Information Systems Development
Information Systems Development

Business Systems and Services: Modeling and Development
This book is the outcome the 19th International Conference on Information Systems Development (ISD 2010), hosted by the faculty of Mathematics and Physics, Charles University in Prague during 25–27 August 2010.

The ISD conference evolved from the first Polish-Scandinavian Seminar on Current Trends in Information Systems Development Methodologies held in Poland in 1988. It was a great honor for us to organize the nineteenth within this series of conferences.


In addition, there were three presentations of ISD 2010 keynote speakers: Jan L.G. Dietz (Delft University of Technology, The Netherlands), John Traxler (University of Wolverhampton, United Kingdom), and Robert Winter (University of St. Allen, Switzerland).

This book contains all papers scheduled for presentation at ISD 2010 Conference, except those contributions accepted as posters. EasyChair tool was used as conference software both for authors and Program Committee members. In response to the Call for Papers, 112 were received by the submission deadline of April 25, 2010. Of them, 62 were selected by the Program Committee for presentation. This represents an acceptance rate approximately 55%. All papers were peer reviewed by 3 or 4 referees.

We have also selected two papers to share the Best Paper Award. The first one is “Adapting the Lesk Algorithm for Calculating Term Similarity in the Context of
Requirements Engineering” by Jürgen Vöhringer and Günther Fliedl. The second one is “Towards understanding contradictions in enterprise system implementations—insights from a case study” by Stig Nordheim.

We are grateful to the international advisory committee for providing guidance and moral support during the submission process. We also thank to those behind the scene, i.e. to members of the Program Committee for their timely evaluation of submitted papers. Then we would also like to thank and acknowledge the work of Alena Buchalcevová for managing EasyChair system and Matúš Ondreička for valuable activities with preparation and maintenance of the conference web site. We are also grateful to Action M Agency for its effort in local arrangements.

Prague, August 2010

Jaroslav Pokorný, General Chair
Karel Richta and Václav Řepa, PC Chairs
Matúš Ondreička, Proceedings Editor
The 19th International Conference on Information Systems Development was hosted by Faculty of Mathematics and Physics, Charles University in Prague, and organized by Department of Software Engineering in cooperation with Action M Agency, Prague. The theme of the conference is “Business Systems and Services: Modelling and Development”. The organization and management of such a major international conference requires the collaboration and dedication of very many people. We are especially grateful to our international programme committee who voluntarily gave their time to review the submissions. The excellent standard of papers contained within this volume bears testimony to the diligence and rigour of the peer review process. We are also very appreciative of the efforts of all the committee.

**General Chair**

Jaroslav Pokorný  
Charles University, Prague, Czech Republic

**Programme Chairs**

Karel Richta  
Charles University, Prague, Czech Republic  
Václav Řepa  
University of Economics, Prague, Czech Republic

**International Advisory Committee**

Chris Barry  
National University of Ireland, Galway, Ireland  
Michael Lang  
National University of Ireland, Galway, Ireland  
Henry Linger  
Monash University, Melbourne, Australia  
Wita Wojtkowski  
Boise State University, Boise, ID, USA
Organising Committee Chair

Milena Ziethamlová  Action M Agency, Prague, Czech Republic

Organising Committee

Alena Buchalcevová  University of Economics, Prague, Czech Republic
Pavla Kozáková  Action M Agency, Prague, Czech Republic
Jiří Novák  Charles University, Prague, Czech Republic
Matúš Ondrejčka  Charles University, Prague, Czech Republic
Helena Palovská  University of Economics, Prague, Czech Republic
Blanka Puková  Action M Agency, Prague, Czech Republic

International Program Committee

Backlund Per  University of Skovde, Sweden
Barry Chris  National University of Ireland, Galway, Ireland
Barzdins Janis  University of Latvia, Riga, Latvia
Borzovs Juris  Information Technology Institute, Latvia
Buchalcevová Alena  University of Economics, Prague, Czech Republic
Burdescu Dumitru  University of Craiova, Romania
Butleris Rimantas  Kaunas University of Technology, Lithuania
Caplinskas Albertas  Institute of Mathematics and Informatics, Vilnius, Lithuania
Connor Andy  Auckland University of Technology, New Zealand
Dalcher Darren  Middlesex University, London, United Kingdom
Du Xiaofeng  British Telecom, United Kingdom
Eessaar Erki  Tallinn University of Technology, Estonia
Eriksson Owen  Dalarna University College, Borlnge, Sweden
Escalona María-José  University of Sevilla, Spain
Feuerlicht George  University of Technology Sydney, Australia
Fredriksson Odd  Karlstad University, Sweden
Fisher Julie  Monash University, Melbourne, Australia
Guizzardi Giancarlo  Federal University of Espirito Santo, Vitoria, Brazil
Granić Andrina  University of Split, Croatia
Grundspenks Janis  Riga Technical University, Latvia
Gustas Remigijus  Karlstad University, Sweden
Haav Hele-Mai  Institute of Cybernetics at Tallinn Technical University, Estonia
Hawryszkiewycz Igor  University of Technology Sydney, Australia
Hevner Alan  University of South Florida, USA
Ivanov Sergey  George Washington University, USA
Ivanovic Mirjana  
University of Novi Sad, Serbia and Montenegro

Jaccheri Letizia  
Norwegian University of Science and Technology, Norway

Kautz Karlheinz  
Copenhagen Business School, Denmark

Kirikova Marite  
Riga Technical University, Latvia

Krishna Aneesh  
Curtin University of Technology, Perth, Australia

Kuusik Rein  
Tallinn University of Technology, Estonia

Kuznetsow Sergei  
Institute for System Programming of Russian Academy of Science, Russia

