgium

Description

The automation of software product line (SPL) analyses is of growing interest to both practitioners and researchers. In particular, automated analyses of variability models (like feature or decision models) and languages that foster declarative specifications of programs using those models are now common. We note that many of the problems that SPL engineers face are related to configuration problems that have been addressed by the Artificial Intelligence (AI) community. Indeed, the SPL community is using some of their results, e.g., BDD, CSP and SAT solvers.

This workshop is intended to bring together researchers in SPL and AI in order to review and discuss synergies of the various approaches, and to propose new ideas and results. The two long term objectives are (i) learn from what has been done up to now in AI that is related to automated analyses of SPLs and (ii) creating a community interested in automated analyses of SPL in order to keep SPL tools and research up-to-date with the latest technologies.

Important Dates

Submission Deadline: June 15, 2008

Notification to Authors: July 18, 2008

Camera-ready Papers: July 25, 2008

Main Contact

David Benavides, University of Seville, Spain

benavides (at) us (dot) es

Workshop Homepage

<http://www.isa.us.es/aspl08>

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W6: 2nd International Workshop on Management and Economics of Software Product Lines (MESPUL 2008)

Organisers

Klaus Schmid, University of Hildesheim, Germany

M. Ali Babar, Lero, University of Limerick, Ireland

Paul Grünbacher, Johannes Kepler University, Austria

Makoto Nonaka, Toyo University, Japan

Description

Product line engineering has recently emerged as a viable and important software development paradigm. Many companies have been adopting product line approach in order to improve the efficiency of their development processes, to increase the quality of end product, and reduce time-to-market and cost. Researchers and practitioners have proposed several methods, techniques, and tools to support the technical aspects of software product line engineering. Research has also been reported on different mechanics of calculating ROI, understanding Cost-Benefits, and critical factors in adopting software product lines. However, the body of knowledge on the management and economics aspects of software product lines is very thin. Adoptions and management of software product lines require significant initial investment that is expected to maximize the business value. In addition, managing a product line project is far complex and difficult because of the inter-related structure between core assets and products, multiple deadlines, resource allocation, etc. Software product line practitioners need new approaches, models, and tools for addressing various challenges related to the management and economics of software product lines to be able to maximize the business value of adopting product line approach. Moreover, there is need for gathering and using empirical evidence to support different approaches of software product lines.

The first international workshop on management and economics of software product lines aims to bring together researchers and practitioners from academia, industry and governments to report and discuss the challenges and opportunities of adopting and managing software product lines from managerial, organizational, and economics point of view. The workshop will provide a forum to present ideas about using existing management and organizational strategies and economic models to support software product lines and/or propose new approaches, techniques, and tools for business and technical manager to maximize the business value of software product line engineering. The workshop will cover the broad spectrum of research papers, experience reports, and position papers relevant to the economic, management, organizational aspects of software product line engineering.

Important Dates

Submission Deadline: June 29, 2008

Notification to Authors: July 20, 2008
Camera-ready Papers: August 1, 2008

Main Contact

Klaus Schmid, University of Hildesheim, Germany
schmid (at) sse (dot) uni-hildesheim (dot) de

Workshop Homepage

<http://www.lero.ie/mespul08>

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W7: Workshop on Open Source Software and Product Lines (OSSPL 2008)

Organisers

Frank van der Linden, Philips Healthcare, The Netherlands
Björn Lundell, University of Skövde, Sweden
Gary Chastek, Software Engineering Institute, USA

Description

Embedded industries have invested a lot in the introduction of software product lines in their software development. In addition, using open source software appears to be a profitable way to obtain good software. This is also applicable for organizations doing product line engineering. On the other hand, because of the diverse use of open source software, product line development is an attractive way of working in open source communities. In fact, the configuration mechanisms used in open source communities may be applicable within software product lines as well. In addition, product line organizations are usually involved in distributed development, which works very efficiently within open source communities.

However, at present, there is limited interaction between the open source and product line development communities. The aim for the workshop is to explore what the two communities can learn from each other and to develop a better understanding of how the two communities can benefit from each other.

Important Dates

Submission Deadline: June 1, 2008
Notification to Authors: July 1, 2008
Camera-ready Papers: July 31, 2008

Main Contact

Frank van der Linden, Philips Healthcare, The Netherlands
frank (dot) van (dot) der (dot) linden (at) philips (dot) com

Workshop Homepage

<http://www.itea-cosi.org/modules/wikimod/index.php?page=OssPI08>

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W8: 2nd International Workshop on Visualisation in Software Product Line Engineering (ViSPLE 2008)

Organisers

Rick Rabiser, Johannes Kepler University, Austria
Patrick Healy, Lero, University of Limerick, Ireland
Daren Nestor, Lero, University of Limerick, Ireland
Mike Mannion, Glasgow Caledonian University, Scotland
David Sellier, Glasgow Caledonian University, Scotland

Description

Product line engineering has emerged as a viable and important approach to software development during the last few years. To leverage explicit and extensive reuse of shared software artefacts, many companies use a product line approach to build different variants of their products for use within a variety of systems. Product lines can be large and could easily incorporate thousands of elements like variation points and configuration parameters together with diverse dependencies between those elements. This makes product line management and systematic product derivation extremely difficult.

This workshop aims at elaborating the idea of using information and software visualisation techniques to achieve the economies of scale required to support variability management and product derivation in industrial product lines. Visualisation techniques have been proven effective to improve both the human understanding and effective use of computer software. They have also been used to amplify the cognition about large and complex data sets. Exploring the potential of visual representations such as trees and graphs combined with the effective use of human interaction techniques such as dynamic queries, direct manipulation, and details-on-demand when applied in a software product line context is a novel and challenging research direction in software product line engineering.

The workshop aims at bringing together researchers and practitioners to discuss problems and potential solutions related to using visualisation and interaction approaches, techniques and tools to improve the effective-ness of variability management and product derivation. We aim to attract and bring together members from the information visualisation, software visualisation, and software product line engineering communities.

Important Dates

Submission Deadline: ~~June 23, 2008~~ **June 29, 2008 (extended)**
Notifications to Authors: ~~July 14, 2008~~ **July 18, 2008 (extended)**
Camera-ready Papers: July 31, 2008

Main Contact

Rick Rabiser, Johannes Kepler University, Austria
rabiser (at) ase (dot) jku (dot) at

Workshop Homepage

<http://www.lero.ie/visple2008>

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Associated Files

- [AgileProductLineEngineering](#)
Microsoft Powerpoint - 194 Kb

[P1 Product Line Scoping in Practice](#)

[P2 Agile and Product Line Engineering](#)

[P3 Catalysts and Inhibitors for Momentum in the Software Product Line Industry](#)

P1: Product Line Scoping in Practice

Scoping is a key activity in Software Product Lines but organizations coming from a one-of-a-kind software development background typically have little understanding of how it is done in practice and why it is so important.

In this session our veteran product line panellists are asked to consider what scoping is, how it relates to other product line activities and most importantly how they perform scoping in practice.

The panel discussion will be motivated by a small number of examples but the audience is strongly encouraged to bring their own questions and examples to the session so that the discussion takes the direction most relevant to their interests and needs.

Panelists

Danilo Beuche works for pure-systems GmbH, a specialist provider of tools and services for the application of Software Product Line technology. As well as managing the company Danilo also consults extensively on Product Line Engineering, mainly for clients in embedded industries. Danilo has been a tutorial presenter, speaker, workshop organizer and panellist at conferences such as AOSD, ISORC, SPLC and OOPSLA. He is also author of many articles in scientific journals and software development magazines. Danilo has a PhD from the University of Magdeburg for his research applying Software Product Line Engineering to embedded operating systems development.

Isabel John is a researcher and project leader at Fraunhofer IESE. She is responsible for product line introduction projects in industrial contexts and performs product line technology transfer to software developing companies. For almost 10 years, she has been working in industrial and research projects in the context of software product lines, scoping, and product line requirements engineering and has performed scoping in several different industrial and academic contexts.

Prof. Dr. Klaus Schmid holds a professorship for software engineering at the University of Hildesheim. He is active in the areas of Requirements Engineering and Product Line Engineering since the mid-nineties. Over time he has been involved in numerous research and industrial projects. His specific interests are in value-based product line engineering and the engineering of adaptive systems. He has authored numerous refereed papers on these subjects and has been responsible for several workshops and tutorials on international conferences in this area. Previously, he was also department head for requirements engineering and usability engineering at the Fraunhofer Institute for Experimental Software Engineering. He received a diploma degree and a Ph.D. degree in computer science from the University of Kaiserslautern.

Christa Schwanninger works as a Senior Research Scientist at Siemens AG Corporate Technology in Germany where she consults for Siemens business units in software architecture and product line engineering. In the past 10 years she has been actively involved in the development of systems for the telecommunication, automotive, automation and medical devices domains.

P2: Agile and Product Line Engineering

Agile software development and software product line engineering are both successful approaches to the development of software-intensive products, but can the planning driven approach of product lines be effectively integrated with the opportunistic approach of agile techniques? This is a difficult question to answer since each broad strategy refers to a family of possible methods. It is a sufficiently interesting question to have been the subject of a workshop at SPLC 2006 and a journal special issue [1].

In order to begin exploring this question as a community, a working session will be held during the technical program of SPLC 2008. In a working session, the facilitator stimulates discussion by posing initial questions and assertions to which the audience reacts. The interests and experiences of the group will guide the discussion from there. In general, we are interested in generating discussion on:

- your experiences in using agile techniques in actual product line operation
- reasons why you rejected the idea of using agile techniques
- what adjustments you have made to software product line practices to make an agile product line successful

The discussion will continue after SPLC 2008 via a wiki forum and a follow-up session at SPLC 2009 will be proposed to continue discussions.

The agile approach can be characterized by the four values specified in the Agile Manifesto [2].

1. Individuals and interactions over processes and tools.
2. Working software over comprehensive documentation.
3. Customer collaboration over contract negotiation.
4. Responding to change over following a plan.

Additionally, Hanssen and Fægri use the twelve agile principles, which are also a part of the manifesto, to provide a comparison with software product line principles [3].

The software product line approach can be characterized broadly by examining elements of the SEIs Framework for Product Line Practice [4]. By choosing different specific practices in

each practice area within the framework, very different approaches result. Fundamental product line principles include

- the separation of the roles of core asset development and product development, and
- the interaction of both roles with management to ensure continuity across projects.

A software product line organization works to achieve strategic levels of reuse through the identification of common behavior and the constraint of variable behaviors.

The agile culture would appear to emphasize the autonomy of the individual while the product line culture would appear to rely on the common vision developed from centralized planning. To balance these, one approach, is to consider planning as a strategic process and software development a tactical process. This allows for both stability and flexibility, each to a limited extent.

If we consider agility as rapid response, the above approach falls short. If the core assets are taken as a strategic stockpile of stable plans and flexible software, changing the stable assets may take too long and changes only to the flexible assets, over the longer life of a product line, will lead to inconsistent assets. A true integration of the two approaches may be required for a totally satisfactory solution. Such an integration would still operate at both the strategic and tactical levels but would crosscut the core asset, product development, and management areas.

Model-driven development often is seen as strategic since it requires a long term view and tactical since changes can be accomplished quickly by changing the existing model and regenerating the asset. Model-driven development is often seen as limited to software development, but in a product line context, model-driven techniques, such as template-driven generation, can be applied to plans and documents as well as software. The initial creation of models is strategic because it requires a longer term view that extends over all the products in the product line. Their use and subsequent maintenance is more tactical in that they are exercised over the limited scope of a single product. Both customization changes and maintenance changes can be made to core assets for individual products more rapidly because the model-driven approach typically has more automated support for consistency checking, automatic (re-)generation, and testing.

Join us to comment on these approaches and to suggest your own. This is an opportunity to be a participant in the SPLC2008 program, not just a spectator.

REFERENCES

- [1] K. Cooper and X. Franch, "Agile product line engineering," *Journal of Systems and Software*, vol. 81, no. 6, 2008.
- [2] agilemanifesto. [Online]. Available: www.agilemanifesto.org
- [3] G. K. Hanssen and T. E. Faegri, "Process fusion: An industrial case study on agile software product line engineering," *Journal of Systems and Software*, vol. 81, no. 6, 2008.
- [4] P. Clements and L. M. Northrop. Framework for product line practice. [Online]. Available: www.sei.cmu.edu/productlines.

P3: Catalysts and Inhibitors for Momentum in the Software Product Line Industry

Panel Introduction

For Software Product Line Engineering (SPLE) to become a standard and accepted practice in the industry, it must be widely embraced by large corporations, major software tool and service vendors, industry analysts, and technology press. We have seen steady but slow progress in all of these areas over the past few years. What can we do to better control or influence the future trends?

Technology adoption at the industry scale is about building and sustaining momentum. Through a feedback loop comprising successes and failures, credible validation and invalidation, credible communication, leaps of faith, competitive opportunities, perceptions about perceptions, and so forth, momentum is gained or lost. Catalysts and inhibitors in the loop ultimately determine whether momentum will accelerate or be dampened.

In this panel, we bring together an esteemed group of industry leaders from the key areas that impact momentum of new technology adoption, all of whom have been involved in the early stages of the industry's SPLE momentum. In this panel we will search for insights across a broad industry spectrum into the current catalysts and inhibitors, as well as opportunities for the Software Product Line Conference (SPLC) community to positively contribute to the momentum.

Discussion Threads

Some of the questions addressed by the panel include:

- What is the current state of SPLE acceptance and adoption by the broad system and software engineering industry?
- How quickly can SPLE become a standard practice in the industry?
- What are the past, present and future catalysts that facilitate and accelerate the momentum?
- What are the past, present and future inhibitors that dampen or stall the momentum?
- How do the different roles in the industry – large corporations, major tool and service vendors, industry analysts, technology media – impact this and what is their relative importance?
- To what extent are each of these roles having positive impact?
- What can members of the SPLC community – both researchers and practitioners – do to help catalyze the momentum?

Insights Offered

For the SPLC community to fully impact the future of Software Product Line Engineering in the industry, we must now understand and address many factors that have traditionally been outside of the SPLC focus.

Expected insights for practitioners: Perceptions, trends and opportunities that can impact the technical and business SPLE efforts within their companies.

Expected insights for researchers. Perceptions and trends that can impact research agendas.

Panelists

Charles Krueger (moderator), Founder and CEO, BigLever Software, the industry leading provider of SPLE framework, tools, methodology and services.

John Carrillo, Senior Director of Corporate and Product Strategy, Telelogic, an IBM company. Leading the strategic initiative to bring SPLE practice into the tools and practices offered by Telelogic and IBM Rational.

Bola Rotibi, Principal Analyst, Macehiter Ward-Dutton. Focused on issues and products concerning the software development and delivery processes and technologies, including a focus on SPLE.

James Cezo, Principal Member Engineering Staff, Lockheed Martin. Leading the adoption of System and Software Product Line Engineering practice for Lockheed Martin Maritime Systems and Sensors.

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A hall of fame serves as a way to recognize distinguished members of a community in a field of endeavor. Those elected to membership in a hall of fame represent the highest achievement in their field, serving as models of what can be achieved and how. Each Software Product Line Conference culminates with a session in which members of the audience nominate systems for induction into the Software Product Line Hall of Fame. These nominations feed discussions about what constitutes excellence and success in product lines. The goal is to improve software product line practice by identifying the best examples in the field. Nominations are acted on by a panel of expert judges, who decide which nominees will be inducted into the Hall of Fame.

You can read about the current members of the Software Product Line Hall of Fame at http://www.sei.cmu.edu/productlines/plp_hof.html.

Inductees from 2007 will be announced at the SPLC 2008 Hall of Fame session.

Criteria for Election to the Software Product Line Hall of Fame

Members of the software product line hall of fame should serve as models of what a software product line should be, exhibiting most or all of the following characteristics:

- The family that constitutes the product line is clearly identified, i.e., there is a way to tell whether or not a software system is a member of the product line, either by applying a known rule or a known enumeration.
- The family that constitutes the product line is explicitly defined and designed as a product line, i.e., the commonalities and variability that characterize the members of the product line are known and there is an underlying design for the product line that takes advantage of them.
- The product line has had a strong influence on others who desire to build and evolve product lines, and has gained recognition as a model of what a product line should be and how it should be built. Others have borrowed, copied, and stolen from it in creating their product lines or in expounding ideas and practices for creating product lines.
- The product line has been commercially successful.
- There is sufficient documentation about the product line that one can understand its definition, design, and implementation without resorting solely to hearsay.

Hall of Fame Judges

David M. Weiss, Avaya Labs Research (Chair)

Paul C. Clements, Software Engineering Institute

Kyo Kang, Pohang University of Science and Technology
Charles Krueger, BigLever Software

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SPLC2008 / Important Dates

Early bird registration deadline: 7 August, 2008

Paper Submissions **(Closed):**

Submission Deadline for Abstract: *22 February, 2008.*

Submission Deadline for Full Paper: *3 March, 2008.*

Notification of Acceptance: *28 April, 2008.*

Camera-Ready Version: *2 June 2008.*

Workshop Submissions **(Closed):**

Workshop Proposal Submission: *22 February, 2008.*

Notification of Workshop Acceptance: *17 March, 2008.*

1-Page Workshop Summary (Camera-Ready): *9 June 2008.*

Tutorial Submissions **(Closed):**

Submit your proposal: *15 March, 2008.*

Notification: *15 May, 2008.*

2-Page Workshop Summary (Camera-Ready): *9 June 2008.*

Demo/Posters Submissions **(Closed):**

Submit your proposal: *6 May, 2008.*

Notification: *20 May, 2008.*

Demo/Poster Summary (Camera-Ready): *9 June 2008.*

Panels Submissions **(Closed):**

Submit your Panel proposal: *30 April, 2008*

Notification: *20 May, 2008*

Panel Summary (Camera-Ready): *9 June 2008.*

Doctoral Symposium Submissions:

Submit your Ph.D. proposal: *15 June, 2008.*

Notification: *20 July, 2008.*

Revised Version for Distribution: *31 July, 2008*

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The Venue

The conference venue, the **Hilton Limerick**, is one of the newest additions to Limerick's skyline. Situated on the banks of the river Shannon at O'Callaghan Strand, the seven-floor hotel has 184 bedrooms, an entire floor dedicated to executive travellers with an executive lounge, 14 'Hilton Meetings' rooms, a LivingWell health club with a 20m pool, full gym and beauty spa, a fine-dining restaurant, bar and café bar and function and wedding facilities for 450 guests. The heart of the city centre with its many attractions is just a stone's throw away across Sarsfield bridge.

