

Five years of modeling in SoSyM

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The limits of my language are the limits of my world
(Wittgenstein)

Since its inception in 2002 the International Journal on Software and Systems Modeling (SoSyM) has become a major source of quality papers describing research and experience related to building and using models in the development of software-based systems. Papers published in SoSyM cover many aspects of software development; from early business requirements modeling and analysis through system architecting to quality management, maintenance and evolution of software. However, in practice, models are primarily used in two ways: as informal descriptions of concepts to facilitate discussion (e.g., using the UML as a sketching notation), and as bases for generating code (e.g., generating code using model frameworks). Research on model-driven development (MDD) indicates that models can be better leveraged during development. However, there is a need to perform more foundational research and empirical studies to fully understand how the MDD vision of software development can be realized. The journal will continue to play a vital role in nurturing and advancing high quality research in MDD through the publication of results from high quality empirical studies, and of successful or highly promising approaches that address various aspects of MDD.

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We sincerely thank the authors, reviewers, and editors who have contributed to the success of the journal. As we have done on previous anniversaries, we take this opportunity to give a “state of the journal” report and to acknowledge the reviewers, editors, and publication staff that have contributed to another very good year of publication.

The 2006 “State of the Journal” report

The number of institutional subscribers for the paper version of the journal is increasing steadily. On-line access significantly increased in the past year to between 800 and 1,500 downloads/month. In this respect, SoSyM is exceeding initial subscription estimates.

The average number of days from submission to final decision has improved from an average of 6 months in 2005 to an average of 4 months in 2005/2006. We thank our editors and reviewers for their effort in this respect. We have also seen a steady increase in the number of submissions to the journal.

In the past year we were able to extend the editorial board with the following editors:

- Perry Alexander, University of Kansas, USA
- Martin Glinz, University of Zurich, Switzerland
- Hassan Gomaa, George Mason University, USA
- Sébastien Gérard, CEA, France
- Robyn Lutz, Iowa State University/JPL, USA

Forty six (46) special issue papers and thirty five (35) regular papers have been published thus far in SoSyM. A total of two hundred and thirty one (231) authors have papers published in SoSyM.

The good reputation that the journal enjoys is a direct result of the effort and expertise of the editors and reviewers. Below we list the reviewers (excluding members of the editorial board) who reviewed one or more papers for the journal in the last year. A complete list of reviewers that includes editors can be found on our website <http://www.sosym.org/>.

Alan S. Koch
 Albert Zündorf
 Alexander Egyed
 Alexander Pretschner
 Alexander Wißpeintner
 Alexey Cherchago
 Alfonso Pierantonio
 Ambrosio Toval
 Andrea Corradini
 Andrea Zisman
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 Dorina C. Petriu
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 Gerhard Popp
 Gerson Sunyé
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 Giuliano Antoniol
 Gopal Raghavan
 Gordon Blair
 Greg Eisenhauer
 Gregor Kiczales
 Guenter Boeckle
 Guido Wimmel
 Gustavo Rossi
 Guy Genilloud
 Hany Ammar
 Heike Wehrheim
 Heinrich Herre
 Helen Eleri Treharne
 Helen Sharp
 Holger Giese
 Hong Mei
 Hubert Baumeister
 Ileana Ober
 Iman Hafiz Poernomo
 Ina Schieferdecker
 Ivan Kurtev
 Ivan Porres
 Jacqueline Floch
 Jakob Axelsson
 Jan Aagedal
 Jan Brederecke

Jan Hendrik Hausmann
Jan Jürjens
Jan Romberg
Jan Willems
Janette Cardoso
Javier Esparza
Jeanine Souquieres
Jean-Marie Favre
Jean-Philippe Babau
Jeff Gray
Jerome Delatour
Jewgenij Botaschanjan
Jia Zhang
Jidtima Sunkhamani
Jim Steel
Joanne Bechta Dugan
Joao Araujo
Joaquin Lasheras
Joel Champeau
Johann Schumann
Johannes Gruenbauer
Jon Favaro
Jon Hall
Jorge Fox
Jose Luiz Fiadeiro
Jose Ramon Hoyos
Julio Luis Medina
Jun Sun
Jun Suzuki
Katrina Leyking
Ketil Stolen
Kevin P. Tyson
Krzysztof Czarnecki
Kuldar Taveter
Kurt Lautenbach
Kyo Kang
Laurence Tratt
Laurent Gallon
Leila Kloul
Leo Kof
Leon Starr
Lidia Fuentes
Lucia Rapanotti
Luciano Baresi
Ludovic Apvrille
Luigi Lavazza
Luiz Capretz
Luiz Cysneiros
M. de Miguel
Manuel Koch
Marcello Bonsangue
Marina Waldén
Mark David Schulte
Mark Minas
Mark Utting
Marko Boger
Martin Deubler
Martin Rappl
Martin Schindler
Martin Steffen
Martin Strecker
Mass Soldal Lund
Matthias Riebisch
Mauro Pezze
Michael Meisinger
Michaela Huhn
Michelle L. Crane
Monika Maidl
Morgan Bjorkander
Nabil Hameurlain
Nazareno Aguirre
Nicola Guarino
Nicolas Belloir
Olga De Troyer
Omar Aldawud
Omar Boussaid
Paolo Bottoni
Pasha Shabalin
Peter Braun
Peter Buchholz
Peter H. Schmitt
Piotr Kosiuczenko
Pramod Gupta
R. Venkatesh
Radu Iosif
Radu Mateescu
Raghu Reddy
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Sebastian Winter
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 Siv Hilde Houmb
 Stan Sutton
 Stefan Hanenberg
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 Stephan Merz
 Steven Arthur Demurjian
 Sudipto Ghosh
 Susanne Graf
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 Thierry Nodenot
 Thomas Hess
 Thomas Kuhn
 Thomas Kühne
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 Tracy Gardner
 Vadim P. Kyrilov
 Vladimiro Sassone
 Volkmar Lotz
 Weng-Fai Wong
 Wilhelm Hasselbring
 Wilhelm Schöfer
 Yoram Atir
 Zongyan Qiu

