# Preface

The International Conference on Perspectives in Business Informatics Research (BIR) series focuses on the fields of business informatics, business information systems and information systems. It targets research at the intersection of business applications and information systems engineering with an ambition to facilitate the communication between scientists and practitioners. The 21st BIR conference was organized by Rostock University, Germany and it took place on Rostock during September 20–23, 2022. The central theme of the 2022 edition of BIR is business informatics for sustainable innovation. This volume contains publications presented during the workshops and the Doctoral Consortium that preceded the conference. More specifically:

- 13th Workshop on Information Logistics and Digital Transformation (ILOG 2022)
- 7th Workshop on Managed Complexity (ManComp 2022)
- The Doctoral Consortium of BIR 2022.

Each workshop as well as the Doctoral Consortium had own organizers and an international program committee. After the peer-review process, the BIR 2022 workshop program committees have selected 14 scientific papers for the presentation and inclusion to this volume. In addition, four papers were selected by the BIR2022 Doctoral Consortium organizers. All contributions address significant and emerging topics of the business informatics field.

As chairs of BIR 2022 workshops, we would like to express our gratitude to all workshop organizers, organizers of the Doctoral Consortium, program committee members of all workshops, BIR conference organizers, as well as all BIR 2022 workshop and Doctoral Consortium authors for their valuable contributions.

September 2022

Hasan Koç
Janis Stirna



BIR 2022 Workshops and Doctoral Consortium, 21st International Conference on Perspectives in Business Informatics Research (BIR 2022), September 20-23, 2022, Rostock, Germany

# ILOG 2022 Workshop Preface

ILOG 2022 is the 13th workshop in a series that initially focused only on information logistics but extended the scope in 2017 to the neighboring topic of digital transformation. The mission of information logistics is to improve information flow in organizations by reducing information overflow and facilitating information supply that meets the demand of organizational stakeholders.

In recent years, many organizations are rethinking what customers value most and develop operating models that exploit the possibilities of big data, social media, artificial intelligence and other new technologies for competitive differentiation. Manufacturing enterprises offer product-as-a-service solutions or continue the "servitization" of their products by designing new kinds of services. This often leads to a digital transformation of large parts of the enterprise targeting seamless integration of digital services/products with digitized and optimized operations. Efficient and target-oriented information flows are a major contribution to digital transformation.

Furthermore, the traditional application fields of information logistics still are in high demand of solutions and approaches improving information flow. Knowledge-intensive industry and service sectors, public organizations and governmental bodies are dependent on accurate and timely information supply for efficient and high quality processes and services. Intelligent information supply has become an important issue characterized by just-in-time, demand-oriented and context-sensitive information. The digital transformation of organizations poses new requirements to optimized information supply and emphasizes the importance of information logistics solutions. In this context, the use of semantic technologies is relevant, like ontologies, semantic nets, semantic web standards and other knowledge technologies. Such technologies and related methods have proven to be an important element of information logistics and solutions supporting digital transformation. Many information logistics applications would be infeasible without interpreting the meaning of data.

ILOG aimed to bring together people who have strong interest in digital transformation, information logistics, semantic technologies, information systems, enterprise solutions and knowledge-based systems. A broad understanding of possible approaches and solutions for information logistics and digital transformation was encouraged.

Based on at least three reviews per submission, the international Program Committee selected eight high-quality papers for inclusion in the workshop and this volume. The authors of these papers include both researchers and practitioners from different disciplines. We dedicate special thanks to the members of the international Program Committee for promoting the workshop, their support in attracting submissions, and for providing excellent reviews of the submissions. Without their committed work, a workshop like ILOG 2022 would not have been possible. Our thanks also include the external reviewers supporting the paper selection process and the authors of submissions and presenters at the workshop.

September 2022

Kurt Sandkuhl
Ulf Seigerroth

# ILOG 2022 Organization

**Program Committee Chairs**

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|---|---|
| Kurt Sandkuhl | University of Rostock, Germany and University of Jönköping, Sweden |
| Ulf Seigerroth | University of Jönköping, Sweden |