Lang Michael  
National University of Ireland, Galway, Ireland

Leppanen Mauri  
University of Jyvaskyla, Finland

Linger Henry  
Monash University, Australia

Maciaszek Leszek A.  
Macquarie University, Australia

Magyar Gabor  
Magyar Budapest University of Technology and Economics, Hungary

Moreton Robert  
University of Wolverhampton, United Kingdom

Nemuraite Lina  
Kaunas Technical University, Lithuania

Nilsson Anders G.  
Karlstad University, Sweden

Noran Ovidiu  
Griffith University, Australia

Norbjerg Jacob  
Copenhagen Business School, Denmark

Palovská Helena  
University of Economics, Prague, Czech Republic

Pankowska Malgorzata  
University of Economics in Katowice, Poland

Paspallis Nearchos  
University of Cyprus, Cyprus

Pastor Oscar  
University of Valencia, Spain

Pirotte Alain  
University of Louvain, Belgium

Plantak Vukovac Dijana  
University of Zagreb, Croatia

Ramos Isidro  
Universitat Politecnica de Valencia, Spain

Riha Karel  
Kingston University, London, United Kingdom

Rouibah Kamel  
Kuwait University, Kuwait

Schioptiu Burlea Adriana  
University of Craiova, Romania

Söderström Eva  
University of Skovde, Sweden

Sokolovsky Zbynek  
Technical University in Darmstadt, Germany

Song William  
Durham University, United Kingdom

Stamelos Ioannis  
Aristotle University, Greece

Strahringer Susanne  
Technische Universitat Dresden, Germany

Sukovskis Uldis  
Riga Technical University, Latvia

Traxler John  
University of Wolverhampton, United Kingdom

Unold Jacek  
Wroclaw University of Economics, Poland

Vasiliecas Olegas  
Vilnus Gediminas Technical University, Lithuania

Vossen Gottfried  
University of Munster, Germany

Welch Christine  
University of Porthmouth, United Kingdom

Winter Robert  
University St. Gallen, Switzerland

Wrycza Stanislaw  
University of Gdansk, Poland

Zendulka Jaroslav  
Brno University of Technology, Czech Republic

Zurada Jozef  
University of Louisville, USA

Zupančič Jože  
University od Maribor, Slovenia
### Referees

<table>
<thead>
<tr>
<th>Per Backlund</th>
<th>Alan Hevner</th>
<th>Alain Pirotte</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chris Barry</td>
<td>Sergey Ivanov</td>
<td>Isidro Ramos</td>
</tr>
<tr>
<td>Janis Barzdins</td>
<td>Mirjana Ivanovic</td>
<td>Karel Riha</td>
</tr>
<tr>
<td>Juris Borzovs</td>
<td>Letizia Jaccheli</td>
<td>Kamel Rouibah</td>
</tr>
<tr>
<td>Dumitru Burdescu</td>
<td>Karlheinz Kautz</td>
<td>Zbynec Sokolovsky</td>
</tr>
<tr>
<td>Adriana Schiopiu Burlea</td>
<td>Marite Kirikova</td>
<td>William Song</td>
</tr>
<tr>
<td>Rimantas Butleris</td>
<td>Aneesh Krishna</td>
<td>Ioannis Stamelos</td>
</tr>
<tr>
<td>Albertas Caplinskas</td>
<td>Rein Kuusik</td>
<td>Susanne Strahringer</td>
</tr>
<tr>
<td>Andy Connor</td>
<td>Sergei Kuznetsow</td>
<td>Uldis Sukovskis</td>
</tr>
<tr>
<td>Darren Dalcher</td>
<td>Michael Lang</td>
<td>Eva Söderström</td>
</tr>
<tr>
<td>Xiaofeng Du</td>
<td>Mauri Lepponen</td>
<td>John Traxler</td>
</tr>
<tr>
<td>Erki Eessaar</td>
<td>Henry Linger</td>
<td>Jacek Unold</td>
</tr>
<tr>
<td>Owen Eriksson</td>
<td>Leszek A. Maciaszek</td>
<td>Olegas Vasilecas</td>
</tr>
<tr>
<td>Maria-Jose Escalona</td>
<td>Gabor Magyar</td>
<td>Gottfried Vossen</td>
</tr>
<tr>
<td>George Feuerlicht</td>
<td>Robert Moreton</td>
<td>Dijana Plantak Vukovac</td>
</tr>
<tr>
<td>Julie Fisher</td>
<td>Lina Nemuraite</td>
<td>Christine Welch</td>
</tr>
<tr>
<td>Odd Fredriksson</td>
<td>Anders G. Nilsson</td>
<td>Robert Winter</td>
</tr>
<tr>
<td>Andrina Granić</td>
<td>Ovidiu Noran</td>
<td>Stanislaw Wrycza</td>
</tr>
<tr>
<td>Janis Grundspenkis</td>
<td>Jacob Nerbjerg</td>
<td>Jaroslav Zendulka</td>
</tr>
<tr>
<td>Giancarlo Guizzardi</td>
<td>Matúš Ondreička</td>
<td>Jože Zupančič</td>
</tr>
<tr>
<td>Remigijus Gustas</td>
<td>Malgorzata Pankowska</td>
<td>Jožef Zurada</td>
</tr>
<tr>
<td>Hele-Mai Haav</td>
<td>Nearchos Paspallis</td>
<td></td>
</tr>
<tr>
<td>Igor Hawryszkiewycz</td>
<td>Oscar Pastor</td>
<td></td>
</tr>
</tbody>
</table>

### External Reviewers

| Aijaz Soomro                  | Diana Kalibatiene       | Karin Sjöholm           |
| Alessander Benevides         | Edgars Rencis           | Panagiotis Katsaros     |
| Algirdas Laukaitis           | Gunnar Thies            | Sergejs Kozlovics       |
| Anna-Sofía Alklind           | Gytenis Mikulenas       | Sergejus Sosunovas      |
| Taylor                       | Jens Lechtenbörger      | Tarmo Veskioja          |
| Audris Kalnins               | Jesper Holgersson       |                         |
| Deniss Kumlender             | Kamel Rouibah           |                         |

