

Domain-Specific Conceptual Modeling

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John Mylopoulos
Editors

Domain-Specific Conceptual Modeling

Concepts, Methods and Tools

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ISBN 978-3-319-39416-9

ISBN 978-3-319-39417-6 (eBook)

DOI 10.1007/978-3-319-39417-6

Library of Congress Control Number: 2016940818

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Printed on acid-free paper

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Preface

This book represents the result of a community effort and cooperation to create and develop modeling methods and languages, based on the OMiLAB¹ Collaborative Environment.

It aims to increase the visibility of domain-specific conceptual modeling by presenting work of thought leaders who designed and deployed a specific modeling method. Furthermore it provides a hands-on guidance on how to build models in a particular domain, such as requirements in engineering, business process modeling or enterprise architecture. Not only the results are presented, but also the ideas for future developments are communicated.

All this is enriched with any exercises, case studies, papers and updated information the authors deem important. All domain-specific methods described in this volume have also a tool implementation within the OMiLAB. This opens up possibilities to involve a wide community of further developers and users.

The Open Models Laboratory (OMiLAB) is a dedicated research and experimentation space for modeling method engineering. Being both a physical and virtual place, it is equipped with tools to explore method creation and design, experiment with method engineering and deploy software tools for modeling. The laboratory offers also a portal, through which the scientific community can bring in their ideas related to conceptual modeling issues and engage in their exploration process.

We are confident that this book will benefit experts and practitioners from academia and industry, members of the conceptual modeling community as well as lecturers and students.

A large scientific community was involved in creating this book and we would like to extend our gratitude to each and everyone for their contribution. First of all, we thank all the authors who submitted their work and provided their expertise in

¹www.omilab.org

this field, and reviewers for their helpful feedback. Our special thanks to Ms. Iulia Vaidian for administrative support of the editors, also to Prof. Ovidiu Matiu for language editing. We are thankful for the support received from the team at Springer led by Ralf Gerstner in the publication of this book.

We highly appreciate the efforts from all of those involved!

April 2016

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About the Editors

Dimitris Karagiannis holds a full professor position for Business Informatics at the University of Vienna since 1993, leading the Research Group Knowledge Engineering. He earned a PhD degree from the Technical University Berlin in 1987. The same year he joined the Research Institute for Application-oriented Knowledge Processing in Ulm as division head for “Enterprise Information Systems”. Karagiannis holds an honorary professorship from the Babes-Bolyai University in Cluj-Napoca, Romania. His research interests include meta-modelling, knowledge engineering, business process management, enterprise architecture management and artificial intelligence. The industrial application of his meta-modelling research was demonstrated within the BOC Group, a European software- and consulting company. In parallel scientific applications of his research are used in the Open Models Laboratory—OMiLAB, <http://www.omilab.org>, an open collaborative environment for modelling method engineering, which he has established and is currently leading.

Heinrich C. Mayr has been a full professor of Informatics at Universität Klagenfurt since 1990, leading the Application Engineering Research Group. Until then he was an assistant professor at the University of Karlsruhe (today: KIT), visiting professor at several universities, and CEO of a German software company. His research is documented in over 200 publications and includes information system design methodologies, requirements and model engineering, and knowledge management. Amongst other functions, he was President of the Gesellschaft für Informatik (GI), Vice President of the Council of European Professional Informatics Societies (CEPIS), and chairman of the board of trustees of a regional utility company. For 6 years he served as Rector of the University. Currently he is editor in chief of the Lecture Notes in Informatics (LNI), vice-chair of the ER steering committee, chairperson of the council of the Software Internet Cluster SIC, and Member of the TC Wirtschaftsinformatik of the German Accreditation Organisation ASIIN.

John Mylopoulos holds a professor emeritus position at the Universities of Toronto and Trento. He earned a PhD degree from Princeton University in 1970 and joined the faculty of the Department of Computer Science at the University of Toronto the same year. His research interests include conceptual modelling, requirements engineering, data semantics and knowledge management. Mylopoulos is a fellow of the Association for the Advancement of Artificial Intelligence (AAAI) and the Royal Society of Canada (Academy of Applied Sciences). He has served as programme/general chair of international conferences in Artificial Intelligence, Databases and Software Engineering, including IJCAI (1991), Requirements Engineering (1997, 2011), and VLDB (2004). Mylopoulos is currently leading a project titled “Lucretius: Foundations for Software Evolution <<http://www.lucretius.eu/>>”, funded by an advanced grant from the European Research Council.