

CAiSE 2014

26th International Conference on Advanced Information Systems Engineering



PROGRAM

JUNE 16-20 **GREECE**
THESSALONIKI
THE MET HOTEL

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A warm welcome to the **26th International Conference on Advanced Information Systems Engineering** (CAiSE 2014), held in Thessaloniki, Greece, June 16-20, 2014!

The theme for this year's conference is "Information Systems Engineering in Times of Crisis". We live in a world where crises of one sort or another - economic, political, social, or geophysical - are becoming the norm. We are delighted to have lined up three outstanding keynote speakers whose presentations speak to the point. **Eric Dubois** (University of Luxembourg) focuses on governance models for service systems. **Bartel van de Walle** (Tilburg University), a founding member and president of the international community on Information Systems for Crisis Response and Management (ISCRAM), investigates risk accelerators in natural disasters such as the recent typhoon Haiyan in the Philippines. As Secretary General for Information Systems (CIO) in the Greek Ministry of Finance, **Diomidis Spinellis** (Athens University of Economics and Business) was right in the middle of arguably one of the deepest and longest national economic crises ever experienced.

CAiSE 2014 received **226 research paper** submissions. The 18% accepted papers showcase ground-breaking research on a rich variety of topics: Clouds and services; Databases; Data mining and streaming; Mining event logs; Models; Processes; Process models; Process mining; Product lines; Requirements; Requirements elicitation; Risk and security; Social computing; and Software engineering. In addition, the conference program includes four **tutorials**, an **industrial panel**, and the **CAiSE Forum** which shows exciting research-in-progress. The main conference is preceded by two days of **working conferences** and **workshops**, as well as a **doctoral symposium**.

Thessaloniki is not only the second largest city of Greece, but also a city rich in history, culture, and tourist attractions, both within the city and the nearby peninsula of Chalkidiki. The social program of CAiSE 2014 includes an optional excursion to the archaeological site of Vergina, the ancient capital of Macedonia, where the tomb of Phillip (father of Alexander the Great) was discovered.

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Prof. Dr. Eric Dubois is director of the “Service Science and Innovation” department (www.ssi.tudor.lu), a R&D and innovation group of about 150 people, part of the Tudor Centre, a Luxembourg Research and Technological Organisation. He is active in the information system community with more than 100 publications. His specific focus is on the requirements engineering topic with contributions in the fields of business/IT alignment, formal languages and security requirements engineering. Recent interests are in Service Science, service innovation management and service systems.



Information Systems for the Governance of Compliant Service Systems

The traditional role of an Information System (IS) is to support operation and management within an organization. In the presentation, we will discuss the specific role that IS can play to support the management aspects related to the governance of an organization regarding its compliance to norms and regulations. In the new service economy, governance issues are no longer limited to a single organization but should be extended at the level of service value networks, i.e. service systems. In such systems, one of the challenges is for each organization to demonstrate its compliance in a transparent way.

During the keynote, we will illustrate these elements within the context of a specific service system existing in Luxembourg where different services (telco, electronic record management, data storage, etc.) are bundled together. We will discuss how to organize a global governance model around the topic of IT service management. On the basis of some researches on TIPa, a process reference model making possible to objectively measure the quality of delivered IT services, we will illustrate how IS and Enterprise Architecture can effectively support the deployment of such global governance model.



Dr. Bartel Van de Walle is Associate Professor at the Department of Management, Tilburg School of Economics and Management at Tilburg University (the Netherlands). He served as a staff advisor on innovation and science policy to the Flemish minister of science and innovation and is board member of the Flemish Institute for Technological Research (VITO). His main research interests are in information and communication systems and (humanitarian) crisis management. Bartel is President of the Board of the international Information Systems for Crisis Response and Management (ISCRAM) Association since 2009.

Risk Accelerators in Disasters: Insights from the Typhoon Haiyan Response on Humanitarian Information Management and Decision Support

Modern societies are increasingly threatened by disasters that require rapid response through ad-hoc collaboration among a variety of actors and organizations. The complexity within and across today's societal, economic and environmental systems defies accurate predictions and assessments of damages, humanitarian needs, and the impact of aid. Yet, decision-makers need to plan, manage and execute aid response under conditions of high uncertainty while being prepared for further disruptions and failures. This paper argues that these challenges require a paradigm shift: instead of seeking optimality and full efficiency of procedures and plans, strategies should be developed that enable an acceptable level of aid under all foreseeable eventualities. We propose a decision- and goal-oriented approach that uses scenarios to systematically explore future developments that may have a major impact on the out-come of a decision. We discuss to what extent this approach supports robust decision-making, particularly if time is short and the availability of experts is limited. We interlace our theoretical findings with insights from experienced humanitarian decision makers we interviewed during a field research trip to the Philippines in the aftermath of Typhoon Haiyan.

FRI20 09:00

Diomidis Spinellis

***Diomidis Spinellis** is a Professor in the Department of Management Science and Technology at the Athens University of Economics and Business, Greece. From 2009 to 2011 he served as the Secretary General for Information Systems at the Greek Ministry of Finance. He is the author of two award-winning books, *Code Reading* and *Code Quality: The Open Source Perspective*, as well as more than 200 widely-cited scientific papers. He is a member of the IEEE Software editorial board, authoring the regular "Tools of the Trade" column. Dr. Spinellis has written the UMLGraph tool and code that ships with Mac OS X and BSD Unix. He holds an MEng in Software Engineering and a PhD in Computer Science, both from Imperial College London. Dr. Spinellis currently serves the IEEE Computer Society Board of Governors and is a senior member of the ACM and the IEEE.*



Against the Odds: Managing the Unmanagable in a Time of Crisis

Many consider the information technology systems at the Greek Ministry of Finance as the ideal tools for fighting widespread tax evasion, bureaucracy, fraud, and corruption. Yet making this happen is a battle against protracted procurement processes and implementation schedules, ineffective operations, and rigid management structures. This is a story about guerrilla tactics: simple measures, methods, tools, and techniques that worked. Sadly, it's also a story (still being written) of the limits of such approaches. On balance, it demonstrates that in any large organization there are ample opportunities to bring about change, even against considerable odds.



Hajo A. Reijers is a full professor with the department of Mathematics and Computer Science of Eindhoven University of Technology, the Netherlands, and is the head of BPM research at Perceptive Software. Previously, he worked as a management consultant in the BPM field. Hajo has taught BPM to students at all academic levels and provides training to practitioners at the TIASNimbas Business School. He is one of the founders of the Business Process Management Forum, a Dutch platform for the exchange of knowledge between industry and academia.



Jan Mendling is a full professor with the Institute for Information Business at the WU Vienna, Austria. Prior to that, he held appointments at the HU Berlin and QUT Brisbane, and was a visiting researcher at Eindhoven University of Technology, IBM India Research Labs Bangalore, City University of Hong Kong and University of Ljubljana. His main research interests are in business process management and process modeling. Jan has taught BPM to students and practitioners at different institutions in Europe and Australia. He is co-founder of the Berliner BPM-Offensive, a practitioners' forum for BPM.

Fundamentals of Business Process Management: An Introduction to Value-Driven Process Thinking

Practitioners and academics often emphasize the importance of the modeling of business operations when they aim to explain the essence of Business Process Management (BPM). However, the real benefits that this discipline can bring stems from its value-driven view on organizational performance and by its provision of practices and technologies to achieve organizational goals.

Against this background, the goal of this tutorial is to explain:

- How a comprehensive view on an organization's core assets, its business processes, can be developed.
- How each business processes can be analyzed on this basis.
- How potentials for improvement can be identified in a systematic way.

To support these goals, attention will be paid to the development of a process architecture on the one hand and the various steps in the lifecycle for managing business processes on the other. The concept of the process architecture will be explained along with a concrete method to arrive at a specific architecture for any organization. The different phases of the life-cycle will be dealt with in some detail:

from identifying the priorities for process improvement, to modeling existing processes, actually improving these, and monitoring their performance from then on. There is a special emphasis on the use of process-aware technologies to support business



Remco Dijkman is assistant professor in Information Systems at Eindhoven University of Technology. His research interests include Business Process Management and Service Oriented Computing. He received his Ph.D. from the University of Twente, where he has held positions as a postdoctoral researcher and as a research assistant. Before working at the University of Twente, he combined work as a research assistant at the Open University of the Netherlands with work as a consultant at Ordina. He has been a visitor of New York University, Hasso Plattner Institute, IBM Zurich Research Lab, Humboldt-University Berlin, and Queensland University of Technology. Remco has published over 60 papers in scientific journals, conferences and workshops. His work appeared in Information Systems, Computers in Industry and Transactions on Software Engineering and Methodology. He is co-founder of the Dutch BPM Round Table and the European BPM Round Table, both platforms that stimulate collaboration between researchers and practitioners.