### Sponsoring Institutions

The conference ISD 2010 was organized under the Auspices of the Mayor of the City of Prague, Pavel Béém.
## Contents

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Information Systems Development to Enterprise Engineering</td>
<td>1</td>
</tr>
<tr>
<td>Jan L. G. Dietz</td>
<td></td>
</tr>
<tr>
<td>The Mobile and Mobility: Information, Organisations and Systems</td>
<td>25</td>
</tr>
<tr>
<td>John Traxler</td>
<td></td>
</tr>
<tr>
<td>Design of Situational Artefacts—Conceptual Foundations and Their</td>
<td>35</td>
</tr>
<tr>
<td>Application to IT/Business Alignment</td>
<td></td>
</tr>
<tr>
<td>Robert Winter</td>
<td></td>
</tr>
<tr>
<td>Preferences of Business Process Models: Interpretative Analysis on</td>
<td>51</td>
</tr>
<tr>
<td>Spontaneously Common Symbols</td>
<td></td>
</tr>
<tr>
<td>Saleh Al-wahaishi, Ahmad Jaffar, Ivo Vondrák, Václav Snášel, and</td>
<td></td>
</tr>
<tr>
<td>Jaroslav Pokorný</td>
<td></td>
</tr>
<tr>
<td>Verification of $i^*$ Models Using Alloy</td>
<td>63</td>
</tr>
<tr>
<td>Peter Oluoch Ating’a and Aneesh Krishna</td>
<td></td>
</tr>
<tr>
<td>Planning and Scheduling of Business Processes in Run-Time: A</td>
<td>75</td>
</tr>
<tr>
<td>Repair Planning Example</td>
<td></td>
</tr>
<tr>
<td>Irene Barba and Carmelo Del Valle</td>
<td></td>
</tr>
<tr>
<td>A Study of First Click Behaviour and User Interaction on the Google</td>
<td>89</td>
</tr>
<tr>
<td>SERP</td>
<td></td>
</tr>
<tr>
<td>Chris Barry and Mark Lardner</td>
<td></td>
</tr>
<tr>
<td>Effective QoS Aware Web Service Composition in Dynamic Environment</td>
<td>101</td>
</tr>
<tr>
<td>Peter Bartalos and Mária Bieliková</td>
<td></td>
</tr>
<tr>
<td>The Right Tools for the Right Tasks: Meaningful Education for IS</td>
<td>115</td>
</tr>
<tr>
<td>Professional</td>
<td></td>
</tr>
<tr>
<td>Peter M. Bednar and Christine Welch</td>
<td></td>
</tr>
</tbody>
</table>
Conditions Influencing Client–IS Supplier Interactions During IS Outsourcing ..................................................... 125
Linda Bergkvist

Facilitating the Creation of Quality Object Models Using a Knowledge Based System ........................................ 137
Narasimha Bolloju and Christoph Schneider

MetaMorPic: Self-Contained Photo Archival and Presentation ........ 149
Tomas Cerny and Michael J. Donahoo

A Real Time Multiagent Information Systems Architecture for Actively Monitoring Chronic Diseases ....................... 159
Emma Chavez-Mora and Gavin Finnie

Making Business Systems in the Telecommunication Industry More Customer-Oriented ........................................ 169
Christian Czarnecki, Axel Winkelmann and Myra Spiliopoulou

Convolution as the Key for Service-Identification in Complex Process Models ..................................................... 181
Gunnar Dietz, Martin Juhrisch and Katrina Leyking

Studying Maintainability on Model-Driven Web Methodologies ........ 195
Francisco José Domínguez-Mayo, María José Escalona, Manuel Mejías and Jesús Torres

Using Antenarrative Approaches to Investigate the Perceptions of Information Systems’ Actors Regarding Failure and Success ........ 207
Lynette Drevin and Darren Dalcher

Towards a Unified Service Definition ........................................ 219
George Feuerlicht and Lukas Burkon

A Process-Oriented Approach to Support Dynamic Evolution in Distributed Applications ..................................... 231
Kam Hay Fung and Graham Low

Regulated Open Multi-Agent Systems Based on Contracts ........ 243
Emilia Garcia, Adriana Giret and Vicente Botti

Modeling Method for Bridging Pragmatic and Semantic Dimensions of Service Architectures ............................ 257
Prima Gustiené and Remigijus Gustas
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic Tool Support for Cardinality-Based Feature Modeling</td>
<td>271</td>
</tr>
<tr>
<td>with Model Constraints for Information Systems Development</td>
<td></td>
</tr>
<tr>
<td>Abel Gómez and Isidro Ramos</td>
<td></td>
</tr>
<tr>
<td>Towards a Conceptual Model for Trustworthy Skills Profiles in Online Social Networks</td>
<td>285</td>
</tr>
<tr>
<td>Till Haselmann, Axel Winkelmann and Gottfried Vossen</td>
<td></td>
</tr>
<tr>
<td>Nicklas Holmberg and Odd Steen</td>
<td></td>
</tr>
<tr>
<td>From Organization Business Model to Information System: One Approach and Lessons Learned</td>
<td>309</td>
</tr>
<tr>
<td>Janis Iljins and Maris Treimanis</td>
<td></td>
</tr>
<tr>
<td>Assessment of Ontology Development and Management Tools According to the Axioms</td>
<td>321</td>
</tr>
<tr>
<td>Diana Kalibatiene and Olegas Vasilecas</td>
<td></td>
</tr>
<tr>
<td>Semi-Automatic Transformation of an XML Schema to XForms</td>
<td>331</td>
</tr>
<tr>
<td>Ján Kasarda and Tomáš Bartoš</td>
<td></td>
</tr>
<tr>
<td>Research Directions of OLAP Personalization</td>
<td>345</td>
</tr>
<tr>
<td>Natalija Kozmina and Laila Niedrite</td>
<td></td>
</tr>
<tr>
<td>Extending UML with Non-functional Requirements Modelling</td>
<td>357</td>
</tr>
<tr>
<td>Aneesh Krishna and Andreas Gregoriades</td>
<td></td>
</tr>
<tr>
<td>Bottleneck of the Development of Public Information Systems</td>
<td>373</td>
</tr>
<tr>
<td>Jaroslav Král and Michal Žemlička</td>
<td></td>
</tr>
<tr>
<td>A Framework for Optimizing Inter-operating Business Process Portfolio</td>
<td>383</td>
</tr>
<tr>
<td>Tri A. Kurniawan, Aditya K. Ghose and Lam-Son Lê</td>
<td></td>
</tr>
<tr>
<td>Michael Lang</td>
<td></td>
</tr>
<tr>
<td>A Framework for Intention-Driven Requirements Engineering of Innovative Software Products</td>
<td>417</td>
</tr>
<tr>
<td>Mauri Leppänen, Juha Lamminen and Pertti Saariluoma</td>
<td></td>
</tr>
<tr>
<td>Using Real-Time Event Stream Framework to Develop RFID-based Retailer Supermarket Systems</td>
<td>429</td>
</tr>
<tr>
<td>Liao Guoqiong, William Wei Song, Shu Lei and Wan Changxuan</td>
<td></td>
</tr>
</tbody>
</table>
Having a Customer Focus in Agile Software Development ............. 441
Garry Lohan, Michael Lang and Kieran Conboy