Limerick is the gateway to Ireland's scenic west. An ancient city, with a charter predating that of London, Limerick epitomises Ireland's industrial and cultural renaissance. An economy that has grown at an average of 7% per annum for over 5 years, driven in large part by the IT sector, has resulted in a reinvigorated social and cultural scene that has, nonetheless, lost none of its traditional spontaneity and charm. You have to look very hard to find traces of 'Angela's Ashes'.

The **city of Limerick** boasts galleries, theatre, excellent restaurants and a world class museum housed in the restored Custom House. King John's Castle bestrides the Shannon at one of its many bridges while St Mary's Cathedral is a small scale gothic masterpiece dating from the 12th century. Only a few miles from the city, the University of Limerick has played a major part in Ireland and Limerick's rebirth. Set on a magnificent parkland campus, beside the Shannon, the University is the centrepiece of the National Technological Park.

Above all, Limerick is a haven for Irish traditional music and you can find a lively 'session' on any night of the week.

For more information on Limerick visit [VisitLimerick.com](http://www.visitlimerick.com)

Limerick is the heart of the Shannon region. A short drive takes you to the wonders of the Burren, the Cliffs of Moher or the beauty of Galway Bay. An additional short boat trip reaches the Aran Islands, last outpost of Europe and a stronghold of the Irish (Gaelic) language. To the east is the Shannon river and its hills and lakes; to the south lies Kerry and the legendary beauty of Dingle and Killarney. There are organised tours or you can drive yourself along winding country roads.

Lero is proud to host SPLC2008 and we wish you Céad Míle Fáilte - one hundred thousand welcomes.

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- Circulating call for papers
- Distributing the promotional material provided on this page
- Placing a link of this website on your personal homepage
- Mentioning SPLC08 on your blog and during presentations

Associated Files

- [Call for Participation](#)
Acrobat Reader (PDF) - 90 Kb
- [Call for Submissions flyer](#)
Acrobat Reader (PDF) - 61 Kb
- [SPLC 2008 Presentation Slides](#)
Microsoft Powerpoint - 26.2 Mb
- [SPLC 2008 Promotional Video](#)
Zip/Compressed - 41.9 Mb

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SPLC2008 / Sponsorship

The 12th International Software Product Line Conference (SPLC) will be held in Limerick, Ireland on September 8-12, 2008. Software product lines represent an important and growing software development paradigm, and SPLC is a leading forum for researchers and practitioners working in this field. SPLC 2008 will provide a venue for practitioners, researchers, and educators to reflect on the achievements made during the past decade, assess the current state of the field, and identify key challenges researchers and practitioners are still facing. The conference will feature research and experience papers, topical panels, tutorials, workshops, demonstrations, and other opportunities to interact. This year's program will span a wide range of product line interests. It will also include a Doctoral Symposium in which the next generation of researchers will receive guidance and support. We invite you to become a corporate sponsor of SPLC. There are three levels of sponsorship described in the attached flyer. Your sponsorship, in addition to helping with the general expenses of the conference, will assist in enabling research students to attend the conference. Your support will help SPLC 2008 to be an effective venue for sharing and learning. Our Financial Chair, Susan Mitchell, will be happy to answer any questions you may have. You can contact Susan at Susan (dot) Mitchell (at) lero (dot) ie. Thanks for your consideration.

Associated Files

- [SPLC-2008 Sponsorship](#)
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The registration for the SPLC 2008 Conference is **now open**. Please [click here](#) to register online. The online registration page also contains a pdf version of the registration form to be used for registration via fax or post. Please proceed to the [registration page](#).

Registration Fees for SPLC 2008

Registration Fees	Standard Fee until August 7 th	Standard Fee after August 7 th	Notes
Conference Standard fee	€390.00	€490.00	Fees per person include for the whole conference: lunches, coffee breaks, reception, banquet and proceedings Conference Fee reduction of €50 if you also register for one workshop/tutorial
Conference Student fee	€230.00	€290.00	Fees per person include for the whole conference: lunches, coffee breaks, reception, and proceedings. (Banquet is not included)
Tutorial (Half Day)	€100.00	€150.00	Fees per person for one tutorial include: coffee break, lunch and tutorial documents.
Workshop (Full Day)	€100.00	€150.00	Fees per person for one workshop include: coffee break, lunch and workshop documents.



Multi-Dimensional Software Families: Document Defined Partitions of a Set of Products

David Lorge Parnas

Abstract

More than 30 years after it was proposed that a set of closely related programs would be easier to maintain than a set of independently developed programs, the software industry is still struggling with the complex problem of making updates to collections of “almost alike” products. This talk has four themes:

- A program-family might not be a software product line but there are advantages that accrue if a software product-line is a program family.
- Full exploitation of the program-family concept requires explicit design effort.
- Full exploitation of the program family concept requires recognition that a set of programs can and should be partitioned into families in many ways.
- Precise documents can be used to characterize families and subfamilies, and make it easier to maintain a well-designed set of program products.

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1/1

“Program Family” vs “Software Product Line

When is a Set of Programs A Program-Family? (Parnas 1976)

- “When it is worthwhile to study programs from the set by first studying the common properties of the set and then determining the special properties of the individual family members”. (pragmatic definition)

What is a product line?

- “Set of products offered by producer to customers”

Product-Line is a commercial concept motivated by market analysis and usually determined by marketing people.

Program Family is an Engineering concept, determined by designer decisions.

- Several product lines could contain members of a family.
- Product lines could contain members of several families.

1/43

Why are Program Families and Product Lines Confused?

There are many benefits to having a product line be a program family.

- Reduced maintenance costs
- Faster, more predictable additions to product line
- More reuse
- Products can have company “image”.

The more these products have in common, the more advantages you have.

If you look at software products closely, you will find many **unnecessary** differences reducing benefits.

A critical research question is how **designers** can reduce or eliminate such differences and increase benefits.

2/43

A Personal (Brief) View of History

- Amdahl, G.M., G.A. Blaauw, F.P. Brooks, Jr. 1964: "Architecture of the IBM System/360," IBM Journal of Research and Development, 8: 87-101
- Parnas, D.L., "On the Design and Development of Program Families", *IEEE Transactions on Software Engineering*, Vol. SE-2, No. 1, March 1976, pp. 1-9.
- Heninger, K., Kallander, J., Parnas, D.L., Shore, J., "Software Requirements for the A-7E Aircraft", NRL Report 3876, November 1978, 523 pgs.
- Britton, K.H., Parker, R.A., Parnas, D.L., "A Procedure for Designing Abstract Interfaces for Device Interface Modules", *Proceedings of the 5th International Conference on Software Engineering*, March 1981, pp. 195-204
- Weiss, D.M., Chi Tau Robert Lai, "Software Product-Line Engineering: A Family-Based Software Development Process", Addison Wesley 1999
-
- Many more books, papers, methods. Many authors unaware of these! Note a growing concern with artifacts, tools, rather than design principles.

3/43



"Architecture of the IBM System/360" (1964)

Double Revolution in Computer Hardware

•New instruction set and structure (not my taste)

(I hear the same ideas presented as new every few years.)

•One "architecture" for set of really different computers

Dispute: "Architecture" or "Facade"

Previously the implementation had driven the instruction set.

Family defined by a document: "Principles of Operation"

Read it before you pick your model from the product-line.

This was all that they had in common.

No "variabilities" discussed in this family-defining document.

4/43



"Design and Development of Program Families" (1976)

1969: Developers plan to develop three operating systems independently and meet to make them compatible later.

- Observation: This never works. The earliest design decisions in a project are usually the most difficult to revise.
- Common aspects should be decided first.
- Proposed a family tree in which only the leaf nodes were products. No product was descendant of another.
- Each level introduces sub-families.
- Documentation of shared decisions essential.
- Documents must be binding on all who follow.

1976 paper proposed that we make decisions in a different order (based on above) and document these decisions in the form of interface specifications.

5/43



"Software Requirements for the A-7E Aircraft" (1977)

Part of a "design for ease of change" effort.

Designers cannot make everything equally changeable.

Program designers can't know what will change.

Several versions in use at the same time.

As part of our requirements document we listed

- fundamental assumptions (things unlikely to change), which today would be called commonalities.
- expected changes, which today would be called variabilities.

These lists and the rest of the document defined a program family of which only a few members would actually be produced.

6/43



Procedure for Designing Abstract Interfaces (1981)

Another aspect of “design for change”.

Interfaces that won’t change for devices that will be replaced.

- Interface as a set of assumptions, can be reviewed by SMEs in that form and then translated into programmer’s API form.
- Based on documenting commonalities and translating variabilities that can not be hidden into parameters.
- Many advantages of (then) current practice (still widespread) based on either rewriting code or using a descriptive data structure.

Viewed as designing a family of programs.

Explicit up-front attention to time of change (rewrite, recompile, restart, pause, “hot-change”).

7/43

David Parnas

4 September 2008 23:40 SPLC08.slides

Middle Road Software 

The Practical Motivation (review)

With such pressure to get the first product out (or the next product) why should we slow down now for future ones?

- Maintaining set of “almost alike” products is expensive and difficult.
- We want to avoid doing the same thing again and again.
- For users, unnecessary differences between products are annoying.
- Having a set of similar products to “move” through required changes slows a company down and increases its development costs.
- Documents that apply to all products in a product line, are not usually good for any one of them.

The documents you write must be really used and useful.

9/43

David Parnas

4 September 2008 23:40 SPLC08.slides

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Software Product-Line Engineering (Weiss and Lai 1999)

A Family-Based Software Development Process

Detailed description of how to turn abstract design principles into a systematic industrial process.

Detailed examples based on industrial experience.

Recognizes the importance of documents; uses a combination of forms and informal documents.

Basically looks at a two-step model (domain, product) that limits the “tree” to a two level tree.

New idea of incorporating the commonalities in a program generation tool and language.

8/43

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Fighting Symptoms vs. Removing Causes

The “Humpty Dumpty” syndrome:

- If software is not suitable for reuse, we build repositories and they remain empty or the contents are never used.
- If interfaces are complex and undocumented, we work on “teamwork”.
- If the requirements are not known, we call them “non-functional”.
- If we don’t document well, we work on information retrieval.
- If we don’t know what to say, we work on languages.
- If we don’t know which configurations work, we need variability management.

“Too little, too conventional, too late”, should be our motto.

We have to solve these problems when designing, not after they are apparent. You can’t put things back together then.

10/43

David Parnas

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Three Development Models for Program Families

I classify approaches as follows

- Two Level Tree (Domain/Product)
- Multi-Level Tree (Family, Subfamily ... leaf node product)
- Multiple Partitioning Approach (newer)

Ordered from Least Flexible to Most Flexible.

11/43

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Two Level Tree (Domain/Product)

Top Level (called Domain Engineering):

- Identify all things that will be in all members of family.
- These commonalities characterize the family.
- Build tools and components that are specialized to build family members.

Lower level (called Product Engineering):

- Use those tools to build products.

If you do a good job designing the “domain” the products will be easy to build and have a lot in common.

12/43

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Issues With the Two Level Tree Model

Product Line in which any pair of members have a lot in common but there is nothing that they all have in common.

- Would still be useful to apply product line techniques.
- Is it a family? Not as defined in 1976 - but still useful to identify commonalities even if they aren't universal.
- What if some subset of products have more in common with each other than the whole set - why can't we have subfamilies?
- Must there be common artifacts? (/360)

13/43

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Multi-Level Tree (1976)

Identify the commonalities for the whole family

Partition the family - identify additional commonalities

Repeat as far as useful

14/43

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Issues With the Multi-Level Tree Model (1976)

Product Line in which any pair of members have a lot in common but there is nothing that they all have in common.

What if the order of certain decisions is irrelevant? How do you structure the tree? Is it a tree? (Dave Weiss).

What if two family members that are far apart in the tree still have some commonalities that are not root-node commonalities? What if there isn't a common ancestor with those commonalities?

Conclusion: 1976 tree approach is more useful than the special case (two level) but naive (too simple)

15/43

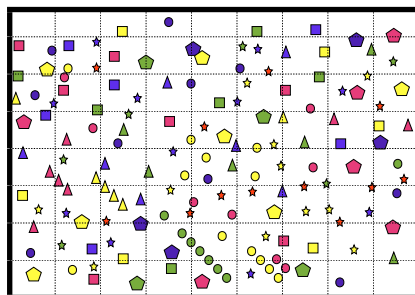
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Multiple Partitioning Approach - II



- We can partition by colour, shape, row of center, column of center, grid of center, and combinations. (e.g. green square)
- Every partition is a family.
- A product may belong to more than one family but only to exactly one family in each partitioning.

17/43

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Multiple Partitioning Approach - I

Sets S_1, S_2, \dots, S_n partition set S if

$$S_1 \cup S_2 \cup \dots \cup S_n = S$$

$$(S_i \cap S_j \neq \emptyset) \Rightarrow (i = j)$$

Alternatively, using predicates

• Predicates P_1, P_2, \dots, P_n with domain that includes set S partition S if

$$P_1 \vee P_2 \vee \dots \vee P_n = \text{true}$$

$$(P_i \wedge P_j \neq \emptyset) \Rightarrow (i = j)$$

The subsets are partitions in the partitioning.

A set may have more than one partitioning.

16/43

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Multiple Partitioning Approach - III

A product line may be partitioned in many ways.

Each product belongs to many families. There will be one for each partitioning.

Examples:

- partition by platform (hardware)
- partition by software platform
- partition by set of displayable natural languages
- partition by input panel
- partition by display type
- partition by programming language used
- partition by interface type (e.g. protocol)
- partition by price considerations

18/43

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Documents as Predicates

If you compare a description with the object that it purportedly describes, you can tell if the document is true or false.

If you compare a specification with an object that it purportedly describes, you can tell if it satisfies the specification or not.

In this way, a document is a predicate on a set of objects. It partitions that set of objects into (at least) two sets.

Parameterized documents partition more finely.

If the document contains a useful amount of information that you should read before studying an individual object, the document describes or specifies a family.

19/43

Document Expressions

Since we can treat documents as predicates, we can combine them using the operators that are used in predicate expressions (\wedge , \vee , \neg , \rightarrow) to get *document expressions*.

Using document expressions, we can identify a subset of programs. One application of this is for automated update systems (but it is also useful for manual maintenance).

21/43

Document Defined Program Families

Precise documents partition sets of programs.

- Treat them as predicates

A parameterized document defines a set of documents, one for each possible set of values for the parameters.

- If there is a set of programs such that every program in the set is covered by exactly one of those documents, that set of programs is a family and the document defines and partitions that family.

Alternative documents:

- If we have a set of documents, D, and a set of programs P such that every program in P is covered by exactly one of those documents, P is a family and D defines and partitions that family.

What you should read about all members before studying the individual is in the defining document.

20/43

Why Are These Ideas Useful?

These ideas allow you to design, develop family of programs with a lot in common without restrictions.

What they have in common is precisely documented.

When adding a new program to the family, the documents can be used to constrain the developers of that program.

The precisely documented commonalities and the precise documentation of their differences make this family easier to maintain and extend by adding new products.

If it isn't documented it is less likely to be a family in any useful sense because the true commonalities will be limited.

22/43

Abstract Commonalities vs. Common Artifacts

Current papers seem to assume that product lines must share code artifacts.

- The original IBM /360 family did not share physical components. It was defined by an abstraction. Same for later hardware product lines.
- My intel-based Mac and PowerPC Mac are part of a family.
- Sharing artifacts has obvious advantages, but sharing abstractions is possible when artifacts cannot be shared and has equally real advantages for users and developers.
- Sharing abstractions allows rapid progress in implementation.
- In many applications you get a shared “look-and feel” with very different components.
- Sharing abstractions only works if the abstraction is documented. Otherwise commonalities will be hard to discover and will evaporate.

23/43

Parameterized Documents: Commonalities, Variabilities

The document(s) that define a family can contain parameters.

- The document captures the commonalities.
- The parameters are the explicit variabilities.

If the families contain alternatives that are too different, we introduce “choice” parameters in the document. The values of these parameters identify one of several alternative documents.

The choice parameters are also variabilities.

25/43

Constraints vs. Enumeration of Possible Values

Once variabilities have been identified, it is usual to enumerate the possible values.

This is “backward looking” not “forward looking”.

“We cannot see into the future”.

However, we can write down constraints that must apply in the future. We must capture what we know and we do know a lot.

If we can find no reason that something is impossible, (i.e. if no constraints rule it out), we must prepare for it.

24/43

Variabilities Can be Made Redundant

It is common to talk about two lists, variabilities and commonalities.

Every fact about a family member is either a commonality or must be a specific set of values for the variabilities.

If you state all of the commonalities, you have an implicit definition of the variabilities.

If you have a parameterized document that states all of the commonalities, you have a way of classifying systems.

There are usually other, hidden, variabilities.

26/43

Commonalities, Explicit Variabilities, Secrets

If we have a document describing a set of programs, we can distinguish 3 kinds of information.

- **Commonalities:** the information given in the document.
- **Explicit variabilities** (parameters whose value can vary among program family members)
- **Secrets:** Information not given in the document. These are implicit variabilities.

27/43

Example: Program Function Document

Specification for a search program

$(\exists i, B[i] = x) \mid (\forall i, ((1 \leq i \leq N) \Rightarrow B[i] \neq x))$

$j' \mid$	$B[j'] = x$	<u>true</u>
$\text{present}' =$	true	false

$\wedge \text{NC}(x, B)$

Commonalities:

- External Data Structure (int array $B[1:N]$); int j , x ; bool present
- required effect on that data structure
- functional nature of effect indicates no need for internal memory

Parameters/explicit variabilities: integer N

Secret: Sort Algorithm, internal variables

This defines the family of programs.