Sherif Sakr is a Senior Researcher in the Software Systems Research Group at National ICT Australia (NICTA), Sydney, Australia. He is also a conjoint Senior Lecturer in The School of Computer Science and Engineering (CSE) at University of New South Wales (UNSW), Australia. In 2011, Sherif held a Visiting Researcher position at Microsoft Research Laboratories, Redmond, USA. In 2012, Sherif held a Research MTS position in Alcatel-Lucent Bell Labs. He has published more than 60 refereed research publications in international journals and conferences such as: VLDB, SIGMOD, WWW, CIKM, BPM, ER, ISWC, DASFAA, ICWS, JCSS, IEEE TSC, IEEE COMST JCST, JDM and ACM Computing Surveys. Dr. Sakr's research interest is data and information management in general, particularly in areas of indexing techniques, query processing and optimization techniques, graph data management, business process management and semantic Web.

Effective Management of Large Repositories of Business Process Models

Business processes are central to the operation of both public and private organizations. As it becomes increasingly useful for organizations to work in a process-oriented manner, it becomes common nowadays to see organizations building repositories that store large collections of business process models encapsulating the knowledge of their business. In practice, large collections of process models introduce both new challenges and opportunities to the area of business process management. On the one hand, organizations struggle to manage the large volumes of complex process models, which is made worse by overlapping content across models, poor version management, process models that are used simultaneously for different purposes, and the use of different modeling notations such as EPCs, BPMN, within the same collection. On the other hand, the process models in large repositories provide a valuable source of information, which can be reused to facilitate the development of new process models. This reuse will lead to more efficient development of models that are of higher quality and better integrated with the existing models in the collection. For these reasons, the interest in techniques for managing large collections of business process models has been increasing strongly over the past few years. This is illustrated by the number of publications on the topic, which has been growing exponentially over the past few years. In addition, there have been several workshops, a special issue of *Computers in Industry* and a book that is now being prepared on the topic.

The aim of this tutorial is to provide a comprehensive overview of the state-of-the-art of the research techniques and systems for dealing with the challenges and opportunities of effective management of large collections of business process models. In addition, it will provide an overview of open research challenges that currently exist in this area.



Anthony I. (Tony) Wasserman is Professor of Software Management Practice at Carnegie Mellon University - Silicon Valley, and Executive Director of its Center for Open Source Investigation (COSI). Tony was Founder and CEO of Interactive Development Environments (IDE), which built the innovative Software through Pictures (StP) multiuser modeling environment, one of the first commercial products to include open source software. In 2000, Tony became VP of Bluestone Software (later part of HP), where he led the creation of an open source toolkit for building mobile web apps. Previously, Tony was Professor of Medical Information Science at the University of California, San Francisco, and a Lecturer in the Computer Science Division at the University of California, Berkeley. Tony is a Director of the Open Source Initiative, and a member of the Board of Advisors of Open Source for America. He is a Life Fellow of the IEEE and a Fellow of the ACM, and a member of IFIP WG 8.1 and WG 2.13. He was the 2012 recipient of the Distinguished Educator award from the IEEE Technical Council on Software Engineering, and the 2013 recipient of the Influential Educator Award from the ACM Special Interest Committee on Software Engineering (SIGSOFT).

The Rise of Free and Open Source Software

This tutorial defines free and open source software (FOSS), describing the benefits of FOSS software for modern applications, the ways it can be most effectively used, and the likely future directions for it. Thousands of high quality software products and components have been developed and released under approved software licenses. This constantly growing body of high-quality software has driven the growth and acceptance of free and open source software (FOSS). Many FOSS projects have become the leading products in their field, surpassing similar proprietary software.

The tutorial covers the history and background of FOSS, how it is used in traditional, mobile, and cloud applications, and issues of evaluation, use, and adoption of FOSS by industry and government. It includes a survey of FOSS resources for Service-oriented, Mobile, and Cloud-based applications, an overview of leading applications and tools, and a description of FOSS development processes.

The rapid growth of FOSS has also transformed the software industry, and has led to new businesses that offer FOSS applications, for which they provide paid support services. At the same time, FOSS has continued to grow, playing a major role in such areas as cloud computing and management of large datasets.

Finally, the tutorial addresses the future of FOSS, and its important role in software infrastructure, sensor-based applications, and a wide range of application development and deployment tools.



Xavier Franch is Associate Professor at the Universitat Politècnica de Catalunya (UPC), Spain. His research interests are in the areas of information systems engineering, software engineering and service engineering, with focus on requirements engineering. He has given invited talks and tutorials in venues like RCIS'12 (keynote "The i* Framework: The Way Ahead"), ICSE'14, ICSE'13, RE'13, RCIS'13 and RE'04. In relation to CAiSE, he served as Program Chair in 2012 and Workshop Chair in 2008 and 2013. Other positions include: Program Chair at IC-SOC'14, REFSQ'11 and ICCBSS'06; General Chair at RE'08 and FiCloud'14; Doctoral Symposium chair at RCIS'13. He is member of the Editorial Boards of IST and IJISMD. He is coordinator of the FP7 RISCOSS project on Managing Risks and Costs in OSS Adoption.



Angelo Susi is a research scientist in the Software Engineering group at Fondazione Bruno Kessler in Trento, Italy. He participated in the organization committee of several conferences, such as SSBSE '12 (General Chair), RE '11 (Local and Financial chair) and in program committees of international conferences and workshops (such as AAMAS, ICSOC and SSBSE). He also served as reviewer for several Journals such as REJ, IST, JSS.



Eric S. K. Yu is Professor at the University of Toronto, Canada. His research interests are in the areas of information systems modeling and design, requirements engineering, knowledge management, and software engineering. Books he has co-authored or co-edited include: *Social Modeling for Requirements Engineering* (MIT Press, 2011); *Conceptual Modeling: Foundations and Applications* (Springer, 2009); and *Non-Functional Requirements in Software Engineering* (Springer, 2000). He is an associate editor for the *Int. Journal of Information Systems Modeling and Design*, and serves on the editorial boards of the *Int. J. of Agent Oriented Software Engineering*, *IET Software*, and the *Journal of Data Semantics*. He is co-editor for the MIT Press book series on *Information Systems*. He was Program Co-chair for the *Int. Conference on Conceptual Modeling* (ER'08, ER'14).

Business and Software Ecosystems modelling in i*

This tutorial has two main goals. The first is to present an intentional strategic actors approach for modeling and analysing business and software ecosystems using the i* framework. As a secondary goal required by the first, we present the i* framework: its history and recent developments, its modeling constructs and analysis techniques. The tutorial thus covers foundations for i* modeling, as well as a fresh application perspective from an emerging area in information systems engineering.

These two main goals are decomposed into the following concrete objectives:

- Introducing the concepts of business ecosystem and software ecosystem.
- Exploring the link between software and business ecosystem models.
- Providing one example of model-based ecosystem analysis, namely risk analysis.
- Understanding the role of i* as a framework for strategic modeling and analysis.
- Learning the constructs of the i* core language.
- Being introduced to the portfolio of existing analysis techniques applied to i* models.
- Acquiring skills in the use of i* for modeling business and software ecosystems in general.
- Going deeper in the details of one particular type of ecosystems, namely open source software (OSS) business and software ecosystems.

The tutorial is organized into five main sections:

Modeling and analyzing business and software ecosystems - challenges and approaches

- Overview of i* modeling language
- The i* SD and SR models
- Presentation of model analysis and reasoning techniques
- Ecosystem modelling and analysis with i*

The intended audience for the tutorial are researchers, practitioners, and vendors interested in describing, modelling, and reasoning about business and system goals during the earlier stages of the systems development process. Given its introductory nature, MSc and PhD students may particularly benefit from the tutorial. No previous knowledge is required for attendance.

Business Process Modeling, Development, and Support

The topics addressed by the BPMDS series are focused on business processes and their IT support. This is one of the keystones of information systems theory beyond short-lived fashions. The 15th edition of the BPMDS series would like to attract papers describing mature research in BPMDS, still giving place to experience reports and idea papers. To encourage new and emerging challenges and research directions in the area of business process modeling, development and support, we have a unique focus theme every year.

The focus theme for BPMDS'14 idea papers is

The human perspective in Business Processes

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Exploring Modelling Methods for Systems Analysis and Design

The EMMSAD conference focuses on exploring, evaluating, and enhancing modeling methods and methodologies for the analysis and design of information systems, enterprises, and business processes. The objective of the EMMSAD conference series is to provide a forum for researchers and practitioners interested in modeling methods for systems analysis and design to meet, and exchange research ideas and results. It also provides the participants an opportunity to present their research papers and experience reports, and to take part in open discussions.