Ontology-mediated Validation of Software Models .................... 455
Antonio A. Lopez-Lorca, Ghassan Beydoun, Leon Sterling and Tim Miller

Collaborative Media Content Management ........................... 469
András Ferenc Kovács, Gábor Magyar and Gábor Szűcs

Modification of Workflow Management System Focused on a Human ... 479
Vojtech Matés

Managing Step Changes in Information System Support:
Lessons from an Industrial Study ................................. 491
Helena McCabe, David W. Bustard, Kevin Curran and Niall Byrne

Using Agile Practices to Build Trust in an Agile Team: A Case Study ... 503
Orla McHugh, Kieran Conboy and Michael Lang

Some Reasoning Behind Conceptual Normalisation ................. 517
Martin Molhanec

Improving Component-Based WebGIS Development by Adopting
a Software Product Line Approach .................................. 527
Juan Manuel Moreno-Rivera and Elena Navarro

The Adaptation of a Web Information System: A Perspective
of Organizations .................................................. 539
Aivars Niedrits and Laila Niedrīte

Change Work in Organisations ......................................... 551
Anders G. Nilsson

Towards Understanding Contradictions in Enterprise System
Implementations—Insights from a Case Study ......................... 563
Stig Nordheim

Perceived Quality of Cloud Based Applications for
Collaborative Writing ................................................. 575
Tihomir Orehovački

From Evidence-Based to Knowledge-Based Healthcare:
A Task-Based Knowledge Management Approach .................. 587
Hamidreza Pousti, Henry Linger and Frada Burstein

Agile Support and Maintenance of IT Services ...................... 597
Jaroslav Prochazka
Towards a Framework for Building Theory from ISD Practices .......... 611
Tero Päivärinta, Kari Smolander and Even Åby Larsen

Role of the Concept of Services in Business Process Management .... 623
Vaclav Repa

A Metamodel for Modelling of Component-Based Systems with Mobile Architecture .................................................. 635
Marek Rychlík

What Happens Before a Project Starts?—Project Start-up from the Supplier Perspective ................................. 647
Paula Savolainen, June M. Verner, Lesley P. W. Land and Graham C. Low

Fragmento: Advanced Process Fragment Library ....................... 659
David Schumm, Dimka Karastoyanova, Frank Leymann and Steve Strauch

Improving the Cold-Start Problem in User Task Automation by Using Models at Runtime .............................. 671
Estefanía Serral, Pedro Valderas and Vicente Pelechano

Integrated Approach in Management and Design of Modern Web-Based Services ............................................. 685
Jaroslav Škrabálek, Lucia Tokárová, Jiří Slabý and Tomáš Pitner

Database-Centred Approach to WFMS and DBMS Integration ......... 697
Václav Slavíček

The Role of Implementation Strategy in Enterprise System Adoption .................................................. 709
Piotr Soja

Evolution-Oriented User-Centric Data Warehouse ........................ 721
Darja Solodovnikova and Laila Niedrite

Change Management for Fractal Enterprises ............................. 735
Renate Strazdina and Marite Kirikova

Conceptual Modelling for Requirements of Government to Citizen Service Provision ............................................. 747
Lily Sun, Cleopa John Mushi and Anas Alsoud

On the Broader View of the Open Source Paradigm: The Case for Agricultural Biotechnology ............................ 759
Meredith A. Taylor, Geoffrey Black and Wita Wojtkowski
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Requirements Engineering Approach to Improving IT-business Alignment</td>
<td>771</td>
</tr>
<tr>
<td>Azmat Ullah and Richard Lai</td>
<td></td>
</tr>
<tr>
<td>Adapting the Lesk Algorithm for Calculating Term Similarity in the Context of Requirements Engineering</td>
<td>781</td>
</tr>
<tr>
<td>Jürgen Vöhringer and Günther Fliedl</td>
<td></td>
</tr>
<tr>
<td>SysML Parametric Diagrams in Business Applications</td>
<td>791</td>
</tr>
<tr>
<td>Stanislaw Wrycza and Bartosz Marcinkowski</td>
<td></td>
</tr>
<tr>
<td>Model-Driven GUI Automation for Efficient Information Exchange Between Heterogeneous Electronic Medical Record Systems</td>
<td>799</td>
</tr>
<tr>
<td>Xuebing Yang, Yuan Miao and Yanchun Zhang</td>
<td></td>
</tr>
<tr>
<td>Index</td>
<td>811</td>
</tr>
</tbody>
</table>
List of Contributors