**Program Committee**

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| Wolfgang Deiters | Hochschule für Gesundheit, Bochum (Germany) |
| Michael Fellmann | Rostock University (Germany) |
| Janis Grabis | Riga Technical University (Latvia) |
| Yanbo Han | North China University of Technology (China) |
| Björn Johansson | Linköping University (Sweden) |
| Marite Kirikova | Riga Technical University (Latvia) |
| Anne Gutschmidt | Rostock University (Germany) |
| Erika Nazaruka | Riga Technical University (Latvia) |
| Kurt Sandkuhl | University of Rostock (Germany) |
| Rainer Schmidt | Munich University of Applied Sciences (Germany) |
| Ulf Seigerroth | Jönköping University (Sweden) |
| Nikolay Shilov | St. Petersburg Federal Research Center (SPC RAS) (Russia) |
| Alexander Smirnov | St. Petersburg Federal Research Center (SPC RAS) (Russia) |
| Janis Stirna | Stockholm University (Sweden) |
| Torben Tambo | Aarhus University (Denmark) |
| Anna Wingkvist | Linnaeus University (Sweden) |
| Matthias Wißotzki | Wismar University of Applied Sciences (Germany) |
| Alfred Zimmermann | Reutlingen University (Germany) |

# ManComp 2022 Workshop Preface

Managing Complexity and ManComp as a workshop within the International Conference on Perspectives in Business Informatics Research (BIR) has come to the seventh edition.

The workshop is focused on approaches and methods for managing complexity in the domain of applied informatics that may concern interplay of systems and ecosystems of various sizes and substances. Its purpose is to share and transfer knowledge on complexity identification, representation, controlling, and reduction and in this light to exploit possible synergies in development of innovative complexity handling strategies, approaches, and methods.

The ultimate goal of the workshop is to bring together researchers and practitioners to discuss theoretical approaches or real-life case studies featuring success and/or failure stories in managing complexity. The purpose of these discussions is to deepen the understanding of strategies, approaches, and methods in managing complexity in enterprise, software and hardware engineering. A cross-pollination of experiences in both domains is assumed.

This year we were able to accept 6 contributions. The foundation of the papers is management of complexity, and they span topics such as architecture, post-merger acquisitions, innovation, as well as consideration of ethical, social, and economical aspects. The authors are from Denmark, Germany, Latvia, Netherlands, and Sweden.

September 2022

Mārīte Kirikova
Peter Forbrig
Charles Møller

# ManComp 2022 Program Committee

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|---|---|
| Robert Andrei Buchmann | Babeș-Bolyai University of Cluj Napoca, Romania |
| Bertrand David | Ecole Centrale de Lyon, France |
| Matthes Elstermann | Karlsruhe Institute of Technology - Institute of Applied Informatics and Formal Description Methods (AIFB), Germany |
| Hans-Georg Fill | University of Fribourg, Switzerland |
| Peter Forbrig | Rostock University, Germany |
| Janis Grabis | Riga Technical University, Latvia |
| Janis Grundspenkis | Riga Technical University, Latvia |
| Marite Kirikova | Riga Technical University, Latvia |
| Ginta Majore | Vidzeme University of Applied Sciences, Latvia |
| Christian Märtin | Hochschule Augsburg, Germany |
| Charles Møller | Aalborg University, Denmark |
| Erika Nazaruka | Riga Technical University, Latvia |
| Dorina Rajanen | University of Oulu, Finland |
| Ben Roelens | Open Universiteit, Ghent University, The Netherlands |
| Kurt Sandkuhl | The University of Rostock, Germany |
| Werner Schmidt | Technische Hochschule Ingolstadt Business School, Germany |
| Khurram Shahzad | University of the Punjab, Pakistan |
| Chris Stary | JKU, Austria |
| Benkt Wangler | Stockholm University, Sweden |
| Marco Winckler | Université Côte d'Azur, France |
| Jelena Zdravkovic | Stockholm University, Sweden |
| Iryna Zolotaryova | Simon Kuznets Kharkiv National University of Economics, Ukraine |

# BIR 2022 Doctoral Consortium Preface

The Doctoral Consortium of Business Informatics Research BIR 2022 is a forum for doctoral students with the purpose to discuss their PhD research work. The participants in the Doctoral Consortium have the opportunity to present their research proposals, engage in discussions with peers and experienced researchers and receive feedback for improving their research proposal and thereby their doctoral theses. Moreover, the participants in the Doctoral Consortium have the opportunity to identify research issues that are related to their research interest and exchange knowledge with other doctoral students. The proposals submitted to the Doctoral Consortium reflect the current status of the author's PhD project. All proposals were reviewed by two senior researchers in business informatics. The papers were evaluated based on the following criteria: relevance, originality, appropriate research methodology, research contribution, and clarity.

September 2022

Anne Gutschmidt
Björn Johansson

# BIR 2022 Doctoral Consortium Organization

**BIR 2022 Doctoral Consortium Chairs**

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|---|---|
| Björn Johansson | Linköping University, Sweden |
| Anne Gutschmidt | Rostock University, Germany |

**BIR 2022 Doctoral Consortium Faculty Members**

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|---|---|
| Raimundas Matulevicius, | University of Tartu, Estonia |
| Malgorzata Pankowska | University of Economics in Katowice, Poland |