No other event provides the following mix of benefits for those doing research on modeling techniques:

- The ability to look on similarities and differences between different modeling approaches. Most other events of this kind look only on a specific technique or type of modelling, which even if they are more focused, might make it more difficult to spot the general mechanisms at play in modelling
- 3-4 solid reviews on each paper
- A mixed audience of senior and junior people
- The opportunity of both thorough presentation of the research and long discussion time, which combined with the previous points are specifically beneficial for PhD-students, but which also for senior people can be very inspiring to get ideas for new research.

Special Theme for EMMSAD 2014

Quality of models and modeling languages

Co-chairs

Henderik A. Proper, *Public Research Centre Henri Tudor, Luxembourg,
and Radboud University Nijmegen, The Netherlands*

John Krogstie, *Norwegian Institute of Science and Technology, Norway*

Khaled Gaaloul, *Public Research Centre Henri Tudor, Luxembourg*

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Terry Halpin, *INTI International University, Malaysia*

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- Raimundas Matulevičius**, *University of Tartu, Estonia*
- Graham McLeod**, *University of Cape Town, South Africa*
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Andreas L. Opdahl, *University of Bergen, Norway*
Sietse Overbeek, *Delft University of Technology, The Netherlands*
Hervé Panetto, *University Henri Poincaré Nancy I, France*
Barbara Pernici, *Politecnico di Milano, Italy*
Anne Persson, *University of Skövde, Sweden*
Michaël Petit, *University of Namur, Belgium*
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Iryna Zolotaryova, *Kharkiv National University of Economics, Ukraine*
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1st International Workshop on Advanced Probability and Statistics in Information Systems

Modern Information Systems are associated with huge amounts of data and although research in computer science has produced highly advanced methodologies for analyzing them, new complex research challenges appear. Probability Theory and Statistics, on the other hand, are considered well-defined and mature disciplines that have evolved through several centuries now and became sound on the foundations of Mathematics. Probability theory and Statistics have offered innumerable theories, techniques and tools to all aspects of data analysis in the wide discipline of Information Systems. The aim of AP SIS is to bring together scientists from different branches of Information Systems who use or develop advanced probabilistic or statistical methods in their research. We encourage contributions addressing novel and complex problems with the use of statistical analysis and probabilistic methods.

Organising Committee

Dr. Lefteris Angelis, *Aristotle University of Thessaloniki, Greece*

Dr. Ioannis Stamelos, *Aristotle University of Thessaloniki, Greece*

Dr. Apostolos N. Papadopoulos, *Aristotle University of Thessaloniki, Greece*

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Athena Vakali, *Greece*

Claes Wohlin, *Sweden*

Michalis Xenos, *Greece*

Israel Herraiz, *Spain*

Workshop's website

sites.google.com/site/apsis2014/Home

10th International Workshop on Enterprise & Organizational Modeling and Simulation

The main focus of this workshop is on the role, importance, and application of Modeling and Simulation in the context of Information Systems and Enterprise Systems Engineering from organizational perspective. Modeling & Simulation have been widely recognized as an instrument to observe dynamic behavior of systems, measure IT impacts on organizations, and outcomes of changes.

In addition to extensive research programs, the field of M&S is actively attracting industry and tool developers. For businesses, the practice of M&S is becoming a de facto standard tool to change, improve, and introduce innovation in their business processes. This workshop is aimed to become a major outlet for researchers, practitioners, and educators interested in the application of Modeling & Simulation pertaining to IS, EIS, Organizational Processes, and Business Systems. This workshop will attract significant contribution by junior researchers as well as seasoned professionals practicing the art of Modeling & Simulation. It will also appeal to teachers of the Modeling & Simulation discipline, since this discipline is extensively offered within the computing majors. There is a growing interest in this field from educational institutions with doctoral programs in M&S.

General Chair

Joseph Barjis, *Czech Technical University in Prague, Czech Republic*

Program Co-Chairs

Robert Pergl, *Czech Technical University in Prague, Czech Republic*

Steering Committee

Joseph Barjis, *Czech Technical University in Prague, Czech Republic*

Robert Pergl, *Czech Technical University in Prague, Czech Republic*

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Michel Soares, *Federal University of Uberlandia, Brazil*
David Sundaram, *The University of Auckland, New Zealand*
Jose Tribolet, *Technical University of Lisbon, Portugal*

7th International i* Workshop

A growing number of groups around the world have been using the i* modeling framework in their research on requirements engineering, business process design, organization modelling, software development methodologies, evolution and more. Following successful workshops in Trento (2002), London (2005), Recife (2008), Hammamet (2010), Trento (2011), and Valencia (2013) it is time for another meeting focusing on i*, GRL, Tropos, Techne, and related goal frameworks, to exchange ideas, provide updates on recent work, compare notes, and forge new collaborations.

Although we welcome submissions on all i*-related work, this year we have a special focus on barriers to industrial adoption, with a particular call for experiences from i*-related empirical evaluation (industrial case studies, experiments, surveys).

We cordially invite you and members of your group to join us at the Seventh International i* Workshop. The 2-day workshop will be held in Thessaloniki, Greece, 16-20 June, 2014, as a co-located event with the 26th International Conference on Advanced Information Systems Engineering (CAISE'14).

The objective of the discussion-oriented workshop is to share knowledge, stimulate discussion and foster new lines of research and collaboration among different groups.

To support these goals, we will schedule as much time for discussion as for presentations – the actual time will depend on the final number of accepted papers. If the schedule allows, we plan to include further occasions for discussion in the program, in addition to the customary wrap-up session.

Organising Committee

Jennifer Horkoff, *University of Trento, Italy*

Fabiano Dalpiaz, *Utrecht University, The Netherlands*

Steering committee

Jaelson Castro, *Universidade Federal de Pernambuco, Brazil*

Xavier Franch, *Universitat Politecnica de Catalunya, Spain*

John Mylopoulos, *University of Trento, Italy*

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Yves Wautelet, *Katholieke Universiteit Leuven, Belgium*
Eric Yu, *University of Toronto, Canada*
Jelena Zdravkovic, *Stockholm University, Sweden*

Workshop's website
istar14.wordpress.com

International Workshop on Advances in Services DDesign based on the Notion of CApability

The notion of capability is gaining much presence within the field of Information Systems Engineering. Historically, it has been examined in Economics, Sociology, and Management Science. More recently, it has been considered in the context of business-IT alignment, in the specification and design of services using business planning as the baseline, in Enterprise Architecture, and in Service Oriented Architecture.

We encourage the original research contributions exploring the challenges and solutions related to the meaning and usage of capability in Information Systems Engineering, as well as industrial case studies illustrating the use of this notion.

Organising Committee

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Pericles Loucopoulos, *University of Manchester, UK*

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Program Committee

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Francisco Valverde Giromé, *Spain*

Alain Wegmann, *Switzerland*

Hans Weigand, *Netherlands*

Carson Woo, *USA*

Eric Yu, *Canada*

2nd International Workshop on Cognitive Aspects of Information Systems Engineering

Cognitive aspects of information systems engineering is an area that is gaining interest and importance in industry and research. In recent years, human aspects and specifically cognitive aspects in software engineering and information systems engineering have received increasing attention in literature and conferences, acknowledging that these aspects are as important as the technical ones, which have traditionally been in the center of attention. The goal of this workshop is to provide a better understanding and more appropriate support of the cognitive processes and challenges practitioners experience when performing information systems development activities. Understanding the challenges and needs, educational programs as well as development supporting tools and notations may be enhanced for a better fit to our natural cognition, leading to better performance of engineers and higher systems' quality.

Organising Committee

Irit Hadar, *University of Haifa, Israel*

Barbara Weber, *Universität Innsbruck, Austria*

Program Committee

Daniel M. Berry, *Canada*

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Jeffrey Parsons, *Canada*

Hajo Reijers, *The Netherlands*

Irene Vanderfeesten, *The Netherlands*

Stefan Zugal, *Austria*

Workshop's website

is-lin.hevra.haifa.ac.il/cognise/2014/

4th International Workshop on Information Systems Security Engineering

As modern Information systems support significant areas of the human society, which require storage and processing of sensitive personal and organisational information, security problems of information systems are currently a widespread and growing concern. The scientific community has realized the importance of aligning information systems engineering and security engineering in order to develop more secure information systems.

The International Workshop on Information System Security Engineering aims to provide a forum for researchers and practitioners to present, discuss and debate on one hand the latest research work on methods, models, practices and tools for secure information systems engineering, and on the other hand relevant industrial applications, recurring challenges, problems and industrial led solutions at the area of secure information systems engineering.

General Chair

Haris Mouratidis, *University of Brighton, UK*

Programme Chairs

David G. Rosado, *University of Castilla-La Mancha, Spain*

Nadira Lammari, *CEDRIC-CNAM, France*

Steering Committee Chair

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Stefanos Gritzalis, *University of the Aegean, Greece*

Steven Furnell, *Plymouth University, UK*

Yves Ledru, *LIG, University of Grenoble, France*

Workshop's website

<http://gsya.esi.uclm.es/WISSE2014/>

New Generation Enterprise and Business Innovation Systems

Innovation is one of the key enablers for European enterprises to compete in global markets, especially in difficult economic periods.

