Welcome to the 16th Workshop on Domain-Specific Modeling

Preface

Domain-Specific Modeling (DSM) is a solution that bridges both issues of productivity and scalability, as they relate to software systems. In DSM, the models are constructed using concepts that represent things in the application domain, not concepts of a given programming language. The modeling language follows the domain abstractions and semantics, allowing developers to perceive themselves as working directly with domain concepts. The models represent simultaneously the design, implementation and documentation of the system. In a number of cases, the final products can be automatically generated from these high-level specifications with domain-specific code generators. This automation is possible because of domain-specificity: both the modeling language and code generators fit to the requirements of a narrowly defined domain, usually inside one organization only.

This workshop, now in its 16th incarnation, provides a forum where freshly conceived ideas can be presented, and new collaborations can be forged through informal discussions and brainstorming. This year the workshop has strong focus on applications and use of DSM: Most of the accepted papers focus on a particular application domain and illustrate the DSM in use. Program includes also three demonstrations describing DSM solutions with tools. Last, but definitely not the least, we have a panel dedicated on the industrial use of DSM with four industry experts sharing their insights into the nature of DSM language design, implementation, and application, as well as the possibilities of diverse organizational introduction and use.

This year we received 11 submissions, of which 5 papers were accepted for publication along with 1 position paper and 3 demonstrations. We have organized these papers into the areas of Languages, Robotics and Safety along with a demonstration session. This workshop has also a tradition for keeping the "work" in workshop, and you will see that time is again devoted to group work and discussion. We hope that you will benefit from listening to, and actively participating in, the discussions that are spawned by the presentations and working groups.

We hope that at the end of the workshop, you will find the presented papers, panel and group work session valuable toward your understanding of the current state-of-the-art in Domain-Specific Modeling, and where to go next.

Juha-Pekka Tolvanen, Matti Rossi, Jonathan Sprinkle, Jeff Gray

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Panel: Industrial Use of Domain-Specific Modeling

Raising the level of abstraction with languages, yet enabling the generation of code and other needed artifacts, has been a successful recipe for productivity and quality improvements for decades. In this panel, we ask experienced industry experts to share their experiences, both good and bad, on applying Domain-Specific Modeling (DSM) in various application areas. The panel discussion will offer insight into the nature of DSM language design, implementation, and application, as well as the possibilities of diverse organizational introduction and use. The audience is welcome to ask their own questions and join with their own opinions and experiences.

Panelists:
Niels Brouwers, Software Architect, Altran
Robert Hendriksen, Software Architect at SoLayTec and Sioux
Gökhan Kahraman, Team Leader, ASELSAN A.S
Jeroen Kouwer, Software Engineering Consultant, Thales

About the panelists:
Niels Brouwers is a software architect at Altran and specialized in the field of model driven engineering. His passion for model driven engineering originated in 2007 and was further pursued by joining Altran, a global leader in innovation and high-tech engineering consulting that strongly believes in Model Driven Engineering, in 2011. For more than 5 years, he has led multiple teams in the development of domain specific languages and advanced code generators that are applied in a large industrial software organization.

Robert Hendriksen joined Sioux, which is based in Eindhoven, the Netherlands, in 2006. He has been involved in various projects for Sioux, but at the moment, he works on a fulltime basis as software architect for SoLayTec's products. Any time left after this is devoted to the construction and application of DSLs.

Gökhan Kahraman received the M.Sc. and Ph.D. degrees in Electrical and Electronics Engineering from Hacettepe University, and Middle East Technical University (METU), Ankara, Turkey, respectively. He is currently working as a senior expert software engineer at ASELSAN A.S. in Turkey. He has over 10 years of experience in embedded software development using model driven development and domain specific modeling approaches, taking on developer, architect and team leader roles in large scale and complex system projects. He is the team leader of the Domain Specific Language (DSL) development team in ASELSAN-REHIS group. This team designed and implemented many DSLs which are used in several projects and these DSLs continue to be evolved and maintained. His Ph.D. work focused on the assessment of DSLs and his current research interests include Domain Specific Languages, quality of DSLs and cyber-physical systems.

Jeroen Kouwer started his career in 1998 at Thales and has worked since then for various companies in order to return to Thales at the end of 2006. Upon returning to Thales he started to work on a software service framework and the modeling methodology on top of this framework. Since then he has applied his modeling and software skills in various projects. He has experience with C, Java, modeling, meta-modeling and DSL development. He has a strong focus on enhancing and simplifying developing and testing of software.

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