

## *Special section on Modellierung 2002*

### Guest editorial

Published online: 27 February 2003 – © Springer-Verlag 2003

In nearly every field of computer science, models and modeling play an important role. Many researchers concentrate their research on modeling issues in their respective fields, for example in requirements, databases, workflow management or Petri Nets. However, these researchers are typically rooted in the research communities of their specific sub-domains. Modeling, being a cross-cutting issue, has no research community of its own. Consequently, researchers are frequently not aware of modeling research and results outside their own sub-domain.

In 1997, a couple of German-speaking modeling researchers became aware of this problem and developed the idea of bringing together researchers from various fields of computer science who share a common interest in modeling problems. They formed a committee drawn from seven special interest groups of the Gesellschaft für Informatik (GI), the German computing society.

This committee organized a workshop on modeling (*Modellierung'98*) in 1998 in Münster, Germany [1]. This first workshop was felt to be very successful both by the organizers and the participants. So it was decided to make it a regular event. In the subsequent years, workshops were held in Karlsruhe (1999) [2], St. Goar (2000) [3], Bad Lippspringe (2001) [4] and Tutzing (2002) [5].

The goal of the *Modellierung* workshop series is to provide a platform for interdisciplinary exchange of approaches and experience in the field of modeling, where participants from academia and industry can work out commonalities, differences and deficits of the modeling approaches they are using and where they can share ideas and experience. In order to broaden the scope, speakers from disciplines other than computer science were invited to some of the workshops.

Having been appointed Co-Chairs of the *Modellierung 2002* workshop, we heard about the plans to found a new journal on Software and Systems Modeling (SoSyM). We

immediately recognized that this journal pursued the same goals on an international scale as the *Modellierung* workshop series did in the German-speaking countries. Thus we contacted the Editors-In-Chief of SoSyM and discussed the idea of publishing extended versions of selected papers from the *Modellierung 2002* workshop in a special section of SoSyM. To our delight, the SoSyM editors were as excited about our idea as we were. In this issue of SoSyM we present the results of this idea.

The contributions to *Modellierung 2002* cover a broad range of topics, including foundations of modeling, modeling and XML, problems of modeling in practice, product and process modeling, presentation models and modeling in software development.

We have selected three contributions for this special section: one on the problem of modeling as such, one on modeling variability in software product family development and one on a workflow modeling problem.

The paper *Models in software engineering – an introduction* by Jochen Ludewig gives an introduction to the concept of modeling. Ludewig provides definitions based on Stachowiak's theory of modeling [6] and discusses various facets of modeling. He then describes the role of models in software engineering, concentrating on the notion of software as a model of some part of the world. Finally, he discusses common problems and pitfalls of modeling, in particular the problem of confusing the model and reality and the problems associated with the use of descriptive models.

Variability is a core concept in software product family development. It allows constructive reuse and facilitates the derivation of different, customer-specific products from the product family. In their paper *Communicating the variability of a software-product family to customers*, Günter Halmans and Klaus Pohl discuss the problem of communicating the variability of a software

product family to customers. This is a crucial prerequisite for making software product families a success. Halmans and Pohl introduce a model of variability that is based on use cases. As classic use cases are not expressive enough, they define model extensions that allow the expressing of variability in a more intuitive and straightforward way.

The third paper, *Dealing with forward and backward jumps in workflow management systems*, by Manfred Reichert, Peter Dadam and Thomas Bauer, discusses an approach for introducing flexibility into workflow modeling and execution, in particular for handling exceptional situations. The authors describe in detail a concept for allowing deviations from a given workflow model. Their model can handle both the case where potential deviations are known a priori and the situation where authorized users may dynamically deviate from the pre-modeled workflow at runtime in order to deal with unforeseen events. Forward and backward jumps in the workflow are the key modeling concept for dealing with such exceptions.

We would like to thank the Editors-In-Chief of SoSyM, Bernard Rumpe and Robert France for making this special section possible. Our thanks also go to the authors of the contributions for the careful preparation of their papers and for their patience and dedication when incorporating all the wishes and recommendations of the reviewers and the editors. Last but not least we thank the referees for doing two thorough rounds of reviewing.

#### Corrigenda: Reference 4

Engels, G., Oberweis, A., Zündorf A. (eds.): Modellierung 2001. Workshop of the GI, Bad Lippspringe. GI-Edition – Lecture Notes in Informatics, vol. P-1, 2001.

Finally, we hope that you, dear reader, will enjoy the result.

Martin Glinz and Günther Müller-Luschnat  
Guest Editors/Co-Chairs *Modellierung 2002*

#### References

1. Pohl, K., Schürr, A., Vossen, G. (eds.): Modellierung'98 (Proceedings), Report No. 6/98-I, Angewandte Mathematik und Informatik, Universität Münster. Papers are online available at <http://SunSITE.Informatik.RWTH-Aachen.DE/Publications/CEUR-WS/Vol-9>
2. Desel, J., Pohl, K., Schürr, A. (eds.): Modellierung'99. Workshop of the Gesellschaft für Informatik, Karlsruhe. Teubner, Stuttgart, 1999.  
Web page: <http://www-i5.informatik.rwth-aachen.de/mod99>
3. Ebert, J., Frank, U. (eds.): Modelle und Modellierungssprachen in Informatik und Wirtschaftsinformatik – Beiträge des Workshops Modellierung 2000. Fölbach, Koblenz, ISBN 3-934795-15-3, 2000.  
Web page: <http://www.uni-koblenz.de/~iwi/mod2000.html>
4. Engels, G., Oberweis, A., Zündorf, A. (eds.): Modellierung 2001. Workshop of the GI, Tutzing. GI-Edition – Lecture Notes in Informatics, vol. P-1, 2001. Web pages: <http://www.uni-paderborn.de/cs/mod2001>, <http://www.gi-ev.de/LNI/proceedings/P-1.shtml>
5. Glinz, M., Müller-Luschnat, G. (eds.): Modellierung 2002. Workshop of the GI, Tutzing. GI-Edition – Lecture Notes in Informatics, vol. P-12, 2002.  
Web pages: <http://www.modellierung2002.de>, <http://www.gi-ev.de/LNI/proceedings/P-12.shtml>
6. Stachowiak, H.: Allgemeine Modelltheorie [A general theory of modeling (in German)] Springer, Vienna, 1973