Anas Alsoud  Informatics Research Centre, University of Reading, Whiteknights, Reading RG6 6WB, UK  
e-mail: a.alsoud@student.reading.ac.uk

Saleh Al-wahaishi  VŠB–Technical University of Ostrava, Ostrava-Poruba, Czech Republic  
e-mail: salehw@vsb.cz

Peter Oluoch Ating’a  Department of Computing, Curtin University of Technology, Perth, Australia  
e-mail: p.atinga@student.curtin.edu.au

Irene Barba  Universidad de Sevilla, Sevilla, Spain  
e-mail: irenebr@us.es

Chris Barry  National University of Ireland, Galway, Ireland  
e-mail: chris.barry@nuigalway.ie

Peter Bartalos  Institute of Informatics and Software Engineering, Faculty of Informatics and Information Technologies, Slovak University of Technology, Ilkovičova 3, 842 16 Bratislava, Slovakia  
e-mail: bartalos@fiit.stuba.sk

Tomáš Bartoš  Department of Software Engineering, Malostranské naměstí 25, 118 00 Prague 1, Czech Republic  
e-mail: bartos@ksi.mff.cuni.cz

Peter M. Bednar  School of Computing, University of Portsmouth, Portsmouth, UK  
e-mail: peter.bednar@ics.lu.se

Department of Informatics, Lund University, Lund, Sweden

Linda Bergkvist  Department of Information Systems & Project Management, Karlstad University, Karlstad, Sweden  
e-mail: linda.bergkvist@kau.se
Ghassan Beydoun  University of Wollongong, Wollongong, Australia  
e-mail: beydoun@uow.edu.au

Mária Bieliková  Institute of Informatics and Software Engineering, Faculty of Informatics and Information Technologies, Slovak University of Technology, Ilkovičova 3, 842 16 Bratislava, Slovakia  
e-mail: bielik@fiit.stuba.sk

Geoffrey Black  1910 University Drive, Boise, ID, USA  
e-mail: gblack@boisestate.edu

Narasimha Bolloju  Department of Information Systems, City University of Hong Kong, Hong Kong, China  
e-mail: narsi.bolloju@cityu.edu.hk

Vicente Botti  Universidad Politecnica de Valencia, Valencia, Spain  
e-mail: vbotti@dsic.upv.es

Lukas Burkon  Department of Information Technology, University of Economics, Prague, W. Churchill Sq. 4, Prague, Czech Republic  
e-mail: lukas.burkon@vse.cz

Frada Burstein  Faculty of Information Technology, Monash University, Melbourne, Australia  
e-mail: frada.burstein@infotech.monash.edu.au

David W. Bustard  University of Ulster, Coleraine, Northern Ireland  
e-mail: dw.bustard@ulster.ac.uk

Niall Byrne  KTL, Nass, Ireland  
e-mail: niallbyrne@ktl.ie

Tomas Cerny  Department of Computer Science and Engineering, Czech Technical University, Charles square 13, 121 35 Prague 2, Czech Republic  
e-mail: tomas.cerny@fel.cvut.cz

Changxuan Wan  School of Information Technology, Jiangxi University of Finance and Economics, Nanchang, China  
Jiangxi Key Laboratory of Data and Knowledge Engineering, Jiangxi University of Finance & Economics, Nanchang, China

Emma Chavez-Mora  Bond University, Robina, QLD, Australia  
Universidad Catolica de la Ssma. Concepcion, Concepcion, Chile  
e-mail: emchavez@bond.edu.au

Kieran Conboy  Business Information Systems, J.E. Cairnes School of Business & Economics, National University of Ireland, Galway, Ireland  
e-mail: kieran.conboy@nuigalway.ie
Kevin Curran  University of Ulster, Londonderry, Northern Ireland  
e-mail: kj.curran@ulster.ac.uk

Christian Czarnecki  Deteccon International GmbH, Oberkasseler Str. 2, 53227,  
Bonn, Germany  
Faculty of Computer Science, Otto-von-Guericke-University, Universitaetsplatz 2,  
39106 Magdeburg, Germany  
e-mail: christian.czarnecki@deteccon.com

Darren Dalcher  National Center for Project Management, Middlesex University,  
Trent Park, London, N14 4YZ, UK  
e-mail: D.Dalcher@mdx.ac.uk

Carmelo Del Valle  Universidad de Sevilla, Sevilla, Spain  
e-mail: carmelo@us.es

Jan L.G. Dietz  Delft University of Technology, P.O. Box 5031, The Netherlands,  
2600 GA Delft, Dalian 116025 China  
e-mail: j.l.g.dietz@tudelft.nl

Gunnar Dietz  Global Institute of Management and Economics, Dongbei University  
of Finance and Economics, 116025, Dalian, China  
e-mail: mail@gdietz.de

Francisco José Dominguez-Mayo  Department of Computer Languages and  
Systems, University of Seville, Seville, Spain  
e-mail: fjdominguez@us.es

Michael J. Donahoo  Department of Computer Science, Baylor University, P.O.  
Box 97356, 76798-7356, Waco, TX, USA  
e-mail: jeff donahoo@baylor.edu

Lynette Drevin  North-West University, Private Bag X6001, Potchefstroom, South  
Africa, 2520  
e-mail: Lynette.Drevin@nwu.ac.za

Maria Jose Escalona  Department of Computer Languages and Systems, University  
of Seville, Seville, Spain  
e-mail: mjescalona@us.es

George Feuerlicht  Department of Information Technology, University of Eco-  
nomics, Prague, W. Churchill Sq. 4, Prague, Czech Republic  
e-mail: jirif@vse.cz  
Faculty of Engineering and Information Technology, University of Technology,  
Sydney, P.O. Box 123 Broadway, Sydney, NSW 2007, Australia  
e-mail: george.feuerlicht@uts.edu.au
Gavin Finnie  Bond University, Robina, QLD, Australia  
e-mail: gfinnie@bond.edu.au