28/43

Module Interface Document

Method: Possible values of each output given as function/ relation of history of input and output values.

No mention of state variables (actual or otherwise).

Commonalities:

- I/O variables as declared in document
- I/O behaviour (as above)
- Parameters appearing in interface document

Variabilities:

- Values of parameters

Secrets:

- Internal Data structure, abstraction function, program functions

29/43

Example of TFM-Style Document

Software Quality Research Laboratory - University of Limerick - Ireland

Keyboard Checker: Tabular Expression

$N(T) =$

		$\neg (T = _) \wedge$		
		$N(p(T)) = 1$	$1 < N(p(T)) < L$	$N(p(T)) = L$
$\neg \text{keyOK} \wedge$	keyOK	2	$N(p(T)) + 1$	Pass
	$\neg \text{keyesc} \wedge$		$N(p(T)) - 1$	$N(p(T)) - 1$
	$\neg \text{prevkeyOK} \wedge \text{prevkeyesc} \wedge \neg \text{preprevkeyOK}$		$N(p(T))$	$N(p(T))$
	$\neg \text{prevkeyOK} \wedge \text{prevkeyesc} \wedge \neg \text{preprevkeyOK}$		$N(p(T))$	$N(p(T))$
	$\neg \text{prevkeyOK} \wedge \neg \text{prevkeyesc}$	1	$N(p(T))$	$N(p(T))$
	$\neg \text{prevkeyesc}$	1	$N(p(T))$	$N(p(T))$
$\text{keyesc} \wedge$	$\text{prevkeyesc} \wedge \neg \text{prevkeyesc}$	Fail	Fail	Fail
	$\text{prevkeyesc} \wedge \text{prevkeyesc}$	1	$N(p(T))$	$N(p(T))$

38/52

30/43

Module Guide

Hierarchical decomposition giving secret for each module.

Each level must partition the module above.

Parameters for (partial) inclusion of a component.

Alternate decompositions indicated by choice parameters.

Family characteristics:

- Possible structures indicated by choice and inclusion parameters.

Variabilities specified by parameter values.

Secrets (some to be told in other documents)

- interfaces, internal design of modules, algorithms.

Hierarchical tabular format for module guide proposed by Marius Dragomiriou is useful.

31/43

Module Internal Design Document

Further reviewable decisions before coding.

- Complete data structure
- Abstraction function
- Program function specifications for externally usable programs

Alternative designs, partial inclusion, and other parameters will capture the explicit variability.

Secrets (not specified) are the algorithms - but not their functions.

Data structure defined using programming language

Tabular notation useful for functions.

32/43

Document: Specification or Description

Description: Facts about the product.

Partial specification: Description in which the only facts reported are requirements.

(Full) Specification - Specification reporting all requirements for a product.

“Contract” not a good word, includes more than spec.

We can describe an existing program family or specify a future one with the same documents. The purpose of each document must be stated.

The phrase “specification language” makes no sense to me with these definitions of “specification”.

33/43

Parameter Evaluation Time

We must specify when a parameter may change(1980).

- Redesign time
- Code generation time.
- During System restart
- Brief pause in service
- While offering uninterrupted service (old idea new word)

Each time requires different implementation techniques.

- There are no restrictions.
- Code must contain the parameters explicitly.
- Data structure must be dynamic.
- Program to update data structure must be present.
- Parameters dealt with as program variables.

There is nothing new here, a “dynamic product line” was offered by Wang Co. in its word processors.

34/43

Need for Precise, Complete and Consistent Documents

Vague documents allow people to work at cross-purposes.

Incomplete documents allow people to guess or base their work on false information.

Inconsistent documents allow people to confidently work using incompatible assumptions.

Natural Language (or Esperanto) won't work.

Mathematics is the key to getting the necessary properties.

It is not the axiomatic or equational mathematics that you see from CS theoreticians. It is the "evaluation" based mathematics that Engineers almost always use. (no search, just evaluation)

35/43

Need for Ease of Reference

Implementers do not want to search for information.

A strict set of organizational principles is needed.

- A place for everything
- Everything in its place
- Missing information must be obvious
- Inconsistent information must be detectable
- Correctness can only be checked by review and testing.

Example:

- With the 1977 A-7 document, I could answer questions looking at no more than 7 pages (paper document, no search program).
- With tabular mathematical expressions, questions are usually answered by using 2 headers to find one cell.

36/43

Eschew "Formal Methods"

The name was a fatal mistake:

- It took people away from classic applied mathematics towards "theory".
- They should have learned how to use existing conventional mathematics
- Instead, field invents "unripe" mathematics

Present oversimplified models, not accurate documents.

Not designed for readability or ease-of-reference.

No agreed semantics, continual modification.

Based on philosophy, logic, not Engineering mathematics.

Based on deduction (search) not expression evaluation.

The only "new" problems are piece-wise continuous functions and expressions using partial functions.

Technology transfer effort was a harbinger of failure.

37/43

Advice to industry - I

The product-line is a marketing decision.

Making your product-line a program family is Engineering.

Anyone can have a product line.

- It will only be a family if you use precise documents to define it.
- Without binding documentation there will be unnecessary and undocumented deviations, and too few common properties to be useful.
- If you want it to be "*worthwhile to study programs from the set by first studying the common properties of the set and then determining the special properties of the individual family members,*" you should document those properties. (Marius Dragomiriou).
- You won't get the full benefit of these concepts without documenting.

38/43

Advice to industry - II

Learn to produce professional documents, not stories

- You won't be the first.
- It has gotten easier through research.

Learn to use professional documentation for reviews, testing, inspection, etc. .

Define your family by a document expression.

Pick your new member by specifying parameter values.

Use evaluation to obtain product-specific documents.

Test the product against the documents.

If you need to extend the family do it by revising the documents that define that family.

39/43

Ideas for academics

Don't play the "numbers game" (CACM, Nov. 2007, page 19)

- Try it successfully before you sell it.
- One good paper trumps 20 forgotten ones.

It's not the language; its the design!

Documentation is the ideal application area for many CS technologies:

- theorem provers
- computerized algebra systems
- language processors

Eschew Undefined Modeling Languages (UMLs).

Go back to basics; remember the goals.

41/43

Advice to industry and Academia

Teach How To Design.

Good Up-Front Design yields Simpler Documents and Simpler Document Structure.

I am repeatedly amazed at the number of developers that I meet who do not understand well-known design principles.

Patterns are not a substitute for principles - often repeat mistakes.

Design is learned by doing, not by listening.

If your instructors give long "introductory" lectures, they are doing the wrong thing and may be the wrong people.

Instruction must be "skills-based", i.e. teach doing.

40/43

A Vision of Future Professional Software Development

Software Developers Designing through documentation

- Making and recording design decisions in precise complete documents
- Reviewing those documents against precise standards
- Implementing using the documents
- Testing and inspecting against those documents
- Keeping documents up to date
- Finding reliable information quickly in those documents.

Designing Product Lines as Program Families

Defining Program Families by Document Expressions

Defining individual products using Document Expressions.

Every Product has an individualized set of documents.

42/43



Keep Your Eye On the Goals

- **Maximizing commonality (including abstractions)**
- **Exploiting that commonality**
- **Communicating that commonality (including abstractions)**
- **Maintaining that commonality while extending the family**

P.S. *This talk is part of a large family of talks. The commonalities are diffuse, abstract, and undocumented. I am sorry!*





SPLC2008 / Call for Submissions / Doctoral Symposium

Call for Papers: SPLC Doctoral Symposium

Goal

The goal of the SPLC Doctoral Symposium is to provide a supportive, but challenging environment that enables students to further improve their research work leading to a Ph.D. Students will be given an opportunity to discuss their research, especially goals, methods, and intermediate results with top researchers in the area. This is a unique opportunity for Ph.D. students to gain valuable expert feedback with respect to all aspects of their research work and to get into contact with other students who are at a similar stage of Ph.D. research. The overall aim is to improve the quality and quantity of successful Ph.D. work in the area of software product lines.

Scope

The event aims at Ph.D. candidates that are sufficiently advanced to provide already results from initial work but are also sufficiently far from submission that feedback may be integrated into the final version of the Ph.D. Other students (including diploma and master students) may be admitted based on availability of space.

All topics that are relevant to the SPLC are also relevant to the doctoral consortium.

Submission Dates:

Submit your Ph.D. proposal: 15 June, 2008.

Notification: 20 July, 2008.

Revised Version for Distribution: 31 July, 2008

Submission

Submissions to the doctoral symposium consist of two parts: a research abstract and a letter of recommendation. Further information can be found at:

<http://www.lero.ie/SPLC2008/SubmissionGuidelinesforDoctoralSymposium.html>

Selection Process:

Submissions will be evaluated according to the relevance, originality, and feasibility of the work. For each paper at least one reviewer will be available at the symposium and there will be a unique opportunity for discussion among reviewers and participants.

Symposium Organization:

The symposium is a one-day event to be held in conjunction with SPLC 2008. Each participant gets the chance to present his/her work (either as full presentation or as short presentation) and will get feedback from the panelists and the audience. In particular, the presenters will be provided with an opportunity for direct discussions with the reviewers.

Reviewers:

Krzysztof Czarnecki University of Waterloo
Tomi Männistö Helsinki University of Technology
John McGregor Clemson University
Sooyong Park Sogang University
Klaus Schmid University of Hildesheim

Further information:

Further information can be found at:

www.sse.uni-hildesheim.de/en/splc-ds08

Page last updated: 21/07/2008



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Limerick, Ireland, 8 - 12 Sept 2008

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News

- The [13th International Software Product Line Conference \(SPLC09\)](#) will be held in San Francisco, Clifornia, USA.
- Slides of Dave Parnas's Keynote at SPLC08 are available.
- SPLC08 Finished on a very good note. The conference attracted more than 220 delegates.
- [Notes from the Agile and Product Line Engineering workshop session](#) have been posted on here.
- Registration desk will open 8:15am on Monday 8th September 2008.
- Early registration DEADLINE - 07/08/2008. Please [click here to REGISTER](#) now!
- Conference registration is **now open**. Please [click here](#) to register.
- [Conference program](#) is now available.

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Software Product Line Conference

SPLC is the premier forum for practitioners, researchers and educators to present and discuss experiences, ideas, innovations as well as concerns in the area of software product lines. SPLC 2008 will be the 12th official gathering of the product line community and will take place in Limerick, one of Ireland's top technological and educational centres. SPLC looks back on a history of a successful exchange of ideas and cooperation among product line practitioners and researchers on product line techniques, methods, and tools. This has led to innovative research ideas and successful industrial product lines. The objective of SPLC 2008 is to continue this dialogue. The technical program will feature invited talks, technical paper presentations, and panel discussions on the most relevant topics in product line engineering. In addition, we will host a number of workshops and tutorials, and will offer selected demonstrations and poster presentations. Like previous years, we will also host the SPLC [Doctoral Symposium](#) and the [Product Line Hall of Fame](#) nomination ceremony.

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Software Product Lines in Philips Healthcare: Past, Present and Future of Architecture, Culture and Organization in a Large SPL Initiative



Mr. Luc Koch

Abstract

Philips Healthcare's journey into Software Product Lines is reaching it's 10th anniversary, and thus various initiatives are becoming more articulated, understood, and valued. The talk will address a little past, a lot of present time, some future, but most of all our experiences in that period, presented in a lightweight and low-fat flavor, with remarkable observations on architecture, culture, organization, business and processes. All this will be illustrated with real life examples from our own experiences.

Bio

Mr. Luc Koch joined Philips Healthcare in 1995, after an 11 year long career in Cap Gemini where he worked as consultant and interim manager in the domain of Embedded Systems/ Software, Factory Automation and Computer Integrated Manufacturing.

Joining Philips Healthcare, he soon was chartered to set up a software reuse program across the company, which led to a successful platform for medical imaging, used in almost all products of the company. Under his leadership, this platform has evolved over time (including all aspects on architecture, organization, business and processes) from pure component based to its current SOA based future, architecture and usage.





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Multi-Dimensional Software Families: Document Defined Partitions of a Set of Products

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More than 30 years after it was first proposed that sets of closely related programs would be easier to maintain than a set of independently developed programs, the software industry is still struggling with the complex problem of making updates to collections of “almost alike” products. This talk has four themes:

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- The program family concept is more general than the idea of software product lines and can be used even with programs that do not constitute a product line.
- Full exploitation of the program family concept requires explicit design effort before code is written, not just configuration management techniques afterwards.
- Full exploitation of the program family concept requires recognition that a set of programs can (and should) be partitioned into families in many ways, not just one.
- Precise documents can be used to characterize the families and subfamilies and contribute to maintaining a well-designed set of program products.

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Bio

Professor David Lorge Parnas received his B.S., M.S. and Ph.D. in Electrical Engineering - Systems and Communications Sciences from Carnegie Mellon University and honorary doctorates from the ETH in Zurich and the Catholic University of Louvain. Dr. Parnas is a Fellow of the Royal Society of Canada and the Association for Computing Machinery (ACM) and a Member of the Royal Irish Academy. He is licensed as a Professional Engineer in Ontario.

Dave was the first winner of the Norbert Wiener Prize from Computing Professionals for Social Responsibility. He has also received the FifF prize from Forum Informatiker für Frieden und Verantwortung in Germany. He won an ACM “Best Paper” Award in 1979, two “Most Influential Paper” awards from the International Conference on Software Engineering, the 1998 ACM SIGSOFT “Outstanding Research Award”, the IEEE CS’s “Practical Visionary Award” given in honor of the late Dr. Harlan Mills, and the “Component and Object Technology” Award presented at TOOLS99.

Recently, Parnas was proud to share the IEEE Computer Society’s sixtieth anniversary award

with Professor Maurice Wilkes of Cambridge University. Parnas is the author of more than 250 papers and reports. Many of his papers have been repeatedly republished and some are considered classics. A collection of his papers can be found in: Hoffman, D.M., Weiss, D.M. (eds.), “**Software Fundamentals: Collected Papers by David L. Parnas**”, Addison-Wesley, 2001, 664 pgs., ISBN 0-201-70369-6.

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SPLC2008 / Keynotes

Mr. Luc Koch, Philips Medical Systems

Software Product Lines in Philips Healthcare: Past, Present and Future of Architecture, Culture and Organization in a Large SPL Initiative

Professor David Parnas

Multi-Dimensional Software Families: Document Defined Partitions of a Set of Products

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SPLC2008 / TutorialProductionPlanningInSPL

Production Planning in a Software Product Line Organization

Abstract

Most software product line organizations recognize the need for two roles: core asset developers and product builders. These roles may both be assumed by an individual or each may be assumed by persons who are in different administrative units, in different geographic locations, or of vastly different skill levels. For example, a corporation may have one lab assigned to produce core assets and other labs around the world to use those assets to produce products. The greater the separation among these people the greater the need for communication and coordination regarding product production.

Production planning is used in many industries to coordinate the efforts of external suppliers who supply parts and to structure the assembly line where products are produced. The need for coordination in a software product line organization is even greater than in hard goods manufacturing because product production is less constrained by physical properties or industrial standards. Our research has shown that organizations that fail to plan production are more likely to fail than those that do plan. The goal of this tutorial is to provide participants with techniques for conducting production planning.

We will cover the complete product line life cycle from adoption until a first generation of products is developed. We use a business strategy development tool, Porter's Five Forces model, to guide strategy development. We will use the Software Process Engineering Meta-model and an instantiation of it, the Eclipse Process Framework for method development and documentation. For the production plan we will use a document template that has been used with numerous clients.



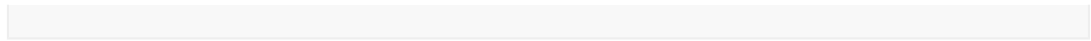
Presenter: Dr. Gary J. Chastek

Dr. Gary J. Chastek is a senior member of the technical staff at the Software Engineering Institute in the Software Product Line Initiative. He has presented tutorials and lead workshops at SPLC and OOPSLA. Dr. Chastek's current research interests include production planning, variability management, and the use of aspect-oriented development in a software product line.



Presenter: Dr. John D. McGregor

Dr. John D. McGregor is an associate professor of computer science at Clemson University, a founding partner of Luminary Software, and a Visiting Scientist at the Software Engineering Institute. He is co-author of two books on software engineering, including "A Practical Guide to Testing Object-Oriented Software Engineering." Dr. McGregor teaches graduate software engineering courses, courses in the SEI's software product line curriculum, and has presented numerous tutorials at a variety of conferences. He consults with numerous software development organizations.





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SPLC2008 / TutorialIntroductionToSPL

Introduction to Software Product Lines

Abstract

Software product lines have emerged as a new software development paradigm of great importance. A software product line is a set of software intensive systems sharing a common, managed set of features, and that are developed in a disciplined fashion using a common set of core assets. Organizations developing a portfolio of products as a software product line are experiencing order-of-magnitude improvements in cost, time to market, staff productivity, and quality of the deployed products.

This tutorial introduces the essential activities and underlying practice areas of software product line development. It is aimed at those in an organization who are in a position to influence the decision to adopt a product line approach, and those in a position to carry out that decision. Anyone who can act as a technology change agent will benefit from this tutorial. The tutorial reviews the basic concepts of software product lines, discusses the costs and benefits of product line adoption, introduces the SEI's Framework for Software Product Line Practice, and describes approaches to applying the practices of the framework.



Presenter: Patrick Donohoe

Patrick Donohoe is a Senior Member of the Technical Staff at the Software Engineering Institute, working in the Product Line Systems Program. His current interests are analysis modeling and production planning for software product lines. He has participated in several product line technical probes and architecture evaluations and is also an instructor in the SEI's Software Product Line Curriculum.

