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SDL 2011: Integrating System and Software Modeling

15th International SDL Forum
Toulouse, France, July 5-7, 2011
Revised Papers

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Preface

This volume contains the papers and invited contributions presented at the 15th International Conference on System Design Languages (SDL Forum), which took place in Toulouse, France, on July 5–7, 2011, under the organization of the University of Toulouse and the Institute de Recherche en Informatique de Toulouse (IRIT).

The SDL Forum has been held every two years for the last three decades and is one of the most important events in the calendar for anyone from academia or industry involved in system design languages and modelling technologies. It is a primary conference event for the discussion of the evolution and use of these languages. The most recent innovations, trends, experiences, and concerns in the field are discussed and presented. The SDL Forum series addresses issues related to the modelling and analysis of reactive systems, distributed systems, and real-time and complex systems such as telecommunications, automotive, and aerospace applications. The intended audience of the series includes users of modelling techniques in industry, research, and standardization contexts, as well as tool vendors and language researchers.

By adopting a new name as the International Conference on System Design Languages, the conference aims to mark its opening towards all the languages and paradigms of system design.

The program of this year's conference featured three invited talks, two tutorials, and sixteen regular papers. The first talk, in chronological order, was given by Prof. Dorina Petriu from Carleton University, Ottawa, Canada. Her talk, titled "Model-Based Performance Analysis of Service-Oriented Systems" focused on the OMG standard "UML Profile for Modeling and Analysis of Real-Time and Embedded systems" (MARTE) and the way it is used for adding performance annotations and performing analysis on service-oriented models described in UML. The second talk, titled "SCADE: A Comprehensive Framework for Critical System and Software Engineering", was given by Thierry Le Sergent, SCADE System and SCADE Suite Product Manager at Esterel Technologies, Toulouse, France. This talk discussed some of the recurrent problems in system engineering and provided insight into the solutions adopted in Esterel's new system design suite. The third talk was given by Rick Reed, Chairman of the SDL Forum Society and long time contributor to the ITU-T standards into which the SDL Forum community remains strongly rooted. Titled "SDL-2010: Background, Rationale and Survey", his talk brought up the most up-to-date information on the new version of SDL prepared by the ITU-T.

The tutorial part of the program focused on two model-based technologies of high practical interest. The first tutorial, animated by Juha-Pekka Tolvanen, from MetaCase, Finland was titled "How to Implement Domain-Specific Modeling Languages: Hands-on". The participants to this tutorial learned about

domain-specific modeling and code generation, where these technologies can best be used and how to apply them effectively to improve software development. The second tutorial, given by Maxime Perrotin, Eric Conquet, Julien Delange, André Schiele, and Thanassis Tsiodras, from the European Space Agency (ESA), presented "TASTE: A Real-Time Software Engineering Tool-Chain". TASTE stands for "The ASSERT Set of Tools for Engineering", in reference to the European FP6 program where it finds its roots. It consists in an open-source tool-chain dedicated to the development of embedded, real-time systems. TASTE tools are responsible for putting everything together, including drivers and communication means and ensuring that the execution at runtime is compliant with the specification of the system real-time constraints.

The regular program of the conference featured 16 paper presentations. The topics of these papers span from the traditional interest topics for SDL Forum participants, such as the SDL and related languages, testing, services, and components to a wide range of presentations on domain specific languages and applications, going from use case maps to train station models or user interfaces for scientific dataset editors for high performance computing.

Acknowledgements

The conference and this volume could not exist without the contributions of various actors. We thank in particular the authors of the high quality regular contributions. We also express our gratitude to the members of the Program Committee for their commitment and their contributions during the reviewing process. The organization of SDL 2011 was assisted by sponsorship and support from the University of Toulouse, the Midi-Pyrénées Region (France) and PragmaDev.

August 2011

Iulian Ober
Ileana Ober

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SDL 2011 is organized by the University of Toulouse and the Institute de Recherche en Informatique de Toulouse (IRIT) in collaboration with the SDL Forum Society.

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