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Integrated Formal Methods

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Proceedings

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Foreword

iFM 2012, the 9th International Conference on Integrated Formal Methods, and ABZ 2012, the 3rd International Conference on Abstract State Machines, Alloy, B, VDM, and Z, were joined in a single event, iFM&ABZ 2012, to celebrate Egon Börger's 65th birthday and his contribution to state-based formal methods.

This colocation of iFM&ABZ 2012 was hosted by the Institute of Scienza e Tecnologie dell'Informazione "A. Faedo" of the National Research Council (ISTI-CNR) of Italy and took place at the Area della Ricerca del CNR in Pisa, during June 18–21, 2012.

We would like to thank everyone in Pisa for making us feel very welcome during our time there. It was a pleasure to run an event to honor Egon.

Professor Egon Börger was born in Bad Laer, Lower Saxony, Germany. Between 1965 and 1971 he studied at the Sorbonne, Paris (France), Université Catholique de Louvain and Institut Supérieur de Philosophie de Louvain (in Louvain-la-Neuve, Belgium), and the University of Münster (Germany). Since 1985 he has held a Chair in computer science at the University of Pisa, Italy. In September 2010 he was elected as member of the Academia Europaea. Throughout his work he has been a pioneer of applying logical methods in computer science. Particularly notable is his contribution as one of the founders of the Abstract State Machine (ASM) method. Egon Börger has been cofounder and Managing Director of the Abstract State Machines Research Center (see www.asmcenter.org).

Building on his work on ASM, he was a cofounder of the series of international ASM workshops, which were part of this year's conference under the ABZ banner. He contributed to the theoretical foundations of the method and initiated its industrial applications in a variety of fields, in particular programming languages, system architecture, requirements and software (re-)engineering, control systems, protocols and Web services. In 2007, he received the Humboldt Research Award.

He has been coauthor of several books and over 150 research papers; he has organized over 30 international conferences, workshops, schools in logic and computer science.

As one can see, his influence has been broad as well as deep. It is an influence that ones finds in all of the notations covered in the ABZ conference, as well as in the iFM event and the various integrations and combinations of formal methods seen therein. Neither iFM or ABZ have been here before, and it is thus especially fitting that we held such an event in Pisa, where Egon has held a Chair for many years.

In addition to contributed papers, the conference programme included two tutorials and three keynote speakers. The tutorials were offered by: Eric C.R. Hehner on "Practical Predicative Programming Primer" and Joost-Pieter Katoen, Thomas Noll, Alessandro Cimatti and Marco Bozzano on "Safety, Dependability and Performance Analysis of Extended AADL Models." We are grateful to Egon Börger, Muffy Calder and Ian J. Hayes for accepting our invitation to address the conference.

Each conference, ABZ and iFM, had its own Programme Committee Chairs and Programme Committees, and we leave it to them to describe their particular conference. We shared invited speakers, so all conference attendees had the opportunity to hear Egon, Muffy and Ian. We also shared some technical sessions so that all participants could see some of the best technical work from each conference.

We would like to thank the Programme Committee Chairs, Diego Latella, CNR/ ISTI, Italy and Helen Treharne, University of Surrey, UK for iFM 2012; Steve Reeves, University of Waikato, New Zealand and Elvinia Riccobene, University of Milan, Italy for ABZ 2012 for their efforts in setting up two high-quality conferences.

We also would like to thank the members of the Organizing Committee as well as several other people whose efforts contributed to making the conference a success and particular thanks go to the Organizing Committee Chair Maurice ter Beek.

June 2012

John Derrick
Stefania Gnesi

Preface

This volume contains the proceedings of iFM 2012, the 9th International Conference on Integrated Formal Methods, held during June 18–21, 2012, in Pisa, Italy, jointly with ABZ 2012, the 3rd International Conference on Abstract State Machines, Alloy, B, VDM, and Z, in honor of Egon Börger's 65th birthday. The ABZ proceedings appear as a separate LNCS volume, number 7316. The invited talk of Egon Börger appears in both proceedings.

The iFM conference programme also included an invited talk by Muffy Calder and the ABZ conference programme included an invited talk by Ian Hayes.

Previous iFM conferences were held in York, Dagstuhl, Turku, Canterbury, Eindhoven, Oxford, Düsserldorf and Nancy. The iFM conference series seeks to further research into the combination of different formal methods for modelling and analysis. However, the work of iFM goes beyond that, covering all aspects from language design, verification techniques, tools and the integration of formal methods into software engineering practice.

iFM 2012 received 59 submissions, covering the spectrum of integrated formal methods, ranging across formal and semi-formal modelling notations, semantics, proof frameworks, refinement, verification, timed systems, tools and case studies. Each submission was reviewed by at least three Programme Committee members. The committee decided to accept 22 papers.

The conference was preceded by a day dedicated to tutorials on "Practical Predicative Programming Primer" by Eric C. R. Hehner and "Safety, Dependability and Performance Analysis of Extended AADL Models" by Joost-Pieter Katoen, Thomas Noll, Alessandro Cimatti and Marco Bozzano.

We are grateful to the members of the Programme Committee and the external reviewers for their diligence and thoroughness. We also appreciate the support of EasyChair for managing the reviewing process and the preparation of the proceedings. We thank all those involved in organizing the conference and an important note of thanks must be extended to the members of CNR who helped locally.

June 2012

Diego Latella
Helen Treharne

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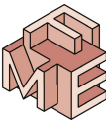

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Table of Contents