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Abstract

This tutorial describes a phased, pattern-based approach to software product line adoption. It will acquaint participants with product line adoption barriers and two ways to overcome them:

1. a phased, pattern-based adoption approach
2. explicit linkage with other improvement efforts

The objectives of the tutorial are to acquaint participants with

- issues surrounding software product line adoption
- a phased, pattern-based adoption approach
- adoption planning artifacts
- explicit linkage of software product line adoption with other improvement efforts

The tutorial begins with a discussion of software product line adoption issues, including benefits, barriers, risks and the technical and organizational factors that influence adoption. We then present a roadmap for phased, product line adoption. The roadmap is built from product line practice patterns and detailed by focus areas, phases, related practice areas, outputs, and roles. Examples of product line adoption plans following the road map are used to illustrate its utility. The tutorial also describes strategies for creating synergy within an organization between product line adoption and ongoing CMMI or other improvement initiatives.

Participants should have experience in designing and developing software-intensive systems, some familiarity with modern software engineering concepts and management practices, and be familiar with product line concepts. The tutorial is aimed at those in an organization who are in a position to influence the decision to adopt a product line approach, and those in a position to carry out that decision. This includes technical managers at all levels, as well as those on the software development staff. Anyone who can act as a technology change agent will benefit from this tutorial.



Presenters:

Linda Northrop is director of the Product Line Systems Program at the SEI where she leads the work in software architecture, software product lines, and predictable software construction. Under her leadership, the SEI has developed software architecture and product line methods that are used worldwide, a series of five highly acclaimed books, and software architecture and software product line curricula. She is coauthor of *Software Product Lines: Practices and Patterns*. She recently led a year long study including leaders in the software community to define technical and social challenges to the creation of ultra-large-scale systems that will evolve in the next generation. The group published the study report, *Ultra-Large-Scale Systems: The Software Challenge of the Future* (ISBN 0-9786956-0-7).

Dr. Lawrence G. Jones is a Senior Member of the Technical Staff in the Product Line Systems Program at the Software Engineering Institute (SEI) of Carnegie Mellon University with over 38 years experience in software development, management and education. Before joining the SEI, Larry served a career in the US Air Force and is the former Chair of the Computer Science Department at the Air Force Academy. Larry is the immediate Past Chair of the ABET Computing Accreditation Commission, is a Senior Member of the IEEE, and is also Secretary/Treasurer of the Computing Sciences Accreditation Board.



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SPLC2008 / TutorialLeveragingMDEinSPLA

Leveraging Model Driven Engineering in Software Product Line Architectures

Abstract

Model Driven Engineering (MDE) is a new innovation in the software industry that has proven to work synergistically with Software Product Line Architectures. It can provide the tools necessary to fully harness the power of Software Product Lines. The major players in the software industry including commercial companies such as IBM, Microsoft, standards bodies including the Object Management Group and leading Universities such as the ISIS group at Vanderbilt University are embracing this MDE/PLA combination fully. IBM is spearheading the Eclipse Foundation including its MDE tools like EMF, GEF and GMF. Microsoft has launched there Software Factories foray into the MDE space.

The goal of this tutorial is to educate attendees on what MDE technologies are, how exactly they relate synergistically to Product Line Architectures, and how to actually apply them using an existing Eclipse implementation.

The process of Developing Software Product Line Architectures can be a complex task. However, the use of Model Driven Engineering (MDE) techniques can facilitate the development of SPLAs by introducing Domain Specific Languages, Graphical Editors, and Generators. Together these are considered the sacred triad of MDE. Key to understanding MDE and how it fits into SPLAs is to know exactly what each part of the trinity means, how it relates to the other parts, and what the various implementations are for each. This tutorial will demonstrate the use of the Eclipse Modeling Framework (EMF) and Eclipse's Graphical Editor Framework (GEF) to create an actual MDE solution as applied to a sample SPLA. When building Graphical Modeling Languages using GEF and EMF one may find themselves worrying about specific implementation details related to EMF or GEF. To address this issue, the Eclipse community has created a generative bridge between EMF and GEF called The Graphical Modeling Framework (GMF). During this tutorial we will also illustrate how to model the visual artifacts of our Domain Model and generate a Domain Specific Graphical Editor using GMF.



Presenter: Bruce Trask

Bruce Trask has been working on complex Distributed Real-Time Embedded systems for over 20 years specializing in SPL and MDE as applied to these systems in the last 7 years. He has been teaching C++, Object Orientation, Design Patterns, UML, CORBA and Framework courses for over 10 years. He has lead multiple study groups in the New York, New Jersey, Connecticut area on various topics ranging from design patterns to middleware. He is a regular speaker/presenter at software industry conferences all year long. He has delivered tutorials at the OMG. Bruce Trask is the CEO of MDE Systems.



Presenter: Angel Roman

Angel Roman is the Chief Software Architect of MDE Systems and an expert on the Eclipse Development environment and its application frameworks. He has presented at various industry conferences on topics such as Software Defined Radios and MDE Technologies.



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Tool Demos 1: Tuesday, 9 September 2008

Jump-Starting Software Product Lines with Clone Detection

Andrew Mark Dalgarno, Software Acumen Limited

A basic, if highly inefficient mechanism for realizing a new software variant is to copy-and-paste, or clone, all or part of the organization's existing code base and then modify the cloned code to satisfy the requirements of the new variant. For many organizations, unaware of research and practical experience in the area of software product lines, this is a natural way to realize multiple software variants.

In this demonstration, we'll show how the systematic detection of clones can help organisations in the above position to migrate to a software product line approach by highlighting identical and near-identical code fragments from which the core, reusable assets of the product line can be built.

Clone detection also has a role to play in the on-going maintenance and evolution of the product line. Active clone detection, as part of a continuous integration process, can be used to identify new clones that have been introduced by application development teams. These new clones can indicate the need to support additional variability in the platform.

This introductory-level demonstration introduces clone detection and places it in a product line context.

Solving Requirements Management Challenges in Product Line Development

Martin Sarabura, Paul Bowden, MKS Inc

Requirements Management (RM) tools for software product lines have special requirements that until now have not been satisfied by existing tools. MKS Integrity for

Requirements Management is a new product that satisfies all the major criteria for requirements management in Software Product Lines. It is an enterprise-scale product that allows analysts to efficiently share requirements amongst different documents and projects without compromising artifact traceability.

A Tool Chain for Quality-driven Software Architecting

Antti Evesti, Eila Niemelä, Katja Henttonen and Marko Palviainen, VTT

Tool Demos 2: Wednesday, 10 September 2008

Modeling and Building Software Product Lines with pure::variants

Danilo Beuche, pure-systems GmbH

The demonstration shows how flexible product line architectures can be build by using the modeling capabilities provided by pure::variants, a commercial tool for software product line development. The pure::variants approach supports handling of variability in all steps of SPLD from requirements analysis to product generation. Extended feature models are used for modeling of problem domain. Flexible family models are used to represent the variable architecture of product line solution domains.

FLiP: Managing Software Product Line Extraction and Reaction with Aspects

Vander Alves, Fraunhofer IESE

Fernando Calheiros, Vilmar Nepomuceno, Andrea Menezes, Meantime Mobile Creations

Sérgio Soares, Department of Computing and Systems - UPE

Paulo Borba, Informatics Center - UFPE

With the growing academic and industrial interest in Software Product Lines, one area demanding special attention is tool support development, which is a pre-requisite for widespread software product lines practices adoption. In this demo, we present a suite of tools consisted of 3 modules: FLiPEx, FLiPG and FLiPC. FLiPEx is a refactoring tool that implements code transformations for extracting product variations from Java classes to AspectJ aspects. FLiPEx interacts with FLiPG, which integrates with Feature Model tool for updating a software product lines feature model accordingly to code transformations, which, for example, might turn mandatory into optional features. FLiPG interacts with the FLiPC tool that is responsible for using the information stored in FLiPG to build the final products. FLiP has been designed and tested in the context of real mobile game software product lines.

Integrating Models and Aspects into Product Line Engineering

Iris Groher, Johannes Kepler University

Markus Voelter, Independent Consultant

Christa Schwanninger, Siemens AG, CT SE 2

This demonstration presents an approach that facilitates variability implementation, management, and tracing from architectural modeling to implementation. A tool suite is provided that integrates aspect-oriented and model-driven software development into product line engineering.

DSML for developing repository-based Eclipse plug-ins

Sanna Sivonen, VTT

Eclipse is a popular open source platform which can be extended by its users by writing plug-ins. Developing Eclipse plug-ins manually can be time-consuming and challenging

since it requires Java programming skills and knowledge about the various extension points provided by the Eclipse platform. Domain-specific modelling (DSM) uses domain-specific modelling languages (DSMLs) instead of general-purpose modelling languages. DSM enables full code generation since the modelling language and the code generator are built for a narrow domain. This paper presents a successful case of utilising DSM: DSML for developing repository-based Eclipse plug-ins. DSML is demonstrated with two case examples: Stylebase for Eclipse architectural knowledge management tool and an image database.

Tool Demos 3: Thursday, 11 September 2008

EASy-Producer – A Product Line Production Environment

Holger Eichelberger, Klaus Schmid, University of Hildesheim

In this paper, we describe EASy-producer, a prototypical production environment for software product lines (SPL), in particular for the realization of adaptive systems and dynamic SPL.

The BigLever Software Gears Unified Software Product Line Engineering Framework

Charles W. Krueger, BigLever Software

BigLever Software's Unified Software Product Line Engineering (SPLE) Framework enables the integration of tools, assets and processes across the full system and software product line development lifecycle. The Gears framework offers a simple and elegant integrated software product line solution – for requirements engineers, architects, modelers, developers, build engineers, document writers, configuration managers, test engineers and project managers.

FAMA Framework

Pablo Trinidad, David Benavides, Antonio Ruiz-Cortés, Sergio Segura, Alberto Jimenez, University of Seville

FAMA Framework (FAMA FW) is a tool for the automated analysis of variability models (VM). Its main objective is providing an extensible framework where current research on VM automated analysis might be developed and easily integrated into a final product. FAMA FW is built following the SPL paradigm supporting different variability metamodels, reasoners or solvers, analysis questions and reasoner selectors, easing the production of customized VM analysis tools. FAMA FW is written in Java and distributed under LGPL License.





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SPLC2008 / TutorialEvolutionaryProductLineRE

Evolutionary Product Line Requirements Engineering

Abstract

The systematic identification and description of commonalities, variabilities, and volatilities is a critical step for achieving successful reuse in the development of a product line. Thus, the adequate selection or extension of requirements engineering methods for product lines can be regarded as a key factor for success when introducing the product line approach in a company. This tutorial will cover the following topics:

- The importance of product line scoping, analysis, and modeling for successful product line engineering
- Key principles of scoping (e.g., common and variable features, domains, products) and PuLSE-Eco
- Key principles of product line analysis and modeling (e.g., commonality and variability, decision modeling, domain analysis and application analysis, and traceability to all interrelated phases)
- An overview of product line analysis and modeling approaches
- Extension of existing requirements engineering approaches with the PuLSE-CDA approach
- Key concepts for predicting future adaptation needs and thus, likely changes in product lines
- Integrated and early evolution planning in Product Line Engineering

With these topics, we completely cover the early phases of Product Line Engineering, enabling practitioners to start using product lines on a solid basis. The intended audience includes practitioners who want to learn how to carry out these early phases successfully, as well as researchers who want to know more about an integrated approach for product line scoping, analysis, and planning for future evolution.



Presenter: Isabel John

is a researcher and project leader at Fraunhofer IESE. She is responsible for product line introduction projects in industrial contexts and performs product line technology transfer to software developing companies. For almost 10 years, she has been working in research and industrial projects in the context of software product lines, scoping, and product line requirements engineering. Her work focuses on product line analysis, scoping, and information retrieval for product lines. She has given several presentations and tutorials on product line engineering at software engineering conferences and in industrial contexts. She received her M.Sc. degree in Computer Science from the University of Kaiserslautern.



Presenter: Karina Villela

is a lecturer and researcher at the University of Salvador in Brazil, where she also worked closely to several software companies. She defined and adapted software processes related to many process areas to various companies' specific needs and also provided consultancy for their implementation. She is currently at Fraunhofer IESE as an

Alexander von Humboldt fellow. There, she has been working on product line requirements engineering with the goal of improving the ability of product lines to evolve over time. In this context, she has defined a method for proactively managing the evolving scope of a product line. She received her M.Sc. and PhD degrees in Computer Science from the Federal University of Rio de Janeiro, Brazil.

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Pragmatic Methods for Commercial Software Product Line Engineering Practice

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The current generation of software product line (SPL) engineering success stories is being driven by a new generation of methods, tools and techniques. In this tutorial, we explore the latest in the ongoing evolution of SPL best practices that make it easier to adopt an SPL engineering approach and that make it more efficient to achieve optimal benefits over the long term.

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The goal of the tutorial is to enable attendees to gain a better and simpler understanding of SPL concepts and practice, based on the latest experiences and advances in the *3-Tiered SPL Methodology* and the *Unified SPL Lifecycle Framework*. These pragmatic SPL concepts represent current advances in SPL practice and are based on observations and firsthand experiences during deployments and operation of the latest generation of successful commercial SPL practices, including Lockheed Martin and HomeAway, as well as highly acclaimed Software Product Line Hall of Fame inductees Salion and LSI Logic/Engenio. The 3-Tiered SPL Methodology and Unified SPL Lifecycle Framework have supported full scale operational transitions to software product line practice, involving hundreds of software engineers, millions of lines of source code and requirements, and billions of dollars in commercial product lines.

The target audience for this tutorial is (1) practitioners from industry settings who are interested in the most efficient, effective and proven methods for transitioning to and sustaining software product line practice, and (2) members of the research community who are interested in the new methods emerging from proven industry successes. The tutorial is suitable for all levels, ranging from SPL novices who want to learn how SPL engineering is an improvement over conventional approaches, to experienced SPL practitioners who want to learn about new advances in SPL best practices.

Attendees will learn very advanced and yet very practical concepts in the 3-Tiered SPL Methodology and the Unified SPL Lifecycle Framework that are yielding order-of-magnitude improvements in time-to-market, engineering cost, product quality, and portfolio scalability. It features best practices including minimally-invasive and agile strategies, reactive product and core asset scoping, software mass customization sans application engineering, bounded product line combinatorics, model-driven and aspect-oriented integrations with SPL, and technology integration framework for end-to-end software product line lifecycle management.

The case studies and demonstrations featured in the tutorial will provide pragmatic insights into how the latest generation of pragmatic methods, tools and techniques are enabling companies of all types and sizes to realize a new level of benefits, in terms of both technical and business impact. While these new success stories exhibit the 10x engineering improvements we have come to expect from the earlier generation, what is most unexpected is that they require up to 100x less time, cost and effort to make the transition to product line practice and to achieve return on investment.



Presenter: Charles W. Krueger

Bio:

Charles Krueger, PhD, is the founder and CEO of BigLever Software, the leading provider of software product line development tools and services. He is a thought leader in the software product line development field, with 20 years of experience in software development practice. He has proven expertise in leading commercial software product line development teams, and helping companies establish some of the industry's most highly acclaimed software product line practices, including Salion, 2004 Software Product Line Hall of Fame inductee, and LSI Logic, 2006 Software Product Line Hall of Fame inductee. He received his PhD in computer science from Carnegie Mellon University.



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Transforming Legacy Systems into Software Product Lines

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Often organizations face the problem that after a while their software system is deployed in several variants and the need arises to migrate to systematic variability and variant management using a software product line approach.

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In practice most organizations can not afford to start a software product line development from scratch and therefore have to use as much existing software assets as possible. Discussion of (successful) transition techniques thus helps those organizations to decide for adoption of a software product line approach. Since the software product line development is still in a phase where widespread use has not been achieved the tutorial tries to help attendees to increase the number of SPL in the industry.

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The tutorial will discuss issues coming up during this migration process mainly on the technical level, but also discusses some of the organizational questions. The goal of the tutorial is to give attendees an initial idea how a transition into a software product line development process could be done with respect to the technical transition.

- Sponsorship

The tutorial starts with a brief introduction into software product line concepts, discussing terms such as problem and solution space, feature models, versions vs. variants. Tutorial topics are how to choose adequate problem space modeling, the mining of problem space variability from existing artifacts such as requirements documents and software architecture. Also part of the discussion will be the need for separation of problem space from solution space and ways to realize it. A substantial part of the tutorial will be dedicated to variability detection and refactoring in the solution space of legacy systems.

- Registration

The intended audience is practitioners from industry (software product line novice to intermediate). Attendees should have a basic understanding software design; some knowledge about software product lines in general is helpful but not required.



Presenter: Dr. Danilo Beuche

Danilo is the CEO of pure-systems GmbH. pure-systems is a software company specialized in services and tool development for the application of product line technologies in embedded software systems. When he joined the GMD First (now Fraunhofer FIRST) in 1995, he started to work in the field of embedded operating systems and software families and continued at the University Magdeburg, where he also received his PhD in this area. His work on tool support for feature based software development finally lead to the founding of pure-systems in 2001. At pure-systems he works also as consultant in the area of product line development mainly for clients from the automotive industry.

He has been tutorial presenter, speaker, workshop organizer and panelist at conferences such as AOSD, ISORC, SPLC and OOPSLA. He is also author of articles in scientific journals and software developer magazines.

During his university career and also to a limited degree later on he has been teaching students as tutor, teaching assistant and lecturer in the areas of operating system development and software engineering.