We take this opportunity to also thank the guest editors of this year's special sections.

Issue 2006/02 contains a special section on "Service-Based Software Engineering" from the ICSE 2003 Workshop edited by Manfred Broy and Bernhard Schätz, Munich University of Technology, Heinrich-Husmann, Ludwig-Maximilians University Munich, and Ingolf Krüger, University of California, San Diego.

Issue 2006/03 and this publication, Issue 2006/04, contains a special section of two events, the "Dagstuhl Seminar on Language Engineering for Model-Driven Software Development" and the "Workshop on Graph Transformation and Visual Modelling Techniques (GT-VMT) 2004", edited by Jean Bézivin, INRIA and University of Nantes, France, and Reiko Heckel, University of Leicester, UK.

We thank the publishing staff at Springer, namely:

Hermann Engesser, Gabriele Stjepanovic, Anita Bürk, Dorothea Glaunsinger, Elke Janosch and Wayne Yuhasz. They all provided significant assistance during the year. In particular, Hermann Engesser continued to provide us with indispensable assistance and advice on matters pertaining to the management of the journal.

Last but not least, we thank our assistant editors, namely Geri Georg who handles new submissions and monitors the review of regular papers, and Martin Schindler who handles special section papers and Expert papers and manages the publication process for all accepted papers.

The journal's reputation and quality is a direct result of the outstanding support provided by authors, reviewers, editors and the publishing staff. The publishers and editors have given every indication that they are committed to ensuring quality. We are confident that the journal will continue to play an important role in the dissemination of knowledge in the software-based system modeling community.

Contents in this issue

This issue includes two special section papers and three regular papers.

The first two papers of the issue conclude the special section "Language Engineering for Model-Driven Software Development" started in Issue 2006/3 that was edited by Jean Bézivin and Reiko Heckel. These papers are discussed in the Editorial of that issue. The last of these two papers "**Matters of (meta-) modelling**" was written by *Thomas Kühne* and discusses a foundational approach to meta-modelling. The paper proposes a sound theoretical basis that can be used to develop useful tools for meta-modelling. This paper is followed by a discussion paper by *Wolfgang Hesse* titled "**More Matters on (Meta-) Modelling – Remarks on Thomas Kühne's 'matters'**" in which the author comments on the ideas presented in the paper "**Matters of (meta-) modelling**". A response by the author *Thomas Kühne* is also included in the issue. We chose to present the papers in this manner to encourage discussions in this area of study. Use and meaning of models depends, to some extent, on the background of the modeler and on the form of problem to be solved. Publishing papers that discuss other papers and author responses can help readers better understand motivations underlying proposed approaches and encourage other authors to write responses to papers published in SoSyM or its online first version. We do review discussion papers and responses for soundness, but they need not be self contained and thus are reviewed using more liberal criteria.

The second part of this issue contains three regular papers. The regular paper “**Integration of DFDs into a UML-based Model-Driven Engineering Approach**” by *João Miguel Fernandes, Johan Lilius and Dragos Truscan* presents an approach in which the functional and the object-oriented modeling perspectives for embedded systems can be combined. In modeling complex systems, it is important to describe systems from several perspectives. Thus an integrated view of these two modeling perspectives can serve a useful purpose. The authors also embed their approach in a model-driven engineering process with tool support.

The second regular paper “**UML Specification of Access Control Policies and their Formal Verification**” by *Manuel Koch and Francesco Parisi-Presicce* proposes a methodology to integrate access control policies into UML class and object diagrams. The approach utilizes existing UML models and extension mechanisms to ensure compatibility with UML tools. Access control

is an important security concern that should be considered and modeled during the early stages of development. The authors use graph-based semantics for the access control specification in UML as formal basis for the analysis of the policy specification and for the verification of its coherence.

In the regular paper “**TURTLE-P: a UML Profile for the Formal Validation of Critical and Distributed Systems**” by *Ludovic Apvrille, Pierre de Saqui-Sannes and Ferhat Khendek*, a development methodology covering requirement analysis, design and deployment phases is proposed. During each of these phases, formal verification techniques can be applied to appropriate UML diagrams.

We hope you enjoy reading the articles in this issue.

Robert France, Bernhard Rumpe
Editors in Chief