An innovation process is different from a 'usual' business process we find in an enterprise that is normally well defined in its plans, activities, committed resources, etc. Innovation needs a creative behaviour to address 'wicked problems', i.e., problems difficult to solve because of incomplete, fuzzy, changing requirements.

The NGEBS workshop intends to address the area of Innovation Management Systems that have that operate in a fuzzy and ill-defined problem space to be systematically tackled by using existing information systems and information engineering methods. NGEBS 2014 intends to contribute to the development of methods to be used in the implementation of a new generation of information systems dedicated to business innovation, with particular attention to networked enterprises.

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Johann Eder, *AAU, Austria (Co-Chair)*

Paul Johannesson, *KTH, Sweden (Co-Chair)*

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Konstantinos Zachos, *UK*

Martin Zelm, *Germany*

08:00-09:00	REGISTRATION (FOYER)					
09:00-10:30	KEYNOTE MAISTROS A		KEYNOTE	KEYNOTE		
10:30-11:00	COFFEE BREAK (FOYER)					
11:00-12:30						
12:30-14:00	LUNCH (AVENUE 48)					
14:00-15:30						
15:30-16:00	COFFEE BREAK (FOYER)					
16:00-17:30						
20:30	JOINT WORKING CONFERENCES AND WORKSHOP DINNER (Taverna "Pinakas")					

08:00-09:00	REGISTRATION (FOYER)							
09:00-10:30			KEYNOTE	KEYNOTE		KEYNOTE	KEYNOTE	KEYNOTE
10:30-11:00	COFFEE BREAK (FOYER)							
11:00-12:30								
12:30-14:00	LUNCH (AVENUE 48)							
14:00-15:30								
15:30-16:00	COFFEE BREAK (FOYER)							
16:00-17:30								

BPDMS MAISTROS A	EMMSAD SCIROCCO	iSTAR OSTRIA AB	EOMAS OSTRIA CD	APSIS MAISTROS C	BIVEE LEVANTE
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**WORKING CONFERENCES
and WORKSHOPS ROOMS**

NEGBIS MAISTROS C	ASDENCA ZEPHYROS	COGNISE MAISTROS E	WISSE MAISTROS D
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CAiSE CONFERENCES ROOMS

KEYNOTES/ SESSIONS MAISTROS A	SESSIONS SCIROCCO	SESSIONS ZEPHYROS	TUTORIALS MAISTROS C	TUTORIALS OSTRIA AB	FORUM/ POSTERS FOYER
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WED 18

08:00-09:00	REGISTRATION (FOYER)		
09:00-10:30	GREETINGS, KEYNOTE BY DUBOIS		
10:30-11:00	COFFEE BREAK (FOYER)		
11:00-12:30	SESSION 1 CLOUD & SERVICES	SESSION 2 REQUIREMENTS	
12:30-14:00	LUNCH (AVENUE 48)		
14:00-15:30	SESSION 3 PRODUCT LINES	SESSION 4 REQUIREMENTS ELICITATION	SESSION 5 TUTORIAL REIJERS, MENDLING
15:30-16:00	COFFEE BREAK (FOYER)		
16:00-17:30	SESSION 6 PROCESSES	SESSION 7 RISK & SECURITY	SESSION 8 TUTORIAL DIJKMAN, SAKR
18:00	WALKING TOUR OF THESSALONIKI		
20:30	WELCOME RECEPTION (Makedonia Palace Hotel)		

THU 19

08:30-09:00	REGISTRATION (FOYER)		
09:00-10:00	KEYNOTE BY VAN DE WALLE AND COMES		
10:00-10:30	COFFEE BREAK (FOYER)		
10:30-12:30	SESSION 9 PROCESS MODELS	SESSION 10 DATA MINING & STREAMING	SESSION 11 TUTORIAL WASERMAN
12:30-14:00	SESSION 12 FORUM/POSTERS GREEK SNACKS (FOYER)		
14:00-15:30	SESSION 13 PROCESS MINING	SESSION 14 MODELS	SESSION 15 FORUM/POSTERS-DEMOS
15:30-16:00	COFFEE BREAK (FOYER)		
16:00-17:30	SESSION 16 MINING EVENT LOGS	SESSION 17 DATABASES	SESSION 18 TUTORIAL FRANCH, SUSI, YU
20:30	CONFERENCE DINNER (Hyatt Hotel)		

FRI 20

08:00-09:00	REGISTRATION (FOYER)		
09:00-10:00	KEYNOTE BY SPINELLIS		
10:00-10:30	COFFEE BREAK (FOYER)		
10:30-12:30	SESSION 19 SOFTWARE ENGINEERING	SESSION 20 INDUSTRIAL PANEL	SESSION 21 DOCTORAL CONSORTIUM
15:30-16:00	CLOSING SESSION		
15:00	VISIT TO VERGINA		

WED
1809:30
↓
10:30

MAISTROSA

Opening, welcome greeting

Chair **Yannis Manolopoulos** and **Christoph Quix**WED
1809:30
↓
10:30

MAISTROSA

Information Systems for the Governance
of Compliant Service Systems**Eric Dubois**Chair **Yannis Manolopoulos** and **Christoph Quix**

KEYNOTE

1

WED
1811:00
↓
12:30

SCIROCCO

Clouds and Services

Chair **Bernd Neumayr****Arik Senderovich, Matthias Weidlich, Avigdor Gal and Avishai Mandelbaum**
*Queue Mining - Predicting Delays in Service Processes***A.S.M. Kayes, Jun Han and Alan Colman**
*PO-SAAC: A Purpose-Oriented Situation-Aware Access Control Framework
for Software Services***Vasilios Andrikopoulos, Santiago Gómez Sáez, Frank Leymann
and Johannes Wettinger**
*Optimal Distribution of Applications in the Cloud*WED
1811:00
↓
12:30

ZEPHYROS

Requirements

Chair **John Krogstie****Catarina Gralha, Miguel Goulão and João Araújo**
*Identifying Modularity Improvement Opportunities in Goal-oriented Requirements Models***Wilco Engelsman and Roel Wieringa**
*Understandability of Goal-Oriented Requirements Engineering Concepts
for Enterprise Architects*

SESSION

02

Clemens Heidinger, Klemens Böhm, Erik Buchmann and Kai Richter

FACTS: a Framework for Anonymity towards Comparability, Transparency and Sharing

←
SESSION
02

Product Lines

Chair **Jelena Zdravkovic**

Francisco Moyano, Kristian Beckers and Carmen Fernandez-Gago

Trust-Aware Decision-Making Methodology for Cloud Sourcing

Iris Reinhartz-Berger, Nili Itzik and Yair Wand

Analyzing Variability of Software Product Lines Using Semantic and Ontological Considerations

Markus Nöebauer, Norbert Seyff and Iris Groher

Similarity Analysis within Product Line Scoping: An Evaluation of a Semi-Automatic Approach

WED
18

14:00
↓
15:30

SESSION
03

SCIROCCO

Requirements Elicitation

Chair **Colette Rolland**

Corentin Burnay, Ivan Jureta and Stéphane Faulkner

An Exploratory Study of Topic Importance in Requirements Elicitation Interviews

Matthieu Vergne and Angelo Susi

Expert Finding using Markov Networks in Open Source Communities

Yves Wautelet, Samedi Heng, Manuel Kolp and Isabelle Mirbel

Unifying and Extending User Story Models

WED
18

14:00
↓
15:30

SESSION
04

SCIROCCO

**Fundamentals of Business Process Management:
An Introduction to Value-Driven Process Thinking**

Hajo A. Reijers and Jan Mendling

Chair **Dimitris Karagiannis**

WED
18

14:00
↓
15:30

TUTORIAL
1

MASTROS C

WED
1816:00
↓
17:30SESSION
06

SCIROCCO

Processes

Chair **Marite Kirikova****María Cecilia Bastarrica, Gerardo Maturro, Romain Robbes,
Luis Silvestre and René Vidal***How does Quality of Formalized Software Processes Affect Adoption?***Aitor Murguzur, Xabier De Carlos, Salvador Trujillo and Goiuria Sagardui***Context-aware Staged Configuration of Process Variants@Runtime***Jens Ohlsson, Shengnan Han, Paul Johannesson,
Fredrik Carpenhall and Lazar Rusu***Prioritizing Business Processes Improvement Initiatives: The Seco Tools Case*WED
1816:00
↓
17:30SESSION
07

ZEPHYROS

Risk and Security

Chair **Raimundas Matulevicius****Stavros Simou, Christos Kalloniatis, Evangelia Kavakli
and Stefanos Gritzalis***Cloud Forensics: Identifying the Major Issues and Challenges***Tong Li and Jennifer Horkoff***Dealing with Security Requirements for Socio-Technical Systems:
A Holistic Approach***Janno von Stülpnagel, Jens Ortmann and Joerg Schoenfisch***IT Risk Management with Markov Logic Networks*WED
1816:00
↓
17:30TUTORIAL
2