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Monday, 8 September 2008

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W2- <u>Aspect-Oriented Requirements and Architecture for Product Lines</u>	9:00 - 12:30	T1: <u>Production Planning in Software Product Line Organization</u> T2: <u>Introduction to Software Product Lines</u>
W3- <u>Service-Oriented Architectures and Software Product Lines</u>	Lunch	
W4- <u>Software Product Line Testing</u>	14:00 - 17:30	T3: <u>Introduction to Software Product Line Adoption</u> T4: <u>Leveraging MDE in Software Product Line Architectures</u>

Tuesday, 9 September 2008

9:00 - 9:30	Introduction
9:30 - 10:30	Keynote: Professor David Parnas
10:30 - 11:00	Coffee

11:00 - 12:30	<p>Research Papers: <u>Feature Models</u> Session chair: <i>Patrick Heymans</i></p> <p>Feature Relation and Dependency Management: An Aspect-Oriented Approach <i>Cho, Lee, Kang</i></p> <p>Using Feature diagrams with Context Variability to model Multiple Product Lines for Software Supply Chains <i>Hartmann, Trew</i></p> <p>Sample Spaces and Feature Models: There and Back Again <i>Czarnecki, She, Wąsowski</i></p>	<p>Experience Reports: <u>Staying the Course: Maintaining the Product Line</u> Session chair: <i>Juha Savolainen</i></p> <p>Experiences of Large Banks: Hurdles and enablers to the adoption of Software Product Line Practices in large corporate organisations <i>Krsek, van Zyl, Redpath, Clohesy</i></p> <p>Model-based Design of Product Line Components in the Automotive Domain <i>Muthig, Forster, Pech</i></p> <p>Providing Feedback from Application to Family Engineering - The Product Line Planning Game at the Testo AG <i>Carbon, Knodel, Muthig, Meier</i></p>
12:30 - 14:00	Lunch	
14:00 - 15:30	<p>Research Papers: <u>Empirical Discovery of Product Lines</u> Session chair: <i>Stuart Faulk</i></p> <p>An Exploratory Study of Information Retrieval Techniques in Domain Analysis <i>Alves, Schwanninger, Barbosa, Rashid, Sawyer, Rayson, Pohl, Rummler</i></p>	<p><u>Panel 1: Product Line Scoping in Practice</u></p> <p>Mark Dalgarno</p>

	<p>Visual Tool Support for Configuring and Understanding Software Product Lines <i>Botterweck, Thiel, Nestor, Bin Abid</i></p> <p>On-Demand Cluster Analysis for Product Line Functional Requirements <i>Niu, Easterbrook</i></p>	
15:30 - 16:00	Coffee	
16:00 - 17:30	<p>Research Papers: <u>Extending Variability Management</u> Session chair: <i>Frank van der Linden</i></p> <p>Identifying and exploiting the similarities between rationale management and variability management <i>Thurimella, Bruegge, Creighton</i></p> <p>Renewing the Product Line Vision <i>Campbell</i></p> <p>Applying Software Product Lines to Build Autonomic Pervasive Systems <i>Cetina, Fons, Pelechano</i></p>	<p><u>Tool Demos 1</u></p> <p>Session chair: M. Ali Babar</p> <p>Jump-Starting Software Product Lines with Clone Detection <i>Andrew Mark Dalgarno, Software Acumen Limited</i></p> <p>Solving Requirements Management Challenges in Product Line Development <i>Martin Sarabura, Paul Bowden, MKS Inc</i></p> <p>A Tool Chain for Quality-driven Software Architecting <i>Antti Evesti, Eila Niemelä, Katja Henttonen and Marko Palviainen, VTT</i></p>
19:30 - 22:00	<p>Reception Venue: Dolans Pub</p>	

Wednesday , 10 September 2008

9:30 - 10:30	Keynote: Mr. Luc Koch	
10:30 - 11:00	Coffee	
11:00 - 12:30	<p>Research Papers: <u>DSL and Code Generation</u> Session chair: <i>Peter Knauber</i></p> <p>Decision-Model-Based Code Generation for SPLE <i>Weiss, Li, Slye, Dinh-Trong, Sun</i></p> <p>Adding Standardized Variability to Domain Specific Languages <i>Haugen, Møller-Pedersen, Olsen, Svendsen, Oldevik</i></p> <p>Automatic Domain-Specific Modeling Languages for Generating Framework-Based Applications <i>Santos, Koskimies, Lopes</i></p>	<p>Experience Report: <u>Verification and Practice</u> Session chair: <i>Dirk Muthig</i></p> <p>Enabling Verifiable Conformance for Product Lines <i>Lutz</i></p> <p>A Software Product Line Definition for Validation Environments <i>Magro, Garbajosa, Perez</i></p> <p>Variability Modelling Challenges from the Trenches of an Open Source Product Line Re-Engineering Project <i>Hubaux, Heymans, Benavides</i></p>
12:30 - 14:00	Lunch	

14:00 - 15:30	<p>Research Papers: <u>Formal Modeling and Verification</u> Session chair: <i>Oystein Haugen</i></p> <p>Formal Modeling for Product Families Engineering <i>Fantechi, Gnesi</i></p> <p>Calculating and Modeling Common Parts of Software Product Lines <i>Gruler, Leucker, Scheidemann</i></p> <p>Aspect-oriented Modeling for Variability Management <i>Noda, Kishi</i></p>	<p><u>Panel 2: Agile and PLE</u></p> <p>John D. McGregor</p>
15:30 - 16:00	Coffee	
16:00 - 17:30	<p>Research Papers: <u>Product-Line Quality</u> Session chair: <i>Tim Trew</i></p> <p>Automated Diagnosis of Product-line Configuration Errors in Feature Models <i>White, Benavides, Schmidt, Trinidad, Ruiz-Cortés</i></p> <p>Evaluating Flexibility in Embedded Automotive Product Lines Using Real Options <i>Gustavsson, Axelsson</i></p> <p>Variability Driven Quality Evaluation in Software Product Lines <i>Etxeberria, Sagardui</i></p>	

16:00 - 18:00	<p style="text-align: center;"><u>Tool Demos 2</u></p> <p style="text-align: center;">Session chair: M. Ali Babar</p> <p style="text-align: center;">Modeling and Building Software Product Lines with pure::variants <i>Danilo Beuche, pure-systems GmbH</i></p> <p style="text-align: center;">FLiP: Managing Software Product Line Extraction and Reaction with Aspects <i>Vander Alves, Fraunhofer IESE</i> <i>Fernando Calheiros, Vilmar Nepomuceno, Andrea Menezes, Meantime Mobile Creations</i> <i>Sérgio Soares, Department of Computing and Systems - UPE</i> <i>Paulo Borba, Informatics Center - UFPE</i></p> <p style="text-align: center;">Integrating Models and Aspects into Product Line Engineering <i>Iris Groher, Johannes Kepler University</i> <i>Markus Voelter, Independent Consultant</i> <i>Christa Schwanninger, Siemens AG, CT SE 2</i></p> <p style="text-align: center;">DSML for developing repository-based Eclipse plug-ins <i>Sanna Sivonen, VTT</i></p>
19:00 - 22:30	<p style="text-align: center;">Social Event</p> <p style="text-align: center;">Bus departure: 19:00</p>

Thursday , 11 September 2008	
9:30 - 10:30	<p style="text-align: center;"><u>Panel 3: Catalysts and Inhibitors for Momentum in the Software Product Line Industry</u></p> <p style="text-align: center;"><i>Charlie Krueger</i></p>
10:30 - 11:00	Coffee

11:00 - 12:30	<p>Research Papers: <u>Service-Oriented Product Lines</u> Session chair: <i>Steffen Thiel</i></p> <p>Service-oriented Commonality Analysis Across Existing Systems <i>Hartmann, Harhurin</i></p> <p>A Product Line for Business Process Management <i>Fantinato, Gimenes, Toledo</i></p> <p>An Approach for Developing Service-Oriented Product Lines <i>Lee, Muthig, Naab</i></p>	<p>Experience Reports: <u>Examples of Product Lines</u> Session chair: <i>Isabel John</i></p> <p>Experiences with Mobile Games Product Line Development at Meantime <i>Alves, Camara, Alves</i></p> <p>HomeAway's Transition to Software Product Line Practice: Engineering and Business Results in 60 Days <i>Krueger, Churchett, Buhrdorf</i></p> <p>Building a Family of Compilers <i>Chae, Blume</i></p>
12:30 - 14:00	Lunch	
14:00 - 15:30	<p>Research Papers: <u>Model-based Development</u> Session chair: <i>Tomoji Kishi</i></p> <p>Supporting Evolution in Model- based Product Line Engineering <i>Dhungana, Neumayer, Gruenbacher, Rabiser</i></p> <p>Transformation Patterns for Multi- staged Model Driven Software Development <i>Braganca, Machado</i></p>	<p><u>Tool Demos 3</u> Session chair: M. Ali Babar</p> <p>EASy-Producer – A Product Line Production Environment <i>Holger Eichelberger, Klaus Schmid, University of Hildesheim</i></p> <p>The BigLever Software Gears Unified SPLE Framework <i>Charles W. Krueger, BigLever Software</i></p>

	Reconciling Automation and Flexibility in Product Derivation <i>Perrouin, Klein, Guelfi, Jézéquel</i>	FAMA Framework <i>Pablo Trinidad, David Benavides, Antonio Ruiz-Cortés, Sergio Segura, Alberto Jimenez, University of Seville</i>
15:30 - 16:00	Coffee	
16:00 - 17:30	Hall of Fame <i>Session chair: David Weiss</i> <i>A hall of fame serves as a way to recognize distinguished members of a community in a field of endeavor. Those elected to membership in a hall of fame represent the highest achievement in their field, serving as models of what can be achieved and how. Each Software Product Line Conference culminates with a session in which members of the audience nominate systems for induction into the Software Product Line Hall of Fame.</i>	

Friday, 12 September 2008		
Workshops	Doctoral Symposium	Tutorials
W5- <u>Analyses of Software Product Lines</u> W6- <u>Management and Economics of Software Product Lines</u> W7- <u>Visualisation in Software Product Line Engineering</u>	9:00 - 12:30 Towards a Crosscutting Approach for Variability Management <i>Rodrigo Bonifacio, Paulo Borba</i> Towards an Efficient Reuse of Test Cases for Software Product Lines <i>Andreas Wübbcke</i> Improving the Production Capability of Product Line Organizations <i>Ralf Carbon</i> An Iterative Model for Agile Product Line Engineering	<div> 9:00 - 12:30 <div> T5: <u>Evolutionary Product Line Requirements Engineering</u> </div> <div> T6: <u>Pragmatic Methods for Commercial Software Product Line Engineering Practice</u> </div> </div> Lunch

	<i>Yaser Ghanam, Frank Maurer</i>	14:00 - 17:30	T7: <u>Transforming Legacy Systems into Software Product Lines</u>
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Klaus Pohl, *Univ. of Duisburg-Essen, Germany & Lero, Univ. of Limerick, Ireland*

Klaus (dot) Pohl (at) sse (dot) uni-due (dot) de

Birgit Geppert, *Avaya Labs, USA*

bgeppert (at) research (dot) avayalabs (dot) com

Program Chair:

Local Arrangements Chair:

Muhammad Ali Babar, *Lero, University of Limerick, Ireland*

Muhammad (dot) AliBabar (at) lero (dot) ie

Demonstration & Poster Chair:

Juha-Pekka Tolvanen, *Meta Case, Finland*

jpt (at) metacase (dot) com

Doctoral Symposium Chair:

Klaus Schmid, *University of Hildesheim, Germany*

schmid (at) sse (dot) uni-hildesheim (dot) de

Panel Chair:

Paul Clements, *Software Engineering, USA*

clements (at) sei (dot) cmu (dot) edu

Product Line Hall of Fame Chair:

David M. Weiss, *Avaya, USA*

weiss (at) avaya (dot) com

Tutorial Chair:

Frank van der Linden, *Philips, Netherlands*

Frank (dot) Van (dot) Der (dot) Linden (at) philips (dot) com

Workshop Chair:

Steffen Thiel, *Lero, University of Limerick, Ireland*

Steffen (dot) Thiel (at) lero (dot) ie

Financial Chair:

Susan Mitchell, *Lero, University of Limerick, Ireland*

Susan (dot) Mitchell (at) lero (dot) ie

Publicity Chair:

Muhammad Ali Babar, *Lero, University of Limerick, Ireland*

Muhammad (dot) AliBabar (at) lero (dot) ie

Local Organization Support:

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MESPUL08 / Introduction

The Second International Workshop on Management and Economics of Software Product Lines (MESPUL08)

The Workshop on Value-Base Product Line Engineering

collocated with the

12th International Software Product Line Conference (SPLC 2008)

September 8-14, Limerick, Ireland

Product line engineering has recently emerged as a viable and important software development paradigm. Many companies have been adopting product line approach in order to improve the efficiency of their development processes, to increase the quality of end product, and reduce time-to-market and cost. Researchers and practitioners have proposed several methods, techniques, and tools to support the technical aspects of software product line engineering. Research has also been reported on different mechanics of calculating ROI, understanding Cost-Benefits, and critical factors in adopting software product lines. However, the body of knowledge on the management and economics aspects of software product lines is very thin. Adoptions and management of software product lines require significant initial investment that is expected to maximize the business value. In addition, managing a product line project is far complex and difficult because of the inter-related structure between core assets and products, multiple deadlines, resource allocation, etc. Software product line practitioners need new approaches, models, and tools for addressing various challenges related to the management and economics of software product lines to be able to maximize the business value of adopting product line approach. Moreover, there is need for gathering and using empirical evidence to support different approaches of software product lines.

The first international workshop on management and economics of software product lines aims to bring together researchers and practitioners from academia, industry and governments to report and discuss the challenges and opportunities of adopting and managing software product lines from managerial, organizational, and economics point of view. The workshop will provide a forum to present ideas about using existing management and organizational strategies and economic models to support software product lines and/or propose new approaches, techniques, and tools for business and technical manager to maximize the business value of software product line engineering. The workshop will cover the broad spectrum of research papers, experience reports, and position papers relevant to the economic, management, organizational aspects of software product line engineering.



ViSPLE 2008

2nd International Workshop on Visualisation in Software Product Line Engineering
September 12, 2008, Limerick, Ireland

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ViSPLE2008 / Introduction

2nd International Workshop on Visualisation in Software Product Line Engineering (ViSPLE 2008)

collocated with the

12th International Software Product Line Conference (SPLC 2008)

September 8 - 12, 2008, Limerick, Ireland

Product line engineering has rapidly emerged as a viable and important software development activity during the last few years. Many companies use a product line approach so as to be able to build different variants of their products for use within a variety of systems. As the size of product lines is usually large, they could easily incorporate thousands of variation points and configuration parameters. This makes product line management and systematic product derivation extremely difficult.

This workshop aims at elaborating on the idea of using visualisation techniques to achieve the economies of scale required to support variability management and product derivation in industrial product lines. Visualisation techniques have been proven effective to improve both the human understanding and effective use of computer software. They have also been used to amplify the cognition about large and complex data sets. The exploration of the potential of visual representations such as trees and graphs combined with the effective use of human interaction techniques such as dynamic queries, direct manipulation, and details-on-demand when applied in a software product line context is a novel and challenging research direction in software product line engineering.

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SPLC2008 / Workshops

The workshop program provides a platform for bringing together people from industry, academia, and research institutions to present and discuss experiences and practices in the area of software product line development.

The following full-day workshops will be held in conjunction with SPLC 2008:

Monday, September 8, 2008

- [W1 2nd International Workshop on Dynamic Software Product Lines \(DSPL 2008\)](#)
- [W2 Workshop on Early Aspects: Aspect-Oriented Requirements and Architecture for Product Lines \(EA@SPLC 2008\)](#)
- [W3 Workshop on Service-Oriented Architectures and Software Product Lines - Putting Both Together \(SOAPL 2008\)](#)
- [W4 5th Software Product Lines Testing Workshop \(SPLiT 2008\)](#)

Friday, September 12, 2008

- [W5 Workshop on Analyses of Software Product Lines \(ASPL 2008\)](#)
- [W6 2nd International Workshop on Management and Economics of Software Product Lines \(MESPUL 2008\)](#)
- [W7 Workshop on Open Source Software and Product Lines \(OSSPL 2008\)](#) - **Cancelled**
- [W8 2nd International Workshop on Visualisation in Software Product Line Engineering \(ViSPLE 2008\)](#)

W1: 2nd International Workshop on Dynamic Software Product Lines (DSPL 2008)

Organisers

Svein Hallsteinsen, SINTEF, Norway
 Mike Hinchey, Lero, University of Limerick, Ireland
 Sooyong Park, Sogang University, South Korea
 Klaus Schmid, University of Hildesheim, Germany

Description

In domains such as ubiquitous computing, pervasive computing, service robots, unmanned aerial vehicles, etc., the importance and complexity of software are increasing more than ever. These domains are characterized above all by extensive variation both in requirements and resource constraints. The Software Product Line (SPL) approach has been receiving increased attention as a means to cope with this, specifically as software engineers and developers are faced with increasing pressure to deliver high-quality software more quickly and economically.

More importantly, modern computing and network environments demand a high degree of adaptability from software systems. Computing environments, user requirements and interface mechanisms between software and hardware devices like sensors may change dynamically during run-time. Therefore, in these kinds of dynamic environments, application of SPL needs to be changed from a static perspective to a dynamic perspective, where systems capable of modifying their own behavior with respect to changes in its operating environment are achieved by dynamically rebinding variation points at runtime. This is the idea of Dynamic Software Product Lines (DSPL).

Dynamic Software Product Lines is an emerging, and promising, area of research, with clear overlaps to other areas of research in addition to SPL, notably: Self-* (adapting, managing, healing, ...) systems, dynamic architectures and Agent-Oriented Software Engineering. The objective of this workshop is to solicit ideas, research directions, and results of SPL that employs and supports dynamism in the manner outlined above.

Important Dates

Submission Deadline: ~~June 29, 2008~~ **July 6, 2008 (extended)**

Notifications to Authors: July 20, 2008

Camera-ready Papers: August 3, 2008

Main Contact

Svein Hallsteinsen, SINTEF, Norway
svein (dot) hallsteinsen (at) sintef (dot) no

Workshop Homepage

<http://selab.sogang.ac.kr/dspl08/>

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W2: Workshop on Early Aspects: Aspect-Oriented Requirements and Architecture for Product Lines (EA@SPLC 2008)

Organisers

Vander Alves, Fraunhofer IESE, Germany
Christa Schwanninger, Siemens AG, Germany
Paul Clements, Software Engineering Institute, USA
Awais Rashid, Lancaster University, UK
Ana Moreira, New University of Lisbon, Portugal

João Araújo, New University of Lisbon, Portugal
 Elisa Baniassad, Chinese University of Hong Kong, Hong Kong
 Bedir Tekinerdogan, University of Twente, The Netherlands

Description

Early aspects deal with crosscutting concerns in requirements analysis, domain analysis and architecture design. Work on early aspects focuses on systematically identifying, modularizing, and analyzing such crosscutting concerns and their impact at the early phases of the software development life cycle.