Günther Fliedl  Institute of Applied Informatics, Alpen-Adria-Universität Klagenfurt, Klagenfurt, Austria  
e-mail: guenther.fliedl@ifit.uni-klu.ac.at

Kam Hay Fung  School of Information Systems, Technology and Management, The University of New South Wales, Kensington, NSW, Australia  
e-mail: kamhayfung@ieee.org

Emilia Garcia  Universidad Politecnica de Valencia, Valencia, Spain  
e-mail: mgarcia@dsic.upv.es

Aditya K. Ghose  Decision Systems Lab., School of Computer Science and Software Engineering, University of Wollongong, Wollongong, NSW 2522, Australia  
e-mail: aditya@uow.edu.au

Adriana Giret  Universidad Politecnica de Valencia, Valencia, Spain  
e-mail: agiret@dsic.upv.es

Abel Gómez  Departamento de Sistemas Informáticos y Computación, Universitat Politècnica de València, Cno. de Vera, s/n. Valencia, Spain  
e-mail: agomez@dsic.upv.es

Andreas Gregoriades  Department of Computer Science and Engineering, European University, Nicosia, Cyprus  
e-mail: a.gregoriades@eu.cy

Guoqiong Liao  School of Information Technology, Jiangxi University of Finance and Economics, Nanchang, China  
Jiangxi Key Laboratory of Data and Knowledge Engineering, Jiangxi University of Finance & Economics, Nanchang, China

Remigijus Gustas  Department of Information Systems, Karlstad University, Karlstad, Sweden  
e-mail: remigijus.gustas@kau.se

Prima Gustiené  Department of Information Systems, Karlstad University, Karlstad, Sweden  
e-mail: prima.gustiene@kau.se

Till Haselmann  European Research Center for Information Systems (ERCIS), WWU Münster, Münster, Germany  
e-mail: haselmann@wi.uni-muenster.de
Nicklas Holmberg  Department of Informatics, Lund School of Economics and Management, Lund University, Lund, Sweden
 e-mail: nicklas.holmberg@ics.lu.se

Janis Iljins  University of Latvia, Raina bulv. 19, 1586 Riga, Latvia
 e-mail: janis.iljins@lu.lv

Ahmad Jaffar  UAE University, Al-Ain, United Arab Emirates
 e-mail: ajaffar@uaeu.ac.ae

Martin Juhrisch  Chair for Information Systems, Dresden University of Technology, 01062, Dresden, Germany
 e-mail: martin.juhrisch@tu-dresden.de

Diana Kalibatiene  Vilnius Gediminas Technical University, Sauletekio al. 11, 10223, Vilnius, Lithuania
 e-mail: diana@isl.vgtu.lt

Dimka Karastoyanova  Institute of Architecture of Application Systems, University of Stuttgart, Universitätsstraße 38, 70569 Stuttgart, Germany
 e-mail: dimka.karastoyanova@iaas.uni-stuttgart.de

Ján Kasarda  Department of Software Engineering, Malostranské naměstí 25, 118 00 Prague 1, Czech Republic
 e-mail: jan.kasarda@mff.cuni.cz

Marite Kirikova  Riga Technical University, Riga, Latvia
 e-mail: marite.kirikova@cs.rtu.lv

András Ferenc Kovàcs  Department of Telecommunications and Media Informatics, Budapest University of Technology and Economics, Budapest, Hungary
 e-mail: kovacsaf@gmail.com

Natalija Kozmina  Faculty of Computing, University of Latvia, Riga LV-1586, Latvia
 e-mail: natalija.kozmina@lu.lv

Jaroslav Král  Charles University, Malostranské nám. 25, 118 00, Prague, Czech Republic
 e-mail: kral@ksi.mff.cuni.cz

Aneesh Krishna  Department of Computing, Faculty of Science and Engineering, Curtin University of Technology, Perth, Australia
 e-mail: a.krishna@curtin.edu.au

Tri A. Kurniawan  Decision Systems Lab., School of Computer Science and Software Engineering, University of Wollongong, Wollongong, NSW 2522, Australia
 e-mail: tak976@uow.edu.au
Richard Lai  Department of Computer Science and Computer Engineering, La Trobe University, Melbourne, Australia  
e-mail: lai@cs.latrobe.edu.au

Juha Lamminen  Department of Computer Science and Information Systems, University of Jyväskylä, P.O. Box 35 (Agora), 40014, Jyväskylä, Finland  
e-mail: juha.e.lamminen@jyu.fi

Lesley P. W. Land  School of Information Systems, Technology and Management, The University of New South Wales, Sydney, NSW 2052, Australia  
e-mail: l.land@unsw.edu.au

Michael Lang  Business Information Systems, J.E. Cairnes School of Business & Economics, National University of Ireland, Galway, Ireland  
e-mail: michael.lang@nuigalway.ie

Lardner Mark  National University of Ireland, Galway, Ireland  
e-mail: m.lardner1@nuigalway.ie

Even Åby Larsen  University of Agder, Kristiansand, Norway  
e-mail: even.larsen@ui.no

Lam-Son Lê  Decision Systems Lab., School of Computer Science and Software Engineering, University of Wollongong, Wollongong, NSW 2522, Australia  
e-mail: lle@uow.edu.au

Lei Shu  School of Information Technology, Jiangxi University of Finance and Economics, Nanchang, China

Mauri Leppänen  Department of Computer Science and Information Systems, University of Jyväskylä, P.O. Box 35 (Agora), 40014, Jyväskylä, Finland  
e-mail: mauri@cs.jyu.fi

Katrina Leyking  IDS Scheer AG, Altenkesseler Straße 17, 66115 Saarbrücken, Germany  
e-mail: katrina.leyking@ids-scheer.com

