Message from the Modellierung'22 Workshop Chairs

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This volume includes the proceedings of the Workshops of the 2022 Modellierung conference (Modellierung'22). As a forum for foundations, methods, techniques, tools as well as domains and applications of modeling, the Modellierung conference series, which has been organized by the Cross-Sectional Expert Committee on Modeling ("Querschnittsfachausschuss Modellierung") of the Gesellschaft für Informatik (GI) since 1998, has established itself as a central conference on modeling topcis for German-speaking researchers. The Modellierung conference series serves as a platform to exchange experiences and insights on modeling for which it addresses an audience from both practice and academia. The workshops were held on the 27th and 28th of June 2022 in Hamburg.

1 Workshops

The workshops were selected by the workshop chairs, considering the feasibility of the proposed workshop and the potential to attract an engaged audience. The following workshops were accepted for Modellierung'22:

- **Workshop on Modellierung in der Hochschullehre (MoHoL'22)**. So far, modeling in academics is taught in classic classroom-style teaching, e.g., lectures. However, in the last decades, scientific research and academic didactics demand a change of perspective from a lecturer-centric one to a student and competence-related perspective on teaching. This perspective requires the active participation of students in applying theoretical knowledge. At the same time, not least because of the Bologna Process, the question regarding the quality of academic degrees, and the corresponding capability to check the students' achievements in an objective, fair, and learning goal-oriented way. Teaching modeling has to face these challenges, too. The target audience for this workshop is all who are interested in and participate in modeling in the academic domain.

- **Workshop on Modelle und KI (MoKI'22)**. The increasing availability of a large amount of data in all application areas effects a growing interest in artificial intelligence

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("künstliche Intelligenz (KI)ïn German). The new paradigm of data-driven AI, i.e., learning (domain-) models and their update using data mining techniques is popular because it decreases the effort to create application systems. However, it has many disadvantages. This workshop is interested in any submission regarding interfaces between conceptual modeling and AI.

- **Workshop on Modeling in (and for) Production (MoPro'22)**. The production domain is permeated by heterogeneous data sources, a variety of IT systems, and complex industrial use cases - aspects that offer an exciting field for research. The MoPro Workshop aims to be a platform for researchers and practitioners within the production domain to exchange their modeling techniques, interesting use cases, and challenges. This workshop is interested in the use of models for development, production, and usage cycles, as well as model-based and model-driven approaches that span these domains across disciplinary boundaries.

- **Workshop on State of the Art Methods and Tools in Model-based Systems Engineering (SpesML'22)**. The transition from document-based to model-based systems engineering (MBSE) offers an approach to develop complex cyber-physical systems in a interdisciplinary context in a sustainable and comprehensible way. The capability of companies to efficiently develop these systems in a interdisciplinary context is a competitive factor already.

- **Workshop on Research Data Management in Modeling (RDM4MOD'22)**. The demand increases to substantiate the claims made in the scientific processes in the realm of modeling in all areas of computer science. Thus, publications, funding proposals etc. require more often that empirical data (if available) along with the related context of experiments and the artifacts in terms of descriptions, software and other tools will be part of the publication or proposed project as well. Infrastructure will be provided to store and make available this kind of research data according to the FAIR – principles (Findable, Accessible, Interoperable, Reusable) as part of the National Research Data Infrastructure. With this workshop, the consortium NFIDxCS aims at collecting requirements and existing approaches to build such an infrastructure with a special focus on modeling issues.

- **Workshop on Modellierung und Simulation im Engineering und zur virtuellen Inbetriebnahme im Maschinen- und Anlagenbau (VDI/VDE-GMA FA 6.11 Virtuelle Inbetriebnahme)**. In the past years, virtual commissioning ("virutelle Inbetriebnahme (VIBN)") evolved into an established tool for engineering machines and plants. However, there are still several challenges and many companies have not integrated virtual commissioning into their commissioning processes. The basic idea of virtual commissioning is testing an automation system for the production plant with a digital model before the physical plant is built. Ideally, this happens in real-time. For the underlying model, the term executable digital twin has proven suitable.

2   Acknowledgements and Thanks

We would like to thank all those who contributed to making the Modellierung'22 workshops possible. First of all, we would like to thank the workshop organizers for their workshop ideas and the engagement and energy they put into making the workshops a reality. Namely, we thank:

- Meike Ullrich, Peter Fettke, Peter Pfeiffer, Selina Schüler and Michael Striewe for organizing the workshop on Modellierung in der Hochschullehre (MoHoL'22)

- Dominik Bork, Peter Fettke and Ulrich Reimer for organizing the workshop on Modelle und KI (MoKI'22)

- Judith Michael and István Koren for organizing the workshop on Modeling in (and for) Production (MoPro'22)

- Wolfgang Böhm, David Schmalzing and Nico Jansen for organizing the workshop on State of the Art Methods and Tools in Model-based Systems Engineering (SpesML'22)

- Michael Goedicke and Ulrike Lucke for organizing the workshop on Research Data Management in Modeling (RDM4MOD'22)

- Ronald Schmidt-Vollus for organizing the workshop on Modellierung und Simulation im Engineering und zur virtuellen Inbetriebnahme im Maschinen- und Anlagenbau (VDI/VDE-GMA FA 6.11 Virtuelle Inbetriebnahme)

Furthermore, we are grateful to the members of the workshop program committees, who reviewed the workshop submissions and ensured the quality of the presented research. Additional thanks go to the authors of all workshop submissions and the attendees of the workshops for making Modellierung'22 an interesting venue.

A special thanks goes to the General Chairs of the Modellierung'22 Matthias Riebisch and Marina Tropmann, as well as the tools and demo chairs Dominik Borg and Simon Hacks, as well as the program committee co-chairs Stephanie Schulte, Sabine Schumann and Sabrina Göllner.

Finally, we would like to acknowledge the team of the GI Digital Library who made publishing this volume possible, as well as the EasyChair team, whose software was instrumental during the review processes.

Aachen, Stuttgart, June 2022
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