MAISTROS C

Effective Management of Large Repositories
of Business Process Models**Remco Dijkman and Sherif Sakr***Chair* **Dimitris Karagiannis**

Risk Accelerators in Disasters - Insights from the Typhoon Haiyan Response on Humanitarian Information Management and Decision Support

Bartel Van de Walle and **Tina Comes**

Chair **Matthias Jarke**

MASTROSA

THU
19

09:30
↓
10:30

KEYNOTE
2

Process Models

Chair **Jolita Ralyte**

Andreas Meyer, Luise Pufahl, Kimon Batoulis, Sebastian Kruse, Thorben Lindhauer, Thomas Stoff, Dirk Fahland and Mathias Weske

Automating Data Exchange in Process Choreographies

Marcela Ruiz, Dolors Costal, Sergio España, Xavier Franch and Óscar Pastor

Integrating the Goal and Business Process Perspectives in Information System Analysis

Yoann Laurent, Reda Bendraou, Souheib Baarir and Marie-Pierre Gervais

Formalization of fUML: an Application to Process Verification

Mirela Riveni, Hong-Linh Truong and Schahram Dustdar

On the Elasticity of Social Compute Units

SCIROCCO

THU
19

10:30
↓
12:30

SESSION
09

Data Mining and Streaming

Chair **Sjaak Brinkkemper**

Ioannis Skoulis, Panos Vassiliadis and Apostolos Zarras

Open-Source Databases: Within, Outside, or Beyond Lehman's Laws of Software Evolution?

Theodoros Kalamatianos and Kostas Kontogiannis

Schema Independent Reduction of Streaming Log Data

ZEPHYROS

THU
19

10:30
↓
12:30

SESSION
10



SESSION

10

Lovro Šubelj, Zoran Bosnić, Matjaž Kukar and Marko Bajec
Automatization of the Stream Mining Process

Nacéra Bennacer, Coriane Nana Jipmo, Antonio Penta and Gianluca Quercini
Matching User Profiles across Social Networks

THU
19

10:30

↓

12:30

MAISTROS C

The Rise of Free and Open Source Software

Anthony I. (Tony) WassermanChair **Barbara Weber**

TUTORIAL

3

WED
18

12:30

↓

15:30

FOYER

Forum

(posters session, visionary papers & case study report)

Barbara Livieri and Mario Bochicchio
*Information Systems and Performance Management for Collaborative Enterprises:
 a proposal*

Eng Lieh Ouh and Stan Jarzabek
*Understanding Service Variability for Profitable Software as a Service:
 Service Providers' Perspective*

**Gregor Grambow, Nicolas Mundbrod, Vivian Steller
 and Manfred Reichert**
Towards Configurable Data Collection for Sustainable Supply Chain Communication

Monika Malinova, Henrik Leopold and Jan Mendling
A Meta-Model for Process Map Design

**Reinhold Dunkl, Stefanie Rinderle-Ma, Wilfried Grossmann
 and Karl Anton Froeschl**
Decision Point Analysis of Time Series Data in Process-Aware Information Systems

Marco Mori, Nesrine Noughi and Anthony Cleve
Mining SQL Execution Traces for Data Manipulation Behavior Recovery



Elio Goettelmann, Karim Dahman, Benjamin Gateau and Claude Godart
A Broker Framework for Secure and Cost-Effective Business Process Deployment on Multiple Clouds

Naved Ahmed and Raimundas Matulevicius
A Method for Eliciting Security Requirements from the Business Process Models

Roman Popp and Hermann Kaindl
Automated Adaptation of Business Process Models Through Model Transformations Specifying Business Rules

Vladimir A. Shekhovtsov and Heinrich C. Mayr
Managing Quality Related Information in Software Development Processes

Julius Kopke, Dominik Joham and Johann Eder
Path-Based Semantic Annotation for Web Service Discovery

Jelena Zdravkovic, Irina Rychkova and Thomas Speckert
IT Governance in Organizations Facing Decentralization – Case Study in Higher Education

Arnon Sturm, Daniel Gross, Jian Wang and Eric Yu
Analyzing Engineering Contributions using a Specialized Concept Map

Marite Kirikova
Work Systems based Fractal Architecture of Information Systems

Ahmed Abid , Nizar Messai, Mohsen Rouached, Thomas Devogele and Mohamed Abid
IDECSE: A Semantic Integrated Development Environment for Composite Services Engineering

Gorica Tapandjieva and Alain Wegmann
Specification and Implementation of a Meta-model for Information Systems Cartography

Babis Magoutas, Nenad Stojanovic, Alexandros Bousdekis, Dimitris Apostolou, Gregoris Mentzas and Ljiljana Stojanovic
Anticipation-driven Architecture for Proactive Enterprise Decision Making

Posters session continues at 14:00-15:30 in the same place

THU
1914:00
↓
15:30SESSION
13

SCIROCCO

Process Mining

Chair **Pnina Soffer****Artem Polyvyanyy, Marcello La Rosa and Arthur H.M. ter Hofstede**
*Indexing and Efficient Instance-based Retrieval of Process Models Using Untanglings***Fabrizio Maria Maggi, Chiara Di Francescomarino, Marlon Dumas and Chiara Ghidini**
*Predictive Monitoring of Business Processes***Elena V. Epure, Charlotte Hug, Rebecca Deneckère and Sjaak Brinkkemper**
*What Shall I Do Next? Intention Mining for Flexible Process Enactment*THU
1914:00
↓
15:30SESSION
14

ZEPHYROS

Models

Chair **Ivan Jureta****Victorio A. de Carvalho, João Paulo A. Almeida and Giancarlo Guizzardi**
*Using Reference Domain Ontologies to Define the Real-World Semantics of Domain-Specific Languages***Bernd Neumayr, Manfred A. Jeusfeld, Michael Schrefl and Christoph Schütz**
*Dual Deep Instantiation and its ConceptBase Implementation***Jokin García, Oscar Díaz and Jordi Cabot**
*An Adapter-Based Approach to Co-Evolve Generated SQL in Model-to-Text Transformations*WED
1814:00
↓
15:30SESSION
15

MAISTROSA

Forum
(demos)**Itzel Morales-Ramirez and Anna Perini**
*Discovering Speech Acts in Online Discussions: A Tool-supported method***Faber D. Giraldo, Sergio Espana, Manuel A. Pineda, William J. Giraldo and Oscar Pastor**
*Integrating Technical Debt into MDE***Judith Michael, Fadi Al Machot and Heinrich C. Mayr**
A Behavior Centered Modeling Tool Based on ADOxx

Banu Aysolmaz and Onur Demirörs

UPROM Tool: A Unified Business Process Modeling Tool for Generating Software Life Cycle Artifacts

Kevin Vlaanderen, Sandor Spruit, Fabiano Dalpiaz and Sjaak Brinkkemper

Demonstration of the Online Method Engine

Nili Itzik and Iris Reinhartz-Berger

SOVA - A Tool for Semantic and Ontological Variability Analysis

Tong Li, Jennifer Horkoff and John Mylopoulos

A Prototype Tool for Modeling and Analyzing Security Requirements from A Holistic Viewpoint

Sagar Sunkle and Hemant Rathod

Visual and Ontological Modeling Support for Extended Enterprise Models

Andrea Delgado and Laura González

Eclipse SoaML: a Tool for Engineering Service Oriented Applications

← SESSION
15

Mining Event Logs

Chair **Iris Reinhartz-Berger**

Francesco Folino, Massimo Guarascio and Luigi Pontieri

Mining Predictive Process Models out of Low-level Multidimensional Logs

Ngoc Chan Nguyen, Karn Yongsiriwit, Walid Gaaloul and Jan Mendling

Mining Event Logs to Assist the Development of Executable Process Variants

Anastasiia Pika, Moe T. Wynn, Colin J. Fidge, Arthur H.M. ter Hofstede, Michael Leyer and Wil M.P. van der Aalst

An Extensible Framework for Analysing Resource Behaviour Using Event Logs

SCIROCCO

THU
19

16:00

↓

17:30

SESSION
16

Databases

Chair **Panos Vassiliadis**

Riccardo Porrini, Matteo Palmonari and Carlo Batini

Extracting Facets from Lost Fine-grained Categorizations in Dataspaces

ZEPHYROS

THU
19

16:00

↓

17:30

SESSION
17



SESSION
17

Kunal Malhotra, Shibani Medhekar, Sham Navathe and David Laborde
Towards a Form Based Database Schema Creation and Modification System

Stefano Rizzi and Enrico Gallinucci
CubeLoad: a Parametric Generator of Realistic OLAP Workloads