Frank Leymann  Institute of Architecture of Application Systems, University of Stuttgart, Universitätsstraße 38, 70569 Stuttgart, Germany  
e-mail: leymann@iaas.uni-stuttgart.de

Henry Linger  Faculty of Information Technology, Monash University, Melbourne, Australia  
e-mail: henry.linger@infotech.monash.edu.au

Garry Lohan  National University of Ireland, Galway, Ireland  
e-mail: Garry.Lohan@nuigalway.ie
Antonio A. Lopez-Lorca  University of Wollongong, Wollongong, Australia  
e-mail: aall645@uowmail.edu.au

Graham C. Low  School of Information Systems, Technology and Management,  
The University of New South Wales, Kensington, NSW, Australia  
e-mail: g.low@unsw.edu.au

Gábor Magyar  Department of Telecommunications and Media Informatics, Budapest University of Technology and Economics, Budapest, Hungary  
e-mail: magyar@tmit.bme.hu

Bartosz Marcinkowski  Department of Business Informatics, University of Gdansk, Sopot, Poland  
e-mail: bartosz.marcinkowski@gmail.com

Vojtech Mates  Faculty of Information Technology, Brno University of Technology, Brno, Czech Republic  
e-mail: imates@fit.vutbr.cz

Helena McCabe  KTL, Naas, Ireland  
e-mail: Lena.McCabe@ktl.ie

Orla McHugh  Business Information Systems, J.E. Cairnes School of Business & Economics, National University of Ireland, Galway, Ireland  
e-mail: orla.mchugh@nuigalway.ie

Yuan Miao  School of Engineering and Science, Victoria University, Melbourne, 3011, Australia  
e-mail: yuan.miao@vu.edu.au

Tim Miller  University of Melbourne, Melbourne, Australia  
e-mail: tmiller@unimelb.edu.au

Martin Molhanec  Czech Technical University in Prague, Technickà 2, 166 27, Praha 6, Czech Republic  
e-mail: molhanec@fel.cvut.cz

Juan Manuel Moreno-Rivera  SIGTel Geomàtica, Centro I+D de Empresas and Grupo de Teledetección y SIG, Instituto de Desarrollo Regional, University of Castilla-La Mancha, Albacete, Spain  
e-mail: juanmanuel.moreno@sigtel.es

Cleopa John Mushi  School of Systems Engineering, University of Reading, Whiteknights, Reading, RG6 6AY, UK  
e-mail: c.j.s.k.mushi@reading.ac.uk

Elena Navarro  Computing Systems Department, University of Castilla-La Mancha, Albacete, Spain  
e-mail: enavarro@info-ab.uclm.es
Laila Niedrite  Faculty of Computing, University of Latvia, Raina bulv. 19, LV-1586, Riga, Latvia  
e-mail: Laila.Niedrite@lu.lv  

Aivars Niedritis  University of Latvia, Riga, Latvia  
e-mail: Aivars.Niedritis@lu.lv  

Anders G. Nilsson  Karlstad University, SE-651 88, Karlstad, Sweden  
e-mail: anders.nilsson@kau.se  

Stig Nordheim  University of Agder, Postboks 422, 4604, Kristiansand, Norway  
e-mail: stig.nordheim@uia.no  

Tihomir Orehovački  Faculty of Organization and Informatics, University of Zagreb, Varaždin, Croatia  
e-mail: tihomir.orehovacki@foi.hr  

Tero Päivärinta  University of Agder, Kristiansand, Norway  
e-mail: tero.paivarinta@uia.no  

Vicente Pelechano  Universidad Politécnica de Valencia, Valencia, Spain  
e-mail: pele@pros.upv.es  

Tomàš Pitner  Faculty of Informatics, Masaryk University, Brno, Czech Republic  
e-mail: tomp@fi.muni.cz  

Jaroslav Pokorný  Charles University of Prague, Prague, Czech Republic  
e-mail: pokorny@ksi.mff.cuni.cz  

Hamidreza Pousti  Faculty of Information Technology, Monash University, Melbourne, Australia  
e-mail: Hamid.Pousti@infotech.monash.edu.au  

Jaroslav Prochazka  Tieto/University of Ostrava, Ostrava, Czech Republic  
e-mail: Jaroslav.Prochazka@osu.cz  

Isidro Ramos  Departamento de Sistemas Informáticos y Computación, Universitat Politècnica de València, Cno. de Vera, s/n. Valencia, Spain  
e-mail: iramos@dsic.upv.es  

Vaclav Repa  Department of Information Technology, University of Economics, W. Churchill sqr. 4, 130 67, Prague 3, Czech Republic  
e-mail: repa@vse.cz  

Manuel Mejías Risoto  Department of Computer Languages and Systems, University of Seville, Seville, Spain  
e-mail: risoto@us.es
Marek Rychlíš Department of Information Systems, Faculty of Information Technology, Brno University of Technology, Božetěchova 2, 612 66, Brno, Czech Republic
e-mail: rychly@fit.vutbr.cz

Pertti Saariluoma Department of Computer Science and Information Systems, University of Jyväskylä, P.O. Box 35 (Agora), 40014, Jyväskylä, Finland
e-mail: pertti.saariluoma@jyu.fi

Paula Savolainen School of Computing, University of Eastern Finland, 1627, 70211, Kuopio, Finland
Lero–The Irish Software Engineering Research Centre, University of Limerick, Ireland
e-mail: paula.m.savolainen@uef.fi

Christoph Schneider Department of Information Systems, City University of Hong Kong, Hong Kong, China
e-mail: christoph.schneider@cityu.edu.hk

David Schumm Institute of Architecture of Application Systems, University of Stuttgart, Universitätsstraße 38, 70569, Stuttgart, Germany
e-mail: david.schumm@iaas.uni-stuttgart.de