The effectiveness of a software product line approach directly depends on how well feature variability within the portfolio is managed from early analysis to implementation and through maintenance and evolution. Variability of features often has widespread impact on multiple artefacts in multiple lifecycle stages, making it a pre-dominant engineering challenge in Software Product Line Engineering (SPLE). What is strongly needed in SPLE is an improved modularization of variations, their holistic treatment across the software lifecycle and advanced maintenance of their (forward and backward) traceability.

Accordingly, this workshop focuses on the application of aspect-oriented requirements engineering and architecture design in identifying and managing variability across a product line. Topics of interest include, but are not limited to, concepts, methods and tools for early aspects in domain analysis and domain architecture design, and the potential of early aspects for improved traceability, impact analysis, and application engineering.

The main goal of this workshop is to bring together researchers and practitioners from the product line and the early aspects communities in order to discuss the latest achievements and future challenges of the applicability of early aspects in the context product lines.

Important Dates

Submission Deadline: July 1, 2008
 Notification of Acceptance: July 21, 2008
 Camera-ready Papers: August 4, 2008

Main Contact

Vander Alves, Fraunhofer IESE, Germany
 vander (dot) alves (at) iese (dot) fraunhofer (dot) de

Workshop Homepage

<http://ea08splc.iese.fraunhofer.de/>

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W3: Workshop on Service-Oriented Architectures and Software Product Lines - Putting Both Together (SOAPL 2008)

Organisers

Robert Krut, Software Engineering Institute, USA

Sholom Cohen, Software Engineering Institute, USA
 Dragan Gasevic, Athabasca University, Canada
 Andreas Helferich, Universität Stuttgart, Germany
 Jaejoon Lee, Lancaster University, UK
 Grace Lewis, Software Engineering Institute, USA
 Tomi Männistö, Helsinki University of Technology, Finland
 Curt Pederson, American Family Insurance, USA
 Dennis Smith, Software Engineering Institute, USA
 Christoph Wienands, Siemens Corporate Research, USA

Description

Service-Oriented Architecture (SOA) and software product line (SPL) approaches to software development share a common goal. They both encourage an organization to reuse existing assets and capabilities rather than repeatedly redeveloping them for new systems. The intent is that organizations can capitalize on reuse to achieve desired benefits such as productivity gains, decreased development costs, improved time to market, higher reliability, and competitive advantage. Their distinct goals may be stated as:

- SOA: enable assembly, orchestration and maintenance of enterprise solutions to quickly react to changing business requirements
- SPL: systematically capture and exploit commonality among a set of related systems while managing variations for specific customers or market segments

This workshop will build on results of the SOAPL 2007 workshop: Service-Oriented Architectures and Product Lines - What is the Connection? and the workshop report (CMU/SEI-2008-SR-006). This year's workshop, SOAPL 2008, will explore experiences in integrating SOA and SPL, specifically:

1. How web services have been used to support product lines using a service-oriented architecture?
2. How product line practices have been used to support web services and service-oriented architectures?

Topics of interest for the workshop include, but are not limited to:

- Practice areas that span both SOA and product lines (e.g., domain analysis, legacy mining, operations/governance, etc.)
- Handling variability through services
- Cost models to justify investment in SOA for product lines
- Use of support technology such as: domain specific languages, tools, other
- Differences between service-oriented and more conventional product line development approaches
- Architectural approaches: static vs. dynamic

Participants in the SOAPL 2008 will include product line and service-oriented practitioners who have experience in integrating service-oriented architectures and software product lines approaches. These include practitioners in product line engineering, product line management, and architects/developers of SOA-based systems.

Important Dates

Submission Deadline: July 1, 2008

Notification of Acceptance: July 15, 2008

Camera-ready Papers: July 31, 2008

Main Contact

Robert Krut, Software Engineering Institute, USA
rk (at) sei (dot) cmu (dot) edu

Workshop Homepage

<http://www.sei.cmu.edu/productlines/SOAPL2008/>

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W4: 5th Software Product Lines Testing Workshop (SPLiT 2008)

Organisers

Peter Knauber, Mannheim University of Applied Sciences, Germany

Andreas Metzger, University of Duisburg-Essen, Germany

John D. McGregor, Clemson University, USA

Description

Software product line engineering (SPLE) has shown to be a very successful paradigm for developing a diversity of similar software products at low cost, in short time, and with high quality. Similar to the development of single software products, the key aim of testing in software product line engineering is to uncover the evidence of faults in the development artifacts and products. However, significant differences between SPLE and the development of single systems exist. Those differences lead to specific challenges for product line testing.

This fifth instance of the SPLiT workshop series will discuss novel approaches and open issues in software product line testing. Specifically, SPLiT 2008 aims at investigating how testing in software product line engineering can benefit from experience of other disciplines and vice versa. Thus, the workshop will provide an opportunity to discuss innovative ideas, setting a research agenda, and starting collaborations on diverse topics of SPL testing and related areas.

To this end, SPLiT 2008 will bring together both testing researchers and practitioners in a highly interactive event. Each paper session will be organized in order to stimulate discussions. Dedicated working sessions will be devoted to specific issues in SPL testing.

Topics of interest include, but are not limited to:

- Test case design techniques and test case generation
- Definition and measurement of test coverage and test effectiveness
- Techniques for increasing test efficiency and effectiveness
- Test of quality characteristics
- Use of formal approaches for testing
- Application of product line testing strategies and techniques in the context of other development paradigms

- Application of testing strategies from other development paradigms in the SPL context
- Fault models for SPLs

Important Dates

Submission Deadline: 31 May, 2008

Notification to Authors: 15 June, 2008

Camera-Ready Papers: 30 June, 2008

Main Contact

Peter Knauber, Mannheim University of Applied Sciences, Germany
p (dot) knauber (at) hs-mannheim (dot) de

Workshop Homepage

<http://www.biglever.com/split2008/>

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W5: Workshop on Analyses of Software Product Lines (ASPL 2008)

Organisers

David Benavides, University of Seville, Spain

Antonio Ruiz Cortes, University of Seville, Spain

Don Batory, University of Texas at Austin, USA

Patrick Heymans, University of Namur, Belgium

Description

The automation of software product line (SPL) analyses is of growing interest to both practitioners and researchers. In particular, automated analyses of variability models (like feature or decision models) and languages that foster declarative specifications of programs using those models are now common. We note that many of the problems that SPL engineers face are related to configuration problems that have been addressed by the Artificial Intelligence (AI) community. Indeed, the SPL community is using some of their results, e.g., BDD, CSP and SAT solvers.

This workshop is intended to bring together researchers in SPL and AI in order to review and discuss synergies of the various approaches, and to propose new ideas and results. The two long term objectives are (i) learn from what has been done up to now in AI that is related to automated analyses of SPLs and (ii) creating a community interested in automated analyses of SPL in order to keep SPL tools and research up-to-date with the latest technologies.

Important Dates

Submission Deadline: June 15, 2008

Notification to Authors: July 18, 2008

Camera-ready Papers: July 25, 2008

Main Contact

David Benavides, University of Seville, Spain

benavides (at) us (dot) es

Workshop Homepage

<http://www.isa.us.es/aspl08>

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W6: 2nd International Workshop on Management and Economics of Software Product Lines (MESPUL 2008)

Organisers

Klaus Schmid, University of Hildesheim, Germany

M. Ali Babar, Lero, University of Limerick, Ireland

Paul Grünbacher, Johannes Kepler University, Austria

Makoto Nonaka, Toyo University, Japan

Description

Product line engineering has recently emerged as a viable and important software development paradigm. Many companies have been adopting product line approach in order to improve the efficiency of their development processes, to increase the quality of end product, and reduce time-to-market and cost. Researchers and practitioners have proposed several methods, techniques, and tools to support the technical aspects of software product line engineering. Research has also been reported on different mechanics of calculating ROI, understanding Cost-Benefits, and critical factors in adopting software product lines. However, the body of knowledge on the management and economics aspects of software product lines is very thin. Adoptions and management of software product lines require significant initial investment that is expected to maximize the business value. In addition, managing a product line project is far complex and difficult because of the inter-related structure between core assets and products, multiple deadlines, resource allocation, etc. Software product line practitioners need new approaches, models, and tools for addressing various challenges related to the management and economics of software product lines to be able to maximize the business value of adopting product line approach. Moreover, there is need for gathering and using empirical evidence to support different approaches of software product lines.

The first international workshop on management and economics of software product lines aims to bring together researchers and practitioners from academia, industry and governments to report and discuss the challenges and opportunities of adopting and managing software product lines from managerial, organizational, and economics point of view. The workshop will provide a forum to present ideas about using existing management and organizational strategies and economic models to support software product lines and/or propose new approaches, techniques, and tools for business and technical manager to maximize the business value of software product line engineering. The workshop will cover the broad spectrum of research papers, experience reports, and position papers relevant to the economic, management, organizational aspects of software product line engineering.

Important Dates

Submission Deadline: June 29, 2008

Notification to Authors: July 20, 2008
Camera-ready Papers: August 1, 2008

Main Contact

Klaus Schmid, University of Hildesheim, Germany
schmid (at) sse (dot) uni-hildesheim (dot) de

Workshop Homepage

<http://www.lero.ie/mespul08>

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W7: Workshop on Open Source Software and Product Lines (OSSPL 2008)

Organisers

Frank van der Linden, Philips Healthcare, The Netherlands
Björn Lundell, University of Skövde, Sweden
Gary Chastek, Software Engineering Institute, USA

Description

Embedded industries have invested a lot in the introduction of software product lines in their software development. In addition, using open source software appears to be a profitable way to obtain good software. This is also applicable for organizations doing product line engineering. On the other hand, because of the diverse use of open source software, product line development is an attractive way of working in open source communities. In fact, the configuration mechanisms used in open source communities may be applicable within software product lines as well. In addition, product line organizations are usually involved in distributed development, which works very efficiently within open source communities.

However, at present, there is limited interaction between the open source and product line development communities. The aim for the workshop is to explore what the two communities can learn from each other and to develop a better understanding of how the two communities can benefit from each other.

Important Dates

Submission Deadline: June 1, 2008
Notification to Authors: July 1, 2008
Camera-ready Papers: July 31, 2008

Main Contact

Frank van der Linden, Philips Healthcare, The Netherlands
frank (dot) van (dot) der (dot) linden (at) philips (dot) com

Workshop Homepage

<http://www.itea-cosi.org/modules/wikimod/index.php?page=OssPI08>

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W8: 2nd International Workshop on Visualisation in Software Product Line Engineering (ViSPLE 2008)

Organisers

Rick Rabiser, Johannes Kepler University, Austria
Patrick Healy, Lero, University of Limerick, Ireland
Daren Nestor, Lero, University of Limerick, Ireland
Mike Mannion, Glasgow Caledonian University, Scotland
David Sellier, Glasgow Caledonian University, Scotland

Description

Product line engineering has emerged as a viable and important approach to software development during the last few years. To leverage explicit and extensive reuse of shared software artefacts, many companies use a product line approach to build different variants of their products for use within a variety of systems. Product lines can be large and could easily incorporate thousands of elements like variation points and configuration parameters together with diverse dependencies between those elements. This makes product line management and systematic product derivation extremely difficult.

This workshop aims at elaborating the idea of using information and software visualisation techniques to achieve the economies of scale required to support variability management and product derivation in industrial product lines. Visualisation techniques have been proven effective to improve both the human understanding and effective use of computer software. They have also been used to amplify the cognition about large and complex data sets. Exploring the potential of visual representations such as trees and graphs combined with the effective use of human interaction techniques such as dynamic queries, direct manipulation, and details-on-demand when applied in a software product line context is a novel and challenging research direction in software product line engineering.

The workshop aims at bringing together researchers and practitioners to discuss problems and potential solutions related to using visualisation and interaction approaches, techniques and tools to improve the effective-ness of variability management and product derivation. We aim to attract and bring together members from the information visualisation, software visualisation, and software product line engineering communities.

Important Dates

Submission Deadline: ~~June 23, 2008~~ **June 29, 2008 (extended)**
Notifications to Authors: ~~July 14, 2008~~ **July 18, 2008 (extended)**
Camera-ready Papers: July 31, 2008

Main Contact

Rick Rabiser, Johannes Kepler University, Austria
rabiser (at) ase (dot) jku (dot) at

Workshop Homepage

<http://www.lero.ie/visple2008>

Page last updated: 14/08/2008



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Microsoft Powerpoint - 194 Kb

[P1 Product Line Scoping in Practice](#)

[P2 Agile and Product Line Engineering](#)

[P3 Catalysts and Inhibitors for Momentum in the Software Product Line Industry](#)

P1: Product Line Scoping in Practice

Scoping is a key activity in Software Product Lines but organizations coming from a one-of-a-kind software development background typically have little understanding of how it is done in practice and why it is so important.

In this session our veteran product line panellists are asked to consider what scoping is, how it relates to other product line activities and most importantly how they perform scoping in practice.

The panel discussion will be motivated by a small number of examples but the audience is strongly encouraged to bring their own questions and examples to the session so that the discussion takes the direction most relevant to their interests and needs.

Panelists

Danilo Beuche works for pure-systems GmbH, a specialist provider of tools and services for the application of Software Product Line technology. As well as managing the company Danilo also consults extensively on Product Line Engineering, mainly for clients in embedded industries. Danilo has been a tutorial presenter, speaker, workshop organizer and panellist at conferences such as AOSD, ISORC, SPLC and OOPSLA. He is also author of many articles in scientific journals and software development magazines. Danilo has a PhD from the University of Magdeburg for his research applying Software Product Line Engineering to embedded operating systems development.

Isabel John is a researcher and project leader at Fraunhofer IESE. She is responsible for product line introduction projects in industrial contexts and performs product line technology transfer to software developing companies. For almost 10 years, she has been working in industrial and research projects in the context of software product lines, scoping, and product line requirements engineering and has performed scoping in several different industrial and academic contexts.

Prof. Dr. Klaus Schmid holds a professorship for software engineering at the University of Hildesheim. He is active in the areas of Requirements Engineering and Product Line Engineering since the mid-nineties. Over time he has been involved in numerous research and industrial projects. His specific interests are in value-based product line engineering and the engineering of adaptive systems. He has authored numerous refereed papers on these subjects and has been responsible for several workshops and tutorials on international conferences in this area. Previously, he was also department head for requirements engineering and usability engineering at the Fraunhofer Institute for Experimental Software Engineering. He received a diploma degree and a Ph.D. degree in computer science from the University of Kaiserslautern.

Christa Schwanninger works as a Senior Research Scientist at Siemens AG Corporate Technology in Germany where she consults for Siemens business units in software architecture and product line engineering. In the past 10 years she has been actively involved in the development of systems for the telecommunication, automotive, automation and medical devices domains.

P2: Agile and Product Line Engineering

Agile software development and software product line engineering are both successful approaches to the development of software-intensive products, but can the planning driven approach of product lines be effectively integrated with the opportunistic approach of agile techniques? This is a difficult question to answer since each broad strategy refers to a family of possible methods. It is a sufficiently interesting question to have been the subject of a workshop at SPLC 2006 and a journal special issue [1].

In order to begin exploring this question as a community, a working session will be held during the technical program of SPLC 2008. In a working session, the facilitator stimulates discussion by posing initial questions and assertions to which the audience reacts. The interests and experiences of the group will guide the discussion from there. In general, we are interested in generating discussion on:

- your experiences in using agile techniques in actual product line operation
- reasons why you rejected the idea of using agile techniques
- what adjustments you have made to software product line practices to make an agile product line successful

The discussion will continue after SPLC 2008 via a wiki forum and a follow-up session at SPLC 2009 will be proposed to continue discussions.

The agile approach can be characterized by the four values specified in the Agile Manifesto [2].

1. Individuals and interactions over processes and tools.
2. Working software over comprehensive documentation.
3. Customer collaboration over contract negotiation.
4. Responding to change over following a plan.

Additionally, Hanssen and Fægri use the twelve agile principles, which are also a part of the manifesto, to provide a comparison with software product line principles [3].

The software product line approach can be characterized broadly by examining elements of the SEIs Framework for Product Line Practice [4]. By choosing different specific practices in

each practice area within the framework, very different approaches result. Fundamental product line principles include

- the separation of the roles of core asset development and product development, and
- the interaction of both roles with management to ensure continuity across projects.

A software product line organization works to achieve strategic levels of reuse through the identification of common behavior and the constraint of variable behaviors.

The agile culture would appear to emphasize the autonomy of the individual while the product line culture would appear to rely on the common vision developed from centralized planning. To balance these, one approach, is to consider planning as a strategic process and software development a tactical process. This allows for both stability and flexibility, each to a limited extent.

If we consider agility as rapid response, the above approach falls short. If the core assets are taken as a strategic stockpile of stable plans and flexible software, changing the stable assets may take too long and changes only to the flexible assets, over the longer life of a product line, will lead to inconsistent assets. A true integration of the two approaches may be required for a totally satisfactory solution. Such an integration would still operate at both the strategic and tactical levels but would crosscut the core asset, product development, and management areas.

Model-driven development often is seen as strategic since it requires a long term view and tactical since changes can be accomplished quickly by changing the existing model and regenerating the asset. Model-driven development is often seen as limited to software development, but in a product line context, model-driven techniques, such as template-driven generation, can be applied to plans and documents as well as software. The initial creation of models is strategic because it requires a longer term view that extends over all the products in the product line. Their use and subsequent maintenance is more tactical in that they are exercised over the limited scope of a single product. Both customization changes and maintenance changes can be made to core assets for individual products more rapidly because the model-driven approach typically has more automated support for consistency checking, automatic (re-)generation, and testing.

Join us to comment on these approaches and to suggest your own. This is an opportunity to be a participant in the SPLC2008 program, not just a spectator.