THU
19

16:00
↓
17:30

TUTORIAL
4

OSTRIA AB

Business and Software Ecosystems modelling in i*
Xavier Franch, Angelo Susi and Eric S.K. Yu

Chair **Fabiano Dalpiaz**

FRI
20

09:00
↓
10:00

KEYNOTE
3

MAISTROS A

Against the Odds:
Managing the Unmanageable in a Time of Crisis
Diomidis Spinellis

Chair **John Mylopoulos**

FRI
20

10:30
↓
12:00

SESSION
19

SCIROCCO

Software Engineering

Chair **Haralambos Mouratidis**

George Chatzikonstantinou, Michael Athanasopoulos and Kostas Kontogiannis
Task Specification and Reasoning in Dynamically Altered Contexts

Kevin Vlaanderen, Fabiano Dalpiaz and Sjaak Brinkkemper
Finding Optimal Plans for Incremental Method Engineering

Juliana Padilha, Juliana Pereira, Eduardo Figueiredo, Jussara Almeida, Alessandro Garcia and Cláudio Sant'Anna
On the Effectiveness of Concern Metrics to Detect Code Smells: an Empirical Study

Industrial Panel

Chair **Yiannis Kompatsiaris** (moderator)

Theodoros Michalareas, Spiros Nikolopoulos, Nikos Papanotas, Nikos Sarris and Odysseas Spyrglou
Social Media for Commercial Applications and Opportunities

ZEPHYROS

FRI
20

10:30
↓
12:00

SESSION
20

Doctoral Consortium

Chair **Oscar Pastor** and **Yannis Vassiliou**

Marcella Ruiz, Universitat Politecnica de Valencia, Spain
A Traceability-based Method to Support Conceptual Model Evolution

Hana ne Ouksili, Univ.Versailles St. Quentin, Versailles, France
Theme Identification in RDF Graphs

Amna Dridi, Free University of Bozen-Bolzano, Italy
Information Retrieval Framework based on Social Document Profile

OSTRIA AB

FRI
20

10:30
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12:00

SESSION
21

Closing

MAISTROS A

FRI
20

12:00
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12:30

Systems and Business Process Modeling: are we Confusing the Map with the Territory?

Gil Regev

Chair **Pnina Soffer**

MON
16

09:00
↓
10:30

MAISTROSA

KEYNOTE
01

Business Process Modelling as a Human-driven Process

Chair **Ilia Bider**

**Jakob Pinggera, Stefan Zugal, Marco Furtner, Pierre Sachse, Markus Martini
and Barbara Weber**

The Modeling Mind: Behavior Patterns in Process Modeling (idea paper)

**Barbara Weber, Sarah Zeitelhofer, Jakob Pinggera, Victoria Torres
and Manfred Reichert**

Blending How Advanced Change Patterns Impact the Process of Process Modeling

Agnès Front, Dominique Rieu and Marco Santorum

A Participative End-user Modeling Approach for Business Process Requirements

MON
16

11:00
↓
12:30

MAISTROSA

SESSION
02

Representing the Human Perspective of Business Processes

Chair **Barbara Weber**

Franziska Semmelrodt, David Knuplesch and Manfred Reichert

*Modeling the Resource Perspective of Business Process Compliance Rules with the
Extended Compliance Rule Graph*

Matin Mavaddat, Stewart Green and Jin Sa

*Addressing the Paradigmatic Limitation of Conventional Business Process
Management Concepts by Proposing New Definitions*

**Cristina Cabanillas, Alex Norta, Manuel Resinas, Jan Mendling
and Antonio Ruiz-Cortés**

*Towards Process-Aware Cross-Organizational Human Resource Management (idea
paper)*

MON
16

14:00
↓
15:30

MAISTROSA

SESSION
03

Supporting Humans in Business Processes

Chair **Rainer Schmidt**

Ourania Hatzi, Giannis Meletakis, Panagiotis Katsivelis, Andreas Kapouranis, Mara Nikolaidou and Dimosthenis Anagnostopoulos
Extending the Social Network Interaction Model to Facilitate Collaboration through Service Provision

Ilia Bider and Stewart Kowalski
A Framework for Synchronizing Human Behavior, Processes and Support Systems using a Socio-technical Approach (idea paper)

Michaela Baumann, Michael Heinrich Baumann, Stefan Schoenig and Stefan Jablonski
Enhancing Feasibility of Human-driven Processes by Transforming Process Models to Process Checklists (idea paper)

MAISTROSA

MON
16

16:00
↓
17:30

SESSION
04

Variability-enabling Process Models

Chair **Manfred Reichert**

Florian Baer, Rainer Schmidt and Michael Möhring
Fabric-Process Patterns - Towards a Methodology for Fabric-process Design

Joos Buijs and Hajo Reijers
Comparing Business Process Variants using Models and Event Logs

Oumaima Saidani and Selmin Nurcan
Business Process Modeling: a Multi-perspectives Approach Integrating Variability

MAISTROSA

TUE
17

09:00
↓
10:30

SESSION
05

Various Models for Various Process Perspectives – I

Chair **Hajo Reijers**

Anderson Santana De Oliveira, Anis Char, Benjamin Schmeling and Gabriel Serme
A Model-Driven Approach for Accountability in Business Processes

Mattia Salnitri, Fabiano Dalpiaz and Paolo Giorgini
Modeling and Verifying Security Policies in Business Processes

MAISTROSA

TUE
17

11:00
↓
12:30

SESSION
06



SESSION
06

Ghazaleh Khodabandelou, Charlotte Hug, Rebecca Deneckère
and **Camille Salinesi**

Supervised vs. Unsupervised Learning for Intentional Process Model Discovery

TUE
17

14:00



15:30

SESSION
07

MAISTROSA

Various Models for Various Process Perspectives – II

Chair **Selmin Nurcan**

Charles Crick and **Eng Chew**

Towards a Consistent Cross-Disciplinary Ontology for Business Process (idea paper)

Ekaterina Bazhenova and **Mathias Weske**

A Data-Centric Approach for Business Process Improvement Based on Decision Theory

Michael Becker and **Stephan Klingner**

A Criteria Catalogue for Evaluating Business Process Pattern Approaches

TUE
17

16:00



17:30

SESSION
08

MAISTROSA

BPMDS in Practice

Chair **Pnina Soffer**

Carina Alves, George Valença and **André Felipe Santana**

Understanding the Factors that Influence the Adoption of BPM in Two Brazilian Public Organizations

Mturi Elias, Ilia Bider and **Paul Johannesson**

Using Fractal Process-Asset Model to Design the Process Architecture of an Enterprise: Experience Report

TUE
17

17:30

MAISTROSA

Closing

**Systems and Business Process Modeling:
are we Confusing the Map with the Territory?**

Gil Regev

Chair **Pnina Soffer**

MAISTROSA

MON
16

09:00
↓
10:30

KEYNOTE
01

Conceptual Modelling

Chair **Pericles Loucopoulos**

John Guerson, Joao Paulo Almeida and Giancarlo Guizzardi

Support for Domain Constraints in the Validation of Ontologically Well-Founded Conceptual Model

Dirk van der Linden and Henderik Proper

A Category Structure Study of Types Common to Conceptual Modeling Languages

SCIROCCO

MON
16

11:00
↓
12:30

SESSION
02

Requirements Modelling

Chair **Iris Reinhartz-Berger**

Raimundas Matulevicius

Model Comprehension and Stakeholder Appropriateness of Security Risk-oriented Modelling Languages

M. Mahmudul Hasan, Pericles Loucopoulos and Mara Nikolaidou

Classification and Qualitative Analysis of Non-Functional Requirements Approaches

SCIROCCO

MON
16

14:00
↓
15:30

SESSION
03

Business Process Modelling

Chair **Khaled Gaaloul**

Ahmed Tealeb, Ahmed Awad and Galal Galal-Edeen

Context-Based Variant Generation of Business Process Models

Iris Reinhartz-Berger and Inbal Mechrez

Modeling Design-Time Variability in Business Processes: Existing Support and Deficiencies

SCIROCCO

MON
16

16:00
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17:30

SESSION
04

Goal and Language Action Modeling

TUE
1709:00
↓
10:30SESSION
05

SCIROCCO

Chair **Raimundas Matulevicius**

Fabian Pittke, Benjamin Nagel, Gregor Engels and Jan Mendling
Linguistic Consistency of Goal Models

David Aveiro and Duarte Pinto
Devising DEMO Guidelines and Process Patterns & Validating Comprehensiveness and Conciseness

Enterprise and Business Modelling

TUE
1711:00
↓
12:30SESSION
06

SCIROCCO

Chair **Hans Weigand**

Constantinos Giannoulis and Jelena Zdravkovic
A Design Science Perspective on Business Strategy Modeling

Andres Ramos, Paola Gomez, Mario Sanchez and Jorge Villalobos
Automated Enterprise-Level Analysis of ArchiMate Models

New Approaches

TUE
1714:00
↓
15:30SESSION
07

SCIROCCO

Chair **Jelena Zdravkovic**

Fredrik Karlsson, Fredrik Linander and Fabian von Schéele
A Conceptual Framework for Time Distortion Analysis in Method Components

Hans Weigand
E3value Network Quality Properties

Ross Fenning, Huseyin Dogan and Keith Phalp
Applicability of SSM and UML for Designing a Search Application for the British Broadcasting Corporation (BBC)

Future Research on Modelling Approaches Brokerage Session

Chair **John Krogstie**

A number of short selected presentations of needs for future research on modeling, supporting interaction and explore possible future collaboration.