Estefanía Serral Universidad Politécnica de Valencia, Valencia, Spain
e-mail: eserral@pros.upv.es

Jaroslav Škrabálek Faculty of Informatics, Masaryk University, Brno, Czech Republic
e-mail: skrabalek@fi.muni.cz

Jiří Slabý Faculty of Informatics, Masaryk University, Brno, Czech Republic
e-mail: xslaby@fi.muni.cz

Václav Slavíček Faculty of Informatics and Management, University of Hradec Králové, Rokitanského 62, 500 03, Hradec Králové, Czech Republic
e-mail: vaclav.slavicek@uhk.cz

Kari Smolander Lappeenranta University of Technology, Lappeenranta, Finland
e-mail: kari.smolander@lut.fi

Václav Snášel VŠB–Technical University of Ostrava, Ostrava-Poruba, Czech Republic
e-mail: vaclav.snasel@vsb.cz

Piotr Soja Department of Computer Science, Cracow University of Economics, Rakowicka 27, 31-510, Kraków, Poland
e-mail: eisoja@cyf-kr.edu.pl
Darja Solodovnikova  University of Latvia, Raina bulv. 19, LV-1586, Riga, Latvia
e-mail: darja.solodovnikova@lu.lv

William Wei Song  School of Engineering and Computing Sciences, Durham University, Durham, United Kingdom
e-mail: w.w.song@durham.ac.uk

Myra Spiliopoulou  Faculty of Computer Science, Otto-von-Guericke-University, Universitaetsplatz 2, 39106, Magdeburg, Germany
e-mail: myra@iti.cs.uni-magdeburg.de

Odd Steen  Department of Informatics, Lund School of Economics and Management, Lund University, Lund, Sweden
e-mail: odd.steen@ics.luc

Leon Sterling  University of Melbourne, Melbourne, Australia
e-mail: leon@cs.mu.oz.au

Swinburne University of Technology, Healesville, Australia
e-mail: lsterling@groupwise.swin.edu.au

Steve Strauch  Institute of Architecture of Application Systems, University of Stuttgart, Universitätsstraße 38, 70569, Stuttgart, Germany
e-mail: strauch@iaas.unistuttgart.de

Renate Strazdina  Riga Technical University, Riga, Latvia
e-mail: renate.strazdina@cs.rtu.lv

Lily Sun  School of Systems Engineering, University of Reading, Whiteknights, Reading, RG6 6AY, UK
e-mail: lily.sun@reading.ac.uk

Gábor Szűcs  Department of Telecommunications and Media Informatics, Budapest University of Technology and Economics, Budapest, Hungary
e-mail: szucs@tmit.bme.hu

Meredith A. Taylor  University of Bern, 6 Hallerstrasse, Bern, Switzerland
e-mail: meredithtaylor@boisestate.edu

Lucia Tokárová  Faculty of Informatics, Masaryk University, Brno, Czech Republic
e-mail: tokarov@fi.muni.cz

Jesús Torres  Department of Computer Languages and Systems, University of Seville, Seville, Spain
e-mail: jtorres@us.es

John Traxler  Learning Lab, University of Wolverhamton, TF2 9NT, Telford, UK
e-mail: john.ttraxler@wlv.ac.uk
Maris Treimanis  University of Latvia, Raina bulv. 19, 1586, Riga, Latvia
  e-mail: maris.treimanis@lu.lv

Azmat Ullah  Department of Computer Science and Computer Engineering, La Trobe University, Melbourne, Australia
  e-mail: Ullah@latrobe.edu.au

Pedro Valderas  Universidad Politécnica de Valencia, Valencia, Spain
  e-mail: pvalderas@pros.upv.es

Olegas Vasilecas  Vilnius Gediminas Technical University, Sauletekio al. 11, 10223, Vilnius, Lithuania
  e-mail: olegas@isl.vgtu.lt

June M. Verner  School of Computer Science and Engineering, The University of New South Wales, Sydney, NSW 2052, Australia
  e-mail: june.verner@gmail.com

Jürgen Vöhringer  Institute of Applied Informatics, Alpen-Adria-Universität Klagenfurt, Klagenfurt, Austria
  e-mail: juergen.voehringer@ifit.uni-klu.ac.at

Ivo Vondrák  VŠB–Technical University of Ostrava, Ostrava-Poruba, Czech Republic
  e-mail: ivo.vondrak@vsb.cz

Gottfried Vossen  European Research Center for Information Systems (ERCIS), WWU Münster, Münster, Germany
  e-mail: vossen@uni-muenster.de

Christine Welch  Department of Strategy and Business Systems, University of Portsmouth, Portsmouth, UK
  e-mail: christine.welch@port.ac.uk

Axel Winkelmann  European Research Center for Information Systems (ERCIS), Westfälische Wilhelms-University, Leonardo-Campus 3, 48149, Münster, Germany
  e-mail: winkelmann@ercis.uni-muenster.de

Robert Winter  Institute of Information Management, University of St. Gallen, Müller-Friedberg-Strasse 8, 9000, St. Gallen, Switzerland
  e-mail: robert.winter@unisg.ch

Wita Wojtkowski  1910 University Drive, Boise, ID, USA
  e-mail: wwojtkow@boisestate.edu

Stanislaw Wrycza  Department of Business Informatics, University of Gdansk, Sopot, Poland
  e-mail: swrycza@univ.gda.pl
Xuebing Yang  School of Engineering and Science, Victoria University, Melbourne, 3011, Australia  
e-mail: xuebing.yang@live.vu.edu.au

Michal Žemlička  Charles University, Malostranské nám. 25, 118 00, Prague, Czech Republic  
e-mail: zemlicka@ksi.mff.cuni.cz

Yanchun Zhang  School of Engineering and Science, Victoria University, Melbourne, 3011, Australia  
e-mail: Yanchun.Zhang@vu.edu.au