REFERENCES

- [1] K. Cooper and X. Franch, "Agile product line engineering," *Journal of Systems and Software*, vol. 81, no. 6, 2008.
- [2] agilemanifesto. [Online]. Available: www.agilemanifesto.org
- [3] G. K. Hanssen and T. E. Faegri, "Process fusion: An industrial case study on agile software product line engineering," *Journal of Systems and Software*, vol. 81, no. 6, 2008.
- [4] P. Clements and L. M. Northrop. Framework for product line practice. [Online]. Available: www.sei.cmu.edu/productlines.

P3: Catalysts and Inhibitors for Momentum in the Software Product Line Industry

Panel Introduction

For Software Product Line Engineering (SPLE) to become a standard and accepted practice in the industry, it must be widely embraced by large corporations, major software tool and service vendors, industry analysts, and technology press. We have seen steady but slow progress in all of these areas over the past few years. What can we do to better control or influence the future trends?

Technology adoption at the industry scale is about building and sustaining momentum. Through a feedback loop comprising successes and failures, credible validation and invalidation, credible communication, leaps of faith, competitive opportunities, perceptions about perceptions, and so forth, momentum is gained or lost. Catalysts and inhibitors in the loop ultimately determine whether momentum will accelerate or be dampened.

In this panel, we bring together an esteemed group of industry leaders from the key areas that impact momentum of new technology adoption, all of whom have been involved in the early stages of the industry's SPLE momentum. In this panel we will search for insights across a broad industry spectrum into the current catalysts and inhibitors, as well as opportunities for the Software Product Line Conference (SPLC) community to positively contribute to the momentum.

Discussion Threads

Some of the questions addressed by the panel include:

- What is the current state of SPLE acceptance and adoption by the broad system and software engineering industry?
- How quickly can SPLE become a standard practice in the industry?
- What are the past, present and future catalysts that facilitate and accelerate the momentum?
- What are the past, present and future inhibitors that dampen or stall the momentum?
- How do the different roles in the industry – large corporations, major tool and service vendors, industry analysts, technology media – impact this and what is their relative importance?
- To what extent are each of these roles having positive impact?
- What can members of the SPLC community – both researchers and practitioners – do to help catalyze the momentum?

Insights Offered

For the SPLC community to fully impact the future of Software Product Line Engineering in the industry, we must now understand and address many factors that have traditionally been outside of the SPLC focus.

Expected insights for practitioners: Perceptions, trends and opportunities that can impact the technical and business SPLE efforts within their companies.

Expected insights for researchers. Perceptions and trends that can impact research agendas.

Panelists

Charles Krueger (moderator), Founder and CEO, BigLever Software, the industry leading provider of SPLE framework, tools, methodology and services.

John Carrillo, Senior Director of Corporate and Product Strategy, Telelogic, an IBM company. Leading the strategic initiative to bring SPLE practice into the tools and practices offered by Telelogic and IBM Rational.

Bola Rotibi, Principal Analyst, Macehiter Ward-Dutton. Focused on issues and products concerning the software development and delivery processes and technologies, including a focus on SPLE.

James Cezo, Principal Member Engineering Staff, Lockheed Martin. Leading the adoption of System and Software Product Line Engineering practice for Lockheed Martin Maritime Systems and Sensors.

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A hall of fame serves as a way to recognize distinguished members of a community in a field of endeavor. Those elected to membership in a hall of fame represent the highest achievement in their field, serving as models of what can be achieved and how. Each Software Product Line Conference culminates with a session in which members of the audience nominate systems for induction into the Software Product Line Hall of Fame. These nominations feed discussions about what constitutes excellence and success in product lines. The goal is to improve software product line practice by identifying the best examples in the field. Nominations are acted on by a panel of expert judges, who decide which nominees will be inducted into the Hall of Fame.

You can read about the current members of the Software Product Line Hall of Fame at http://www.sei.cmu.edu/productlines/plp_hof.html.

Inductees from 2007 will be announced at the SPLC 2008 Hall of Fame session.

Criteria for Election to the Software Product Line Hall of Fame

Members of the software product line hall of fame should serve as models of what a software product line should be, exhibiting most or all of the following characteristics:

- The family that constitutes the product line is clearly identified, i.e., there is a way to tell whether or not a software system is a member of the product line, either by applying a known rule or a known enumeration.
- The family that constitutes the product line is explicitly defined and designed as a product line, i.e., the commonalities and variability that characterize the members of the product line are known and there is an underlying design for the product line that takes advantage of them.
- The product line has had a strong influence on others who desire to build and evolve product lines, and has gained recognition as a model of what a product line should be and how it should be built. Others have borrowed, copied, and stolen from it in creating their product lines or in expounding ideas and practices for creating product lines.
- The product line has been commercially successful.
- There is sufficient documentation about the product line that one can understand its definition, design, and implementation without resorting solely to hearsay.

Hall of Fame Judges

David M. Weiss, Avaya Labs Research (Chair)

Paul C. Clements, Software Engineering Institute

Kyo Kang, Pohang University of Science and Technology
Charles Krueger, BigLever Software

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SPLC2008 / Important Dates

Early bird registration deadline: 7 August, 2008

Paper Submissions **(Closed):**

Submission Deadline for Abstract: *22 February, 2008.*

Submission Deadline for Full Paper: *3 March, 2008.*

Notification of Acceptance: *28 April, 2008.*

Camera-Ready Version: *2 June 2008.*

Workshop Submissions **(Closed):**

Workshop Proposal Submission: *22 February, 2008.*

Notification of Workshop Acceptance: *17 March, 2008.*

1-Page Workshop Summary (Camera-Ready): *9 June 2008.*

Tutorial Submissions **(Closed):**

Submit your proposal: *15 March, 2008.*

Notification: *15 May, 2008.*

2-Page Workshop Summary (Camera-Ready): *9 June 2008.*

Demo/Posters Submissions **(Closed):**

Submit your proposal: *6 May, 2008.*

Notification: *20 May, 2008.*

Demo/Poster Summary (Camera-Ready): *9 June 2008.*

Panels Submissions **(Closed):**

Submit your Panel proposal: *30 April, 2008*

Notification: *20 May, 2008*

Panel Summary (Camera-Ready): *9 June 2008.*

Doctoral Symposium Submissions:

Submit your Ph.D. proposal: *15 June, 2008.*

Notification: *20 July, 2008.*

Revised Version for Distribution: *31 July, 2008*

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Limerick is situated in the mid-west of Ireland 25km from Shannon International Airport.



By Air

The best way to reach Limerick is to fly to **Shannon Airport**, located 20km north of Limerick City. Scheduled flights arrive daily at Shannon from several European and US locations providing a convenient hub facility.

The main airlines serving Shannon Airport are:

- **Aer Lingus**
- **Ryanair**

For a full list of flights reaching Shannon, please consult the **airport website**

A bus service is available from Shannon Airport to Limerick City Centre (train and bus station).

A taxi desk and car rental facilities are located in the arrivals hall at Shannon Airport.

For delegates arriving at Dublin Airport, Limerick is serviced by regular train and bus services originating from Dublin city centre.

By Train or Bus from Dublin

For information on train schedules from Dublin to Limerick, please check out the [Irish Rail website](#)

For information on bus schedules from Dublin to Limerick, please check out the [Bus Eireann website](#)

By Boat

There are three main ferry companies which service Ireland by Dublin Port (from Holyhead, Liverpool Douglas)_

<http://www.dublin-port.ie/tourism.html>

by Irish Ferries (from Pembroke, Holyhead, Cherbourg, Roscoff)_

<http://www.irishferries.ie/>

by FerryView (from Pembroke, Holyhead, Liverpool, Swansea)_

<http://www.seaview.co.uk/ferryroutes/irishrep.html>

Accommodation

You will be able to book accommodation at two selected hotels when [registering for the conference](#).

If you wish to arrange [alternative accommodation](#), a wide range of options is available at both hotels and B&Bs in the surroundings of the conference venue and in the greater Limerick area. However, you'll have to organise reservation yourself. A list of accommodation options can be found [here](#).

Visa Requirements

Check if you need a visa in the list of countries on the web site of the Department of Foreign Affairs.

Applications must normally be made through the Irish Embassy or Consulate in the applicant's country of permanent residence and applicants may be required to attend for personal interview. If there is no Irish Embassy or Consulate in the applicant's country of permanent residence the application may be made through any Irish Embassy or Consulate through the applicant's reference in Ireland or directed by post to the Visa Office, Department of Foreign Affairs, 69-71 St. Stephen's Green, Dublin 2, Ireland, Phone +353 1 478 08221

Applicants should apply at least three weeks (five weeks by post) in advance of the intended date of departure for Ireland.

The granting of an Irish visa is, in effect, only a form of pre-entry clearance. It does not grant permission to enter Ireland. Immigration Officers have authority to grant or deny

admission. Visa holders are subject to normal immigration control at the port of entry. They should therefore carry with them, for possible presentation to Immigration Officers, the originals or copies of the documents submitted with their applications.

Visa applicants require a valid visa each time they enter the State, including entry via the UK. This also applies to persons who have current permission to reside in the State.

A visa does not grant permission to stay in Ireland. The date of validity shown on the visa indicates only the date before which it must be presented to an Immigration Officer. The length of stay is decided by an Immigration Officer at the port of entry. Irish law does not provide a permanent residence visa.

A visa holder who remains in the State longer than the permitted period and/or who submitted false or misleading information in support of his/her application may become liable for prosecution and/or subject to deportation.

Travel tickets should not be booked or paid for by applicants until their applications have been approved.

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Accommodation in Limerick and the surroundings

Room blocks for SPLC delegates are being held by [Hilton Limerick](#), the conference venue and [Clarion Hotel](#). Please make direct contact to these hotels and mention that you are SPLC 2008 delegate to get the special rate for conference delegates. Please note that the blocked rooms will be released after July 31st.

If you prefer to find some other place to stay, please find a list of other options below.

Hotels

1 [Limerick Hilton](#)****, the conference venue.

2 [Clarion Hotel](#)****, Steamboat Quay (15-20 mins walk)

<http://www.clarionlimerick.com/>

T. +353 61 444 100

F: + 353 61 444 101

E: info@clarionhotellimerick.com

3 The George Boutique Hotel****, O'Connell Street (15 mins walk)

<http://www.georgehotellimerick.com/>

Tel. (from Ireland) (1890) 669900

4 Best Western Pery's Hotel***, Glentworth Street, (15-20 mins walk).

5 Absolute Hotel****, Sir Harry's Mall (15-20 mins walk)

<http://www.absolutehotel.com/>,

info@absolutehotel.com

Tel +353 (61) 463-600 -

Fax +353 (61) 463-601

6 Marriott Hotel ****, Bedford Row (5 mins walk)

<http://marriott.com/hotels/travel/snnmc-limerick-marriott-hotel/>

Phone: 353 61 448700

Fax: 353 61 448701

7 Clarion Hotel Suites (self catering) ****, Ennis Road (10 mins walk)

<http://www.clarionsuiteslimerick.com/>

T: +353 (0)61 582 900

F: + 353 (0)61 582 901

8 Jurys Inn Limerick***, Lower Mallow St (15-20 mins walk)

http://limerickhotels.jurysinns.com/jurysinn_limerick

T +353 061 207000

Fax: +353 61 400966

9 Greenhills Hotel**, Ennis rd Limerick

(25 mins walk)

T +353 61 453033

F +353 61 453307

E info@greenhillsgroup.com

W <http://www.greenhillsgroup.com>

10 Woodfield House Hotel**, Ennis Rd (15-20 mins walk)

T +353 61 453022

B&Bs and Guesthouses

11 Trebor House, Ennis Road (15 mins)

Tel: +353 61 454632

Fax: +353 61 454632

Email: treborhouse@eircom.net

URL: www.treborhouse.com

also book on <http://limerick.goireland.com/>

12 The Irish House, 41 Ennis rd (10-15 mins)

T +353 61 329198

13 St. Rita's, Ennis Road (10 mins)

<http://www.saint-ritas.com/>

+353 61 455809

+353 61 325363

info@saint-ritas.com

14 Santa Cruz, 10 Coolraine Terrace Ennis rd (20-30 mins walk)

(can be booked through www.accommodation.ie)

T +353 61 454500

15 Old Quarter Lodge Guesthouse (20 mins walk)

Denmark st Limerick

T +353 61 315320

16 Clifton House, Ennis Road (20-30 mins)

T +353 61 451166

F +353 61 451224

E Cliftonhouse@eircom.net

Options outside the City Centre (for delegates renting a car)

Patrick Punch's Hotel****
Punch's Cross, Ballinacurra Road
<http://www.dghotels.com/patrickpunchshotel/>
10 mins drive

Castletroy Park Hotel****
Dublin Road
<http://www.castletroy-park.ie/>
15 mins drive

Quality Hotel Limerick****
Southern Ring Road
www.QualityHotelLimerick.com
15 mins drive

Radisson SAS****
Limerick-Shannon Road
<http://www.limerick.radissonsas.com/>
20 mins drive

Bunratty Castle Hotel****
Bunratty
<http://www.bunrattycastlehotel.com/>
25 mins drive

Castle Oaks Hotel****
Castleconnell
<http://www.castleoaks.ie/>
25 mins drive

Lakeside Hotel***
Ballina/Killaloe
<http://www.lakeside-killaloe.com/>
30 mins drive

Adare Manor *****
Adare, Co. Limerick
<http://www.adaremanor.com/>
35 mins drive

Dunraven Arms****
Adare, Co. Limerick
<http://www.dunravenhotel.com/>
35 mins drive

Dromoland Castle*****
Newmarket on Fergus, Co. Clare
<http://www.dromoland.ie/>
40 mins drive

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Limerick City

Limerick City is sited on one of Europe's finest rivers, **the River Shannon**. A Viking City, one can only imagine the 9th century scenes when fleets of Viking vessels sailed up the river to plunder and terrorise the monastic midlands. In later centuries these Norsemen settled and founded the trading port of Limerick which to-day is a proud, progressive and thriving City with a charter older than that of London. Its castles, ancient walls and museums are testament to its dramatic past. Particularly worth viewing is King John's Castle in its Heritage precinct and the magnificent Hunt Museum in Limerick's Custom House. This museum houses an internationally important collection of some 2,000 original works including pieces by Leonardo da Vinci, Renoir and Picasso.

Places to visit in and around Limerick

Bunratty Castle is one of the finest surviving examples of an Irish tower house. Although it is hard to believe that the castle has had a bloody and violent history. Its strategic position on the river Shannon made it the centre of many a battle.



Ref : www.durtyneillies.ie The Folk Park adjoins the castle and aims to show what everyday life was like in rural Ireland about 100 years ago. It contains reconstructed farmhouses, cottages and shops, and care has been taken to make them as authentic as possible, particularly with regard to furnishings.

Cliffs of Moher are situated in County Clare and bordering the Burren Area, the Cliffs of Moher are one of Ireland's most spectacular sights. Standing 230 metres above the ground at their highest point and 8km long, the Cliffs boast one of the most amazing views in Ireland. A walk along the cliffs is not to be missed. Those with a head for heights can easily walk to the edge of the cliff and view the Atlantic Ocean below.



Ref (www.cliffsofmoher.ie)

The Burren lies south of Galway in County Clare, Ireland. The name Burren is from the Irish - bhoireann meaning a stony place. Its formation has lain unspoiled since the ice-age and is composed of karstic limestone, the largest area of such in Western Europe. This area has some of the finest archaeological megalithic tombs in Ireland, if not in Western Europe. In this area alone there are more than 60 wedge tombs and the densest



concentration in Ireland.

net)

Ref (www.galway.net)

The Ring of Kerry One the most famous and popular road circuits for tourists in the South West of Ireland, the Ring of Kerry, traverses the coastline of the Inveragh Peninsula with a great many tourist sites along the way. Dramatic panoramas, majestic mountain shapes, ancient sites and towns are found along the winding route of the N70 through the southern tip of Kerry known as the Ring of Kerry.



(Re: www.kerrycoco.ie)

Dingle Peninsula, Europe's most westerly town and sheltered by hills on three sides, the harbour is one of the world's natural beauty spots - home to an active fishing fleet and resident dolphin - FUNGI. It has a diving centre, sailing club, art galleries, traditional craft and excellent accommodation. Dingle has many eccentric & colourful pubs and fine restaurants, offering entertainment and traditional Irish music unique to the area

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12th International

Software Product Line Conference 2008

Limerick, Ireland, 8 - 12 Sept 2008

- **Venue** **SPLC2008 / Local Information / Venue**

- Travel

- Accommodation

- Tourist Attraction

The Venue

The conference venue, the **Hilton Limerick**, is one of the newest additions to Limerick's skyline. Situated on the banks of the river Shannon at O'Callaghan Strand, the seven-floor hotel has 184 bedrooms, an entire floor dedicated to executive travellers with an executive lounge, 14 'Hilton Meetings' rooms, a LivingWell health club with a 20m pool, full gym and beauty spa, a fine-dining restaurant, bar and café bar and function and wedding facilities for 450 guests. The heart of the city centre with its many attractions is just a stone's throw away across Sarsfield bridge.

Limerick is the gateway to Ireland's scenic west. An ancient city, with a charter predating that of London, Limerick epitomises Ireland's industrial and cultural renaissance. An economy that has grown at an average of 7% per annum for over 5 years, driven in large part by the IT sector, has resulted in a reinvigorated social and cultural scene that has, nonetheless, lost none of its traditional spontaneity and charm. You have to look very hard to find traces of 'Angela's Ashes'.

The **city of Limerick** boasts galleries, theatre, excellent restaurants and a world class museum housed in the restored Custom House. King John's Castle bestrides the Shannon at one of its many bridges while St Mary's Cathedral is a small scale gothic masterpiece dating from the 12th century. Only a few miles from the city, the University of Limerick has played a major part in Ireland and Limerick's rebirth. Set on a magnificent parkland campus, beside the Shannon, the University is the centrepiece of the National Technological Park.

Above all, Limerick is a haven for Irish traditional music and you can find a lively 'session' on any night of the week.