SCIROCCO

TUE
17

16:00

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17:30

SESSION

08

IFIP WG 8.1 Business Meeting

John Krogstie and **Jolita Ralyte**

SCIROCCO

TUE
17

17:30

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18:30

Things you were never told, did not understand,
forgot, or chose to ignore in statistics

Magne Jorgensen

Chair **Ioannis Stamelos**

MON
16

09:00
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10:30

MAISTROSC

KEYNOTE

01

Session 2

MON
16

11:00
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12:30

MAISTROSC

SESSION

02

Chair **Lefteris Aggelis**

Dimitris Liparas and **Evangelia Pantraki**

An Evolutionary Improvement of the Mahalanobis-Taguchi Strategy and its Application to Intrusion Detection

Hamed Shariat Yazdi, Mahnaz Mirbolouki, Pit Pietsch, Timo Kehrer
and **Udo Kelter**

Analysis and Prediction of Design Model Evolution Using Time Series

Maryam Shoaran and **Alex Thomo**

Zero-Knowledge Private Computation of Node Bridgeness in Social Networks

Androklis Mavridis

Valuation and Selection of OSS with Real Options

Designing Business Capabilities: Challenges and Outlooks

**Janis Stirna, Pericles Loucopoulos,
Oscar Pastor and Jelena Zdravkovic**

Chair **Sergio España**

ZEPHYROS

TUE
1709:00
↓
10:30KEYNOTE
01

Modeling and Capabilities

Chair **Jelena Zdravkovic**

Martin Henkel, Ilia Bider and Erik Perjons
Capability-based Business Model Transformation

Mohammad HosseinDanesh and Eric Y
Modeling Enterprise Capabilities withi: Reasoning on Alternatives*

Laleh Rafati and Geert Poels
Capability Sourcing Modeling: A high-level conceptualization based on Service-Dominant Logic

ZEPHYROS

TUE
1711:00
↓
12:30SESSION
02

Applying Capabilities-based Approaches in Practice

Chair **Peri Loucopoulos**

**Sergio España, Tania González, Jānis Grabis, Lauma Jokste, Raúl Juanes
and Francisco Valverde**
Capability-driven development of a SOA platform: a case study

Kurt Sandkuhl and Hasan Koc
*On the Applicability of Concepts from Variability Modelling in Capability Modelling:
Experiences from a Case in Business Process Outsourcing*

Janis Stirna
An Outlook on Patterns as an Aid for Business and IT Alignment with Capabilities

ZEPHYROS

TUE
1714:00
↓
15:30SESSION
03

Variability and Context Modeling

TUE
17

16:00



17:30

SESSION

04

MAISTROS C

Chair **Oscar Pastor****Hasan Koc, Erik Hennig, Stefan Jastram and Christoph Starke***State of the Art in Context Modelling - a Systematic Literature Review***PeterisRudzajs and MariteKirikova***Service Functioning Mode in Variability Model***AzadehAlebrahim, Stephan Faßbender, Martin Filipczyk,****Michael Goedicke, Maritta Heisel and Marco Konersmann***Towards a Computer-aided Problem-oriented Variability Requirements Engineering Method*

Welcome: Workshop overview and objectives;
brief introduction of participants

Pragmatics, Cognition, and Conceptual Modelling;
why Process Modelling and Process Mining may Converge
Stijn Hoppenbrouwers

Chair **Barbara Weber**

MAISTROSE

TUE
1709:00
↓
10:30KEYNOTE
01

Session 2

Chair **Stijn Hoppenbrouwers**

Idan Wolf and **Pnina Soffer**

Supporting BPMN Model Creation with Routing Patterns

Cornelia Haisjackl and **Stefan Zugal**

Investigating Differences between Graphical and Textual Declarative Process Models

Sietse Overbeek

Coupling Elements of a Framework for Cognitive Matchmaking with Enterprise Models

MAISTROSE

TUE
1711:00
↓
12:30SESSION
02

Session 3

Chair **Pnina Soffer**

Sergio España, Tania González, Jānis Grabis, Lauma Jokste, Raúl Juanes, Stefan Zugal and **Jakob Pinggera**

Low-Cost Eye-Trackers: Useful for Information Systems Research?

Yulia Shmerlin, Doron Kliger and **Hayim Makabee**

Reducing Technical Debt: Using Persuasive Technology for Encouraging Software Developers to Document Code

MAISTROSE

TUE
1714:00
↓
15:30SESSION
03

SESSION

03



Sofia Sherman and **Naomi Unkelos-Shpigel**

What do Software Architects Think They (should) Do?

Dirk van der Linden, Henderik Proper and **Stijn Hoppenbrouwers**

Conceptual Understanding of Conceptual Modeling Concepts: a Longitudinal Study among Students Learning to Model

Discussion: Cognitive research in IS - Future directions

Chair **Irit Hadar**

TUE
17

16:00
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17:00

SESSION

04

MAISTROSE

Cloud Computing for Enterprises - Advanced Challenges and Research Trends

Helen Karatza

Chair **Joseph Barjis**

OSTRIA CD

MON
16

09:00
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10:30

KEYNOTE
01

Session 2

Chair **Robert Pergl**

Manuel I. Capel and **Luis Eduardo Mendoza Morales**
Choreography Modeling Compliance for Timed Business Models

Michael Heinrich Baumann, Michaela Baumann, Stefan Schoenig
and **Stefan Jablonski**
Towards Multi-perspective Process Model Similarity Matching

Mario Sanchez, Julio Cesar Reyes and **Jorge Villalobos**
Extraction and Reconstruction of Enterprise Models

OSTRIA CD

MON
16

11:00
↓
12:30

SESSION
02

Session 3

Chair **Victor Romanov**

Martin Podloucký and **Robert Pergl**
*The Prefix Machine -- a Formal Foundation for the BORM OR Diagrams
Validation and Simulation*

Rainer Poisel, Marlies Rybnicek and **Simon Tjoa**
Simulation-based Cyber-Attack Assessment of Critical Infrastructures

Amjad Fayoumi and **Pericles Loucopoulos**
Business Rules, Constraints and Simulation for Enterprise Governance

OSTRIA CD

MON
16

14:00
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15:30

SESSION
03

MON
1616:00
↓
17:30SESSION
04

OSTRIA CD

Session 4

Chair **Manuel I. Capel****Jiří Vinárek, Petr Hnětynka, Viliam Šimko and Petr Kroha***Recovering Traceability Links between Code and Specification through Domain Model Extraction***Victor Romanov, Ilya Moskovoy and Margarita Onokhova***Emergency Response Planning Information System***Vojtech Merunka and Iveta Merunkova***Modeling and Visualization of Urban Planning and Building Development Processes for Local Government of Small Settlements*TUE
1709:00
↓
10:30SESSION
05

OSTRIA CD

Session 5

Chair **Vojtech Merunka****Alexander Lawall, Thomas Schaller and Dominik Reichelt***Enterprise Architecture: a Formalism for Modeling Organizational Structures in Information Systems***Mirtha L Fernández Venero***Verifying Cross-Organizational Workflows over Multi-Agent Based Environments***Zohra Sbaï and Kamel Barkaoui***On Compatibility Analysis of Inter Organizational Business Processes*TUE
1711:00
↓
12:30SESSION
06

OSTRIA CD

Open Format Interaction and Discussion
of Enterprise Engineering Panel (TBA)*Chair* **Joseph Barjis**

Empirical Studies

Chair **John Mylopoulos**

Juan Pablo Carvallo and **Xavier Franch**

Lessons Learned in the use of i by Non-Technical Users*

Elizabeth Monsalve, Julio Cesar Sampaio Do Prado Leite
and **Vera Maria Werneck**

A Case Study to Evaluate the Use of i for Helping Pedagogy Transparency*

Michael Koch and **Dieter Landes**

Modeling Software Engineering Education with i (Field Report)*

OSTRIA AB

MON
1609:00
↓
10:30SESSION
01

Applications of i*

Chair **Jennifer Horkoff**

Diana Marosin, Sepideh Ghanavati and **Dirk van der Linden**

A Principle-based Goal-oriented Requirements Language (GRL) for Enterprise Architecture

