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Editorial for the Software Engineering 2013 Conference

Software: Innovator for Economy and Society

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Software has evolved from tools and appliances to a driving force of innovations in economy and society. Software advances and stimulates society by providing and enabling, e.g., ubiquitous communication channels, efficient development of medication, flexible materials, energy efficient automobiles, autonomous robots, intelligent resource management, earth-quake-proof buildings, and smart cyber-physical systems.

Software as the subject of software engineering has become a significant innovator. The demand for software is growing in projects of all industries and so is its complexity. Resulting challenges can only be met by adapted education possibilities and innovative software engineering methods.

The Software Engineering 2013 Conference fostered the discussion of industrial experience on novel engineering methods and software solutions from various fields. The event promoted communication between research and practice, between academia and industry, and among individual software engineers. Good communication is a necessity for maintaining and strengthening competitiveness in industry and academia.

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The Software Engineering Conference series is organized and supported by the Software Engineering division of the German Informatics Society. It is an annual German event with participants mainly from Austria, Germany, and Switzerland.

The Software Engineering Conference of 2013 was hosted by RWTH Aachen University. It was organized by the chair for Embedded Software and the chair for Software Engineering. Out of 59 submissions the program committee selected 20 research papers and reports of applications and technology transfers to be presented at the conference. The proceedings of the conference [1] appeared in the Lecture Notes in Informatics series. Before, during, and after the conference nine workshops [4] and six tutorials about current, innovative, and practice-oriented topics took place.

For the first time the Software Engineering Conference was co-located with the conference Software Engineering Essentials (SEE) [2] and the workshop Software Engineering im Unterricht der Hochschulen (SEUH) [3] leading to a total of more than 400 participants from industry and academia.

This special issue contains a collection of extended articles selected from the best works presented at the Software Engineering Conference: the work "Synthesizing Realistic Test Models" by Hamed Shariat Yazdi, Pit Pietsch, Timo Kehrer, and Udo Kelter received the highest reviewer scores out of all submissions to the conference. The program committee has awarded this paper with the Software Engineering 2013 Best Paper Award. Heinzemann et al. present a multitude of refinement definitions for different automaton kinds of MechatronicUML and their selection criteria in "Automata-Based Refinement Checking for Real-Time Systems". Jung et al. present a model-driven approach for the structured development of 3D applications based on round-trip engineering in "Structured Development of 3D Applications: Round-Trip Engineering in Interdisciplinary Teams". Ziegert

and Wehrheim present a method for software architecture reconfiguration that takes into account reconfiguration times in "Temporal Plans for Software Architecture Reconfiguration".

Three of the articles in this special issue are invited contributions by experts providing a deeper insight into the topics of their keynotes given at the conference. The topics of the invited contributions include an overview of the DFG Priority Programme for Long-Living Software Systems, research on automatic service discovery and composition in heterogeneous domains, and an investigation of the role, value, and usage of shared understanding in software engineering.

A special thanks for participating in the selection and improvement of the works presented at the conference and all articles published in this special issue goes to the members of the SE2013 program committee, the SE2013 subreviewers, and the reviewers of the articles of this special issue: Asim Abdulkhaleq, Colin Atkinson, Bernhard Bauer, Thomas Bauer, Steffen Becker, Christian Berger, Alexander Bergmayr, Manfred Broy, Holger Breitling, Bernd Bruegge, Andrea Caracciolo, Marie Christin Platenius, Harald Cichos, Alexander Delater, Ana Dragomir, Kristian Duske, Zoya Durdik, Jürgen Ebert, Gregor Engels, Stephan Faßbender, Masud Fazal-Baqaie, Andreas Ganser, Tobias George, Christian Gerth, Christian Gierds, Holger Giese, Mario Gleirscher, Martin Glinz, Michael Goedicke, Ursula Goltz, Radu Grosu, Volker Gruhn, Wilhelm Hasselbring, Regina Hebig, Maritta Heisel, Joerg Henss, Stefan Hofer, Oliver Hummel, Paul Huebner, Stefan Jähnichen, Matthias Jarke, Gerti Kappel, Christian Kästner, Timo Kehrer, Andreas Koch, Anne Koziolek, Udo Kelter, Jens Knoop, Claus Lewerentz, Horst Lichter, Peter Liggesmeyer, Florian Matthes, Oscar Nierstrasz, Andreas Oberweis, Barbara Paech, Helmut Partsch, Peter Pepper, Klaus Pohl, Alexander Pretschner, Wolfgang Reisig, Ralf Reussner, Matthias Riebisch, Gunter Saake, Thomas Santen, Ina Schäfer, Wilhelm Schäfer, Bernhard Schätz, Bastian Schlich, Klaus Schmid, Kurt Schneider, Andy Schürr, Friedrich Steimann, Gabriele Taentzer, Stefan Tai, Birgit Vogel-Heuser, Markus Voß, Stefan Wagner, Andreas Winter, Mario Winter, Uwe Zdun, Andreas Zeller, Heinz Züllighoven, and Albert Zündorf.

We would also and especially like to thank the sponsors of the conference. Without their sponsoring the Software Engineering Conference would not have been possible. Platinum sponsors: DSA Daten- und Systemtechnik GmbH, QSC AG; Gold sponsors: 4Soft GmbH, ABB Asea Brown Boveri Ltd, adesso AG, ANECON GmbH, arvato AG, Audi Electronics Ventuer GmbH, C1 WPS—Workplace Solutions GmbH, Carmeq GmbH, Generali Informatik Services, MathWorks, Volkswagen AG; Silver sponsors: Accso—Accelerated Solutions GmbH, IVU Traffic Technologies AG, msg systems AG; Bronze sponsors: dpunkt.verlag GmbH, I.R.I.S. AG, iSQI GmbH, and Verein zur Weiterentwicklung des V-Modell XT (e.V.).

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Most importantly, we thank all attendants of the conference for having made the Software Engineering Conference 2013 in Aachen a vibrant place for fruitful discussion and mutual inspiration for innovation in economy and society.

Please enjoy reading the papers published here.

S. Kowalewski, J. O. Ringert, and B. Rumpe

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