For more information on Limerick visit [VisitLimerick.com](http://www.visitlimerick.com)

Limerick is the heart of the Shannon region. A short drive takes you to the wonders of the Burren, the Cliffs of Moher or the beauty of Galway Bay. An additional short boat trip reaches the Aran Islands, last outpost of Europe and a stronghold of the Irish (Gaelic) language. To the east is the Shannon river and its hills and lakes; to the south lies Kerry and the legendary beauty of Dingle and Killarney. There are organised tours or you can drive yourself along winding country roads.

Lero is proud to host SPLC2008 and we wish you Céad Míle Fáilte - one hundred thousand welcomes.

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SPLC

**12th International
Software Product Line Conference**
Limerick, Ireland, 8-12 Sept. 2008

Conference Organization

General Chair:

Klaus Pohl, *Univ. of Duisburg-Essen, Germany &
Lero, Univ. of Limerick, Ireland*

Program Chair:

Birgit Geppert, *Avaya Labs, USA*

Program Board:

Stefania Gnesi, *IEI-CNR, Italy*
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Charles Krueger, *BigLever, USA*
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David M. Weiss, *Avaya, USA*

Program Committee:

Jan Bosch, *Intuit, USA*
Manfred Broy, *TU Munich, Germany*
Paul Clements, *SEI, USA*
Krzysztof Czarnecki, *Univ. Waterloo, Canada*
Stuart Faulk, *University of Oregon, USA*
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Hassan Gomaa, *George Mason Univ., USA*
Georg Gruetter, *Robert Bosch, Germany*
Oystein Haugen, *SINTEF&Univ. of Oslo, Norway*
Patrick Heymans, *University of Namur, Belgium*
Isabel John, *Fraunhofer IESE, Germany*
Tomoji Kishi, *JAIST, Japan*
Peter Knauber, *HS Mannheim, Germany*
Philipp Kutter, *Montages, Switzerland*
Patricia Lago, *Vr.Univ.Amsterdam, The Netherlands*
Robyn Lutz, *Iowa State Univ. & JPL, USA*
Andreas Metzger, *Univ. Duisburg-Essen, Germany*
Maurizio Moriso, *Politecnico di Torino, Italy*
Dirk Muthig, *Fraunhofer IESE, Germany*
Eila Niemelä, *VTT, Finland*
Liam O'Brien, *NICTA, Australia*
Robert Nord, *SEI, USA*
Daniel Paulish, *Siemens, USA*
Frank Roessler, *Avaya, USA*
Juha Savolainen, *Nokia, Finland*
Steffen Thiel, *Lero, Univ. of Limerick, Ireland*
Tim Trew, *NXP, The Netherlands*
Frank van der Linden, *Philips, The Netherlands*

Local Arrangements:

M. Ali Babar, *Lero, Univ. of Limerick, Ireland*

Demonstration & Poster Chair:

Juha-Pekka Tolvanen, *Meta Case, Finland*

Doctoral Symposium Chair:

Klaus Schmid, *Univ. of Hildesheim, Germany*

Panel Chair:

Paul Clements, *SEI, USA*

Product Line Hall of Fame Chair:

David M. Weiss, *Avaya, USA*

Tutorial Chair:

Frank van der Linden, *Philips, The Netherlands*

Workshop Chair:

Steffen Thiel, *Lero, Univ. of Limerick, Ireland*

Financial Chair:

Susan Mitchell, *Lero, Univ. of Limerick, Ireland*

Publicity Chair:

M. Ali Babar, *Lero, Univ. of Limerick, Ireland*

Important Dates

Early bird registration: 7 August, 2008
Conference: 8-12 September, 2008

Call for Participation

SPLC is the premier forum for practitioners, researchers, and educators to present and discuss experiences, ideas, innovations, as well as concerns in the area of software product lines. SPLC 2008 will be the 12th official gathering of the product line community and will take place in Limerick, one of Ireland's top technology and educational centers.

SPLC looks back on a history of a successful exchange of ideas and cooperation among product line practitioners and researchers on product line techniques, methods, and tools. This has led to innovative research ideas and successful industrial product lines. The objective of SPLC 2008 is to continue this dialogue.

The technical program will feature invited talks, technical paper presentations, and panel discussions on the most relevant topics in product line engineering. In addition, we will host a number of workshops and tutorials, and will offer selected demonstrations and poster presentations. We will also once again host the SPLC Doctoral Symposium and the Product Line Hall of Fame nomination ceremony (cf. www.lero.ie/SPLC2008).

SPLC 2008 is be organized by Lero at the Hilton hotel in Limerick, Ireland. The organising committee invites the software engineering community to join them for discussions and exchange of views on different aspects of software product line engineering field.

Keynote Speakers

Professor David Lorge Parnas

Luc Koch

General Manager CTO/C&S,
Philips Medical Systems, Netherlands

We invite you to be part of SPLC 2008. For more information about the venue, details on organization, and other information, please visit the conference homepage at www.lero.ie/SPLC2008.

Platinum Level Sponsors



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Supporters





12th International Software Product Line Conference

Limerick, Ireland, 8-12 Sept. 2008

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Xavier Franch, *UPC, Spain*
Hassan Gomaa, *George Mason Univ., USA*
Georg Gruetter, *Robert Bosch, Germany*
Oystein Haugen, *SINTEF&Univ. of Oslo, Norway*
Patrick Heymans, *University of Namur, Belgium*
Isabel John, *Fraunhofer IESE, Germany*
Tomoji Kishi, *JAIST, Japan*
Peter Knauber, *HS Mannheim, Germany*
Philipp Kutter, *Montages, Switzerland*
Patricia Lago, *Vr.Univ.Amsterdam, The Netherlands*
Robyn Lutz, *Iowa State Univ. & JPL, USA*
Andreas Metzger, *Univ. Duisburg-Essen, Germany*
Maurizio Moriso, *Politecnico di Torino, Italy*
Dirk Muthig, *Fraunhofer IESE, Germany*
Eila Niemelä, *VTT, Finland*
Liam O'Brien, *NICTA, Australia*
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Daniel Paulish, *Siemens, USA*
Frank Roessler, *Avaya, USA*
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Publicity Chair:

M. Ali Babar, *Lero, Univ. of Limerick, Ireland*

Important Dates for Paper Submissions

Submission Deadline (firm): 22 Feb. 2008
Notification of Acceptance: 28 Apr. 2008
Camera-Ready Version: 23 May 2008

Important Dates for Other Submissions

cf. www.lero.ie/SPLC2008

Call for Submissions

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We invite **Technical Paper Submissions** for the following categories:

Research Papers describing original results of theoretical or conceptual work in the field of software product line engineering. A research paper should clearly describe the problem that has been tackled, the state of the art with respect to the problem, the solution that is suggested and the potential - or even better the evaluated - benefits of the contribution.

Experience Reports describing the application of software product line technology accompanied by a critical review of (positive and negative) experience. An experience report specifies clearly the context in which the experience was gathered (application domain, size of product line, organizational setting etc.) as well as collected empirical data and/or lessons learned.

Topics of Interest include, but are *not* limited to:

- Agile product line engineering
- Application derivation
- Architectural styles and patterns for product lines
- Definition and scoping of product lines
- Model-driven engineering, domain-specific languages, and code generation
- Evolution and maintenance of product lines and product line assets
- Product line lifecycle management
- Requirements engineering
- Techniques and tools for product line adoption
- Testing, modeling & formal verification of product lines
- Theoretical and empirical economic models of product lines
- Variability modeling and variant management

Submission Guidelines: Papers should be submitted in PDF format. The results described must be unpublished and must not be under review elsewhere. Submitted papers must conform to the IEEE format (2-columns, 10pt, 8.5"x11") and may not exceed ten pages (incl. all text, figures, references, and appendices). See www.lero.ie/SPLC2008 for details.

Accepted Papers: Accepted papers will be published in the conference proceedings by the IEEE. In addition, selected papers will appear in a special issue of Elsevier's Journal of Systems and Software.

Other Submissions: We also invite submissions for tutorials, workshop proposals, demonstrations, poster presentations, as well as submissions for the Doctoral Symposium. See www.lero.ie/SPLC2008 for details on deadlines, formats, etc.

We invite you to be part of SPLC 2008. For more information about the venue, details on organization, paper evaluation criteria etc. please visit the conference homepage at www.lero.ie/SPLC2008.





12th International
**Software Product Line
 Conference 2008**

Limerick, Ireland, 8 - 12 Sept 2008

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 - Sponsorship
 - Registration

SPLC2008 / Promote SPLC 2008

Please promote SPLC08 by:

- Distributing call for participation
- Circulating call for papers
- Distributing the promotional material provided on this page
- Placing a link of this website on your personal homepage
- Mentioning SPLC08 on your blog and during presentations

Associated Files

- [Call for Participation](#)
Acrobat Reader (PDF) - 90 Kb
- [Call for Submissions flyer](#)
Acrobat Reader (PDF) - 61 Kb
- [SPLC 2008 Presentation Slides](#)
Microsoft Powerpoint - 26.2 Mb
- [SPLC 2008 Promotional Video](#)
Zip/Compressed - 41.9 Mb

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12th International

**Software Product Line
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Limerick, Ireland, 8 - 12 Sept 2008

SPLC 2008 CORPORATE SPONSORSHIP

SPLC 2008 offers three options for sponsorships (amounts are VAT included):

Sponsorship Options	Platinum Level Sponsors (€5,000)	Gold Level Sponsors (€2,500)	Silver Level Sponsors (€1,500)
Visibility in Conference Bag	2 Full A4 Pages (<i>must be provided</i>)	1 Full A4 Page (<i>must be provided</i>)	–
Visibility in Conference Program	1 Page* (<i>must be provided</i>) + Sponsor's Name + Logo	Sponsor's Name + Logo	Sponsor's Name
Visibility in Conference Proceedings	Sponsor's Name + Logo	Sponsor's Name	Sponsor's Name
Visibility in Call for Participation	Logo	–	–
Visibility on SPLC 2008 Web Site www.lero.ie/splc2008	Sponsor's Name + Logo	Sponsor's Name + Logo	Logo
Visibility in Email Distributions	Sponsor's Name	Sponsor's Name	Sponsor's Name
Opening and Closing Session	Sponsor's Name Mentioned	–	–
Banners	1 Banner at Conference Site (<i>must be provided</i>)	–	–
Posters	1 A0 Poster in Main Conference Room + 4 A1 Posters in other Conference Rooms (<i>must be provided</i>)	1 A1 Poster in Main Conference Room (<i>must be provided</i>)	1 A1 Poster with all Silver Level Sponsors in Main Conference Room
Free Attendance	4 Free Conference Registrations (<i>does not include Tutorials and Workshops</i>)	2 Free Conference Registrations (<i>does not include Tutorials and Workshops</i>)	1 Free Conference Registration (<i>does not include Tutorials and Workshops</i>)

* in Conference Program format



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SPLC2008 / Sponsorship

The 12th International Software Product Line Conference (SPLC) will be held in Limerick, Ireland on September 8-12, 2008. Software product lines represent an important and growing software development paradigm, and SPLC is a leading forum for researchers and practitioners working in this field. SPLC 2008 will provide a venue for practitioners, researchers, and educators to reflect on the achievements made during the past decade, assess the current state of the field, and identify key challenges researchers and practitioners are still facing. The conference will feature research and experience papers, topical panels, tutorials, workshops, demonstrations, and other opportunities to interact. This year's program will span a wide range of product line interests. It will also include a Doctoral Symposium in which the next generation of researchers will receive guidance and support. We invite you to become a corporate sponsor of SPLC. There are three levels of sponsorship described in the attached flyer. Your sponsorship, in addition to helping with the general expenses of the conference, will assist in enabling research students to attend the conference. Your support will help SPLC 2008 to be an effective venue for sharing and learning. Our Financial Chair, Susan Mitchell, will be happy to answer any questions you may have. You can contact Susan at Susan (dot) Mitchell (at) lero (dot) ie. Thanks for your consideration.

Associated Files

- [SPLC-2008 Sponsorship](#)
Acrobat Reader (PDF) - 100 Kb

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- **Registration**

SPLC2008 / Registration

The registration for the SPLC 2008 Conference is **now open**. Please [click here](#) to register online. The online registration page also contains a pdf version of the registration form to be used for registration via fax or post. Please proceed to the [registration page](#).

Registration Fees for SPLC 2008			
Registration Fees	Standard Fee until August 7 th	Standard Fee after August 7 th	Notes
Conference Standard fee	€390.00	€490.00	Fees per person include for the whole conference: lunches, coffee breaks, reception, banquet and proceedings Conference Fee reduction of €50 if you also register for one workshop/tutorial
Conference Student fee	€230.00	€290.00	Fees per person include for the whole conference: lunches, coffee breaks, reception, and proceedings. (Banquet is not included)
Tutorial (Half Day)	€100.00	€150.00	Fees per person for one tutorial include: coffee break, lunch and tutorial documents.
Workshop (Full Day)	€100.00	€150.00	Fees per person for one workshop include: coffee break, lunch and workshop documents.





SPLC2008 / Call for Submissions / Introduction

We invite the following types of submissions for SPLC 2008:

Technical Papers : we invite you to submit the following types of technical papers:

- a. *Research Papers* describing original results of theoretical or conceptual work in the field of software product line engineering .
- b. *Experience Reports* describing the application of software product line technology accompanied by a critical review of (positive and negative) experience.

Tutorial proposals : we invite you to submit tutorial proposals on topics that are of interest to software product line researchers, practitioners, and educators.

Workshops proposals : we encourage you to submit workshop proposals that bring together people from industry, academia and research institutions to present and discuss experiences and practices in the area of software product line development.

Demonstrations and Posters : we invite you to submit

- a. *Posters* describing research result or on-going research projects.
- b. *Demonstrations* aimed at enabling researchers and practitioners to show state-of-the art systems, languages, environments and applications for software product line engineering.

Doctoral Symposium : we invite PhD students to submit to the Doctoral Symposium to discuss their research, especially goals, methods, and intermediate results with top researchers in the area.

Important dates related to the submission process can be found [here](#)

We invite you to be part of SPLC 2008.

Associated Files

• [Call for Submissions Flyer](#)

Acrobat Reader (PDF) - 61 Kb





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- Registration

SPLC2008 / Submission Guidelines for Doctoral Symposium

Goal:

The goal of the SPLC Doctoral Symposium is to provide a supportive, but challenging environment that enables students to further improve their research work leading to a Ph.D.

Students will be given an opportunity to discuss their research, especially goals, methods, and intermediate results with top researchers in the area. This is a unique opportunity for Ph.D. students to gain valuable expert feedback with respect to all aspects of their research work and to get into contact with other students who are at a similar stage of Ph.D. research. The overall aim is to improve the quality and quantity of successful Ph.D. work in the area of software product lines.

Scope:

The event aims at Ph.D. candidates that are sufficiently advanced to provide already results from initial work but are also sufficiently far from submission that feedback may be integrated into the final version of the Ph.D. Other students (including diploma and master students) may be admitted based on availability of space.

All topics that are relevant to the SPLC are also relevant to the doctoral symposium.

Selection Process:

Submissions will be evaluated according to the relevance, originality, and feasibility of the work.

For each paper at least one reviewer will be available at the symposium and there will be a unique opportunity for discussion among reviewers and participants.

Symposium Organization:

The symposium is a one-day event to be held in conjunction with SPLC 2008. Each participant gets the chance to present his/her work (either as full presentation or as short presentation) and will get feedback from the panelists and the audience. In particular, the presenters will be provided with an opportunity for direct discussions with the reviewers.

Further information:

Further information can be found at:

www.sse.uni-hildesheim.de/en/splc-ds08

Part I: Research Abstract

To participate students shall submit a research abstract electronically (PDF) to splc-ds at sse.uni-hildesheim.de

The submissions shall be 6-8 pages in the [IEEE proceedings 8.5x11-inch, Two-Column Format](#).

The research abstract shall cover:

- The technical problem that shall be solved and a justification of its importance.
- A description of the related and prior work explaining why the identified problem has not been solved.
- The research hypothesis or claim.
- A sketch of the proposed solution.
- The expected contributions of your dissertation research.
- Progress in solving the stated problem.
- The methods you are using or will use to carry out your research
- A plan for evaluating your work and presenting credible evidence of your results to the research community

Try to address these issues as good as you can based on the status of your research. The research abstract shall include the title of your work, your name, email address, postal address, personal website, and a one paragraph short summary in the style of an abstract for a regular paper. Submissions should contain no proprietary or confidential material and should cite no proprietary or confidential publications.

Part II: Letter of Recommendation

Ask your dissertation advisor for a letter of recommendation. This letter should include your name and a candid assessment of the current status of your dissertation research and an expected date for dissertation submission. The letter should be in Adobe Portable Document Format (PDF), and sent to: splc-ds at sse.uni-hildesheim.de with the subject of: SPLC-Dissertation-Symposium.

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SPLC2008 / Call for Submissions / Doctoral Symposium

Call for Papers: SPLC Doctoral Symposium

Goal

The goal of the SPLC Doctoral Symposium is to provide a supportive, but challenging environment that enables students to further improve their research work leading to a Ph.D. Students will be given an opportunity to discuss their research, especially goals, methods, and intermediate results with top researchers in the area. This is a unique opportunity for Ph.D. students to gain valuable expert feedback with respect to all aspects of their research work and to get into contact with other students who are at a similar stage of Ph.D. research. The overall aim is to improve the quality and quantity of successful Ph.D. work in the area of software product lines.

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All topics that are relevant to the SPLC are also relevant to the doctoral consortium.

Submission Dates:

Submit your Ph.D. proposal: 15 June, 2008.

Notification: 20 July, 2008.

Revised Version for Distribution: 31 July, 2008

Submission

Submissions to the doctoral symposium consist of two parts: a research abstract and a letter of recommendation. Further information can be found at:

<http://www.lero.ie/SPLC2008/SubmissionGuidelinesforDoctoralSymposium.html>

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Reviewers:

Krzysztof Czarnecki University of Waterloo
Tomi Männistö Helsinki University of Technology
John McGregor Clemson University
Sooyong Park Sogang University
Klaus Schmid University of Hildesheim

Further information:

Further information can be found at:

www.sse.uni-hildesheim.de/en/splc-ds08

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