Mohammad Hossein Danesh and **Eric Yu**

Architecting Enterprise Capabilities: Creating Dynamic Capabilities from IT and Software Architecture

Lidia López and **Xavier Franch**

Applying Business Strategy Models in Organizations

Lysanne Lessard and **Eric Yu**

Value cocreation modeling: supporting the analysis and design of service engagements through agent orientation and business intelligence

OSTRIA AB

MON
1611:00
↓
12:30SESSION
02

Norms, Security, and Risk

Chair **Renata Guizzardi**

Silvia Ingolfo, Alberto Siena and **John Mylopoulos**

Goals and Compliance in Nomos 3

Fatma Basak Aydemir, Paolo Giorgini and **John Mylopoulos**

Designing Sociotechnical Systems with Protos

OSTRIA AB

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1614:00
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15:30SESSION
03

SESSION
03

Dolors Costal, Lidia Lopez, Mirko Morandini, Alberto Siena, Angelo Susi and Daniel Gross

Measuring the Impact of OSS Adoption Risks through i Models*

Tong Li and John Mylopoulos

Modeling and Applying Security Patterns Using Contextual Goal Models

MON
1616:00
↓
17:00SESSION
04

OSTRIA AB

Metrics and Tools

Chair **Julio Leite**

Daniel Colomer Collell and Xavier Franch

StarGro: Building i Metrics for Agile Methodologies*

Ralf Laue, Frank Hoglebe, Boris Böttcher and Markus Nüttgens

Preliminary Results on the Understandability of i Models*

Arian Storch, Ralf Laue and Volker Gruhn

Analysing the Style of Textual Labels in i Models (Tool Paper)*

TUE
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05

OSTRIA AB

The Inevitable Ontological Commitment or:
How I Learned to Stop Worrying and Love Ontology

Giancarlo Guizzardi

Chair **Eric Yu**

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06

OSTRIA AB

Organizations and Enterprise Architecture

Chair **Lidia Lopez**

Zinayida Petrushyna, Alexander Ruppert, Ralf Klamma, Dominik Renzel and Matthias Jarke

i-REST: Web-Enabled Re-engineering of i* Models*

Davide Calvaresi, Arnon Sturm, Eric Yu and Aldo Franco Dragoni

Exploring Domain Requirements and Technology Solutions: A Goal Modeling Approach



Jian Wang, Arnon Sturm, Daniel Gross and Eric Yu

Know-How Mapping: From i to ME-maps*

Renata Guizzardi, Anna Perini and Itzel Morales-Ramirez

A Goal-oriented Analysis to Guide the Development of a User Feedback Ontology

← SESSION

06

Short Papers

Chair **Julio Leite**

Eric-Oluf Svee and Jelena Zdravkovic

Using intentional modeling to discover the user preferences in existing software systems

Johannes Meißner and Frederik Schulz

Social Team Characteristics and Architectural Decisions: a Goal-oriented Approach

Martin Liebenberg, Victor Matare, Klaus Baier and Gerhard Lakemeyer

Towards Using i for Modeling Mega-Urban Processes*

Jameleddine Hassine and Mohammad Alshayeb

Measurement of Actor External Dependencies in GRL Models

Antonio De Padua A. Oliveira, Julio Cesar Leite and Henrique Sperandei

*The Experience of Using ERI*c in a Telecom Corporation*

Mattia Salnitri and Paolo Giorgini

Transforming Socio-Technical Security Requirements in SecBPMN Security Policies

Luis Santillan, Hugo Estrada, Alicia Martinez, Ricardo Quintero and Joaquin Perez

An i based approach for conceptual modeling of business process technology*

Hugo Estrada, Alicia Martinez, Francisco Barrera, Blanca Vazquez and Karen Najer

Adaptation of business models to the Structure-in-5 organizational style

OSTRIA AB

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SESSION

07

Wrap-up Discussion

Chair **Xavier Franch**

OSTRIA AB

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SESSION

08

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MAISTROSC

New Frontiers of Innovation Management Systems
Michele Missikoff

Chair **Paul Johannesson**

KEYNOTE
01

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MAISTROSC

Session 2

Chair **Benjamin Knoke**

Fabrizio Smith, Emanuele Storti and Francesco Taglino
Towards Semantic Collective Awareness Platforms for Business Innovation

Claudia Diamantini, Domenico Potena and Emanuele Storti
Data Mart Reconciliation in Virtual Innovation Factories

Nesat Efendioglu, Vedran Hrgovic, Ronald Quirchmayr and Robert Woitsch
Cooperative Decision Making in Virtual Enterprises

SESSION
02

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17

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MAISTROSC

Session 3

Chair **Johann Eder**

Maria Taramigkou, Fotis Paraskevopoulos, Efthimios Bothos, Dimitris Apostolou and Gregoris Mentzas
Leveraging user inspiration with microblogging-driven exploratory search

Mauro Isaja
System Architecture of the BIVEE Platform for Innovation and Production Improvement

Cristina Cristalli and Daniela Isidori
A methodology for the set-up of a Virtual Innovation Factory platform

SESSION
03

Issues and Perspectives
of Innovation Management Systems

Chair **F. Smith**

Panel – Moderator **Massimo Canducci**

MAISTROS C

TUE
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16:00



17:30

SESSION

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MAISTROSD

Citizen card: An overview of European experiences and the Greek case

Sokratis Katsikas

Chair **Haralambos Mouratidis**

KEYNOTE
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MAISTROSD

Session 2

Chair **Nadira Lammari**

Takao Okubo, Nobukazu Yoshioka and Haruhiko Kaiya

Requirements Refinement and Exploration of Architecture for Security and Other NFRs (long)

Presenter **Takao Okubo**

Discussant **Haruhiko Kaiya**

Haruhiko Kaiya, Sho Kouno, Shinpei Ogata, Takuo Okubo, Nobukazu Yoshioka, Hironori Washizaki and Kenji Kaijiri

Security Requirements Analysis using Knowledge in CAPEC (short)

Presenter **Haruhiko Kaiya**

Discussant **Takao Okubo**

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MAISTROSD

Session 3

Chair **David G. Rosado**

Andrea Atzeni, Tao Su and Teodoro Mondanaro

Lightweight Formal Verification in Real World, A case study (short)

Presenter **Tao Su**

Discussant **David Chadwick**

Kaniz Fatema and David Chadwick

Resolving Policy Conflicts - Integrating policies from multiple authors (long)

Presenter **David Chadwick**

Discussant **Tao Su**

SESSION
03

Konstantinos Demertzis and **Lazaros Iliadis**

Evolving Computational Intelligence System for Malware Detection (long)

Presenter **Konstantinos Demertzis**

Discussant **David G. Rosado**

← SESSION
03

Session 4

Chair **Haralambos Mouratidis**

Stavros Simou, Christos Kalloniatis, Evangelia Kavakli
and **Stefanos Gritzalis**

Cloud Forensics Solutions: A Review (long)

Presenter **Stavros Simou**

Discussant **Konstantinos Demertzis**

MASTROS D

TUE
17

16:00



17:00

SESSION

04

Sunday 15/6, 15:00, **Excursion to Vergina**

Monday 16/6, 20:30, **Joint Working Conferences and Workshops Dinner at Taverna "Pinakas"**

Wednesday 18/6, 18:00, **Walking Tour of Thessaloniki**

Wednesday 18/6, 20:30, **Reception at Makedonia Palace Hotel**

Thursday 19/6, 20:30, **Gala Dinner at Hyatt Hotel**
(departure from the MET Hotel at 20:00)

Friday 20/6, 15:00, **Excursion to Vergina**



Vergina, Gold Urn of King Philip II



Thessaloniki, White Tower



CITYMAP



Conference Venue

The MET Hotel

48, 26th October Str • 546 27 Thessaloniki • +30 231 001 7000

www.themethotel.gr

Welcome Reception

Macedonia Palace

2, Megalou Alexandrou Avenue • 546 40 Thessaloniki • +30 231 089 7197

www.makedoniapalace.com

Conference Dinner

Hyatt Regency Hotel

13 km Thessaloniki-Perea • 570 01Thessaloniki • +30 231 040 1234

www.thessaloniki.regency.hyatt.com

Joint Working Conferences and Workshops Dinner

“Pinakas” Tavern

27, Mplanou Str • Athonos square • 546 22 Thessaloniki • +30 231 028 0076

<http://www.ouzostonpinaka.com.gr/>

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Makedonia +30 231 055 0500

Taxi Mercedes +30 231 052 4499

Thessaloniki Airport “Macedonia”

Information Centre +30 231 047 3212, 231 047 3312

Flights information +30 231 047 3977, 231 047 3720

Thessaloniki Tourist Office

136, Tsimiski str • 546 21 Thessaloniki

Tel. Center +30 231 025 2170

Tourist Facilities +30 231 025 4834

