Enterprise Modelling and Information Systems Architectures (EMISA 2014)

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Gesellschaft für Informatik e.V. (GI)
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Preface

At the beginning of the 3rd millennium, digital Information Systems (IS) rule our economies, and have reshaped our social and everyday life, especially with the advent of the Internet and the cheap and ubiquitous access to its countless services – services that require well-designed, cost-efficient IS at the provider side.

EMISA has been focusing very successfully on IS design for 35 years now. This year’s anniversary workshop will be an excellent opportunity to draw a balance on what has been achieved (and not), and what is state-of-the-art in the domain of enterprise modelling and IS architectures. Based on this “where are we?” consideration, the question of “where do we go?” will be equally interesting. What are current and foreseeable future topics and trends in IS research, and what is the impact on modelling? Considering on-going technology changes like mobile and cloud computing, and still evolving new methodological approaches like service oriented and model-driven architectures, the main question is: Do we have the right methods and tools to design the new and emerging systems?

EMISA 2014 is the 6th International Workshop in a series that provides a key forum for researchers and practitioners in the fields of enterprise modelling and the design of IS architectures. The workshop series emphasizes a holistic view on these fields, fostering integrated approaches that address and relate business processes, business people and information technology. It provides an international forum to explore new avenues in enterprise modelling and the design of IS architectures by combining the contributions of different schools of Information Systems, Business Informatics, and Computer Science. have asked for contributions covering the following topics:

- Enterprise modelling: languages, methods, tools
- Patterns for enterprise modelling and IS architectures
- Model life cycle management and model evolution
- Model configuration and management of model variants
- Model quality: metrics, case studies, experiments
- Process modelling and process-aware IS
- Collaborative enterprise modelling
- Model-driven architectures and model-driven IS development
- Component- and service-oriented software architectures
- Service engineering and evolution
- Service composition, orchestration and choreography
- Complex event processing and event-driven architectures
- Human factors in enterprise modelling and IS
- Modelling social information and enterprise innovation networks
- Cloud computing infrastructures and their influence on IS engineering
- Security and trust aspects
- Mobile enterprise services
- Individual-based IS strategies
- Software product line architectures and modelling
- Visual aspects of modelling and modelling languages
• IS for large scale data and related design questions

We invited papers that outline research in progress as well as completed research papers. Submitted papers were reviewed by at least three members of the program committee, and were evaluated on the basis of significance, originality, technical quality, and exposition.

The Workshop Papers

In 2014, nine papers were accepted for presentation at the workshop. The selected articles provide a snapshot of current examples for how IS research can be conducted, and what insights such research can uncover.

[Session 1: Enterprise Modelling]

In their position paper “Towards An Analysis Driven Approach for Adapting Enterprise Architecture Languages”, De Kinderen and Ma argue for an approach for assisting language engineers in adapting enterprise architecture languages in a controlled manner.

The paper “Outlining a Graphical Model Query Approach Based on Graph Matching” by Breuker et. al outlines a graphical model query approach based on graph matching. It consists of a graphical query specification language and a matching algorithm based on graph matching that takes the query as input and returns all matches found in a model to be searched. The graphical query specification language can be used to draw model queries much like a model would be constructed.

[Session 2: Process Modelling]

The paper “Suggested Guidelines for choosing an adequate Level of Detail” by Nissen et. al deals with the challenge to determine an adequate level of detail in process modelling. In literature, only few and rather unspecific recommendations exist how to solve this problem. In their paper, the authors look at which measurable factors influence the adequate detail level, and on this basis make proposals for guidelines how it can be determined in a specific application situation.

The paper “Designing and Implementing a Framework for Event-based Predictive Modelling of Business Processes” by Becker et. al deals with predictive modelling techniques to event data collected during the execution of business processes. Specifically, the paper presents a framework developed to support real-time prediction for business processes. After fitting a probabilistic model to historical event data, the framework can predict how running process instances will behave in the near future, based on the behavior seen so far.

The paper “BPMN Extension for Business Process Monitoring” by Baumgräß et. al suggests an extension to BPMN, which implements the connection between process models and events. Bridging this gap is an important challenge. Generally, the execution of busi-
ness processes generates a lot of data, which can be utilized for process monitoring and analysis. In manual executing business process environments, however, i.e., in environments not driven by a process engine, the correlation of occurring events to activities of the corresponding process model is far from being trivial. Typically, process event monitoring points (PEMPs) are utilized to specify the locations, where particular events are expected, in the process model at design-time. Therewith, process execution information can be assigned to a process during run-time.

[Session 3: Process Management Technology]

The paper “Towards Schema Evolution in Object-aware Process Management Systems” by Chiao et. al presents fundamental requirements for enabling schema evolution in the context of object-aware processes. These requirements are then discussed along PHIL-harmonicFlows, a framework that targets at comprehensive support of object-aware processes.

In her paper “On the Usability of Business Process Modelling Tools – a Review and Research Agenda” Maria Shitkova picks up the challenge to select a business process modelling (BPM) tool with respect to the aspect of usability. She conducts a literature review to find out the current state of research on the usability in the BPM area. The results of the literature review show, that although a number of research papers mention the importance of usability for BPM, real usability evaluation studies have rarely been undertaken. Based on the results of the literature analysis the possible research directions in the field of usability of BPM tools are suggested.

[Session 4: Process Implementation]

The paper “Visual Analytics for Supporting Manufacturers and Distributors in Online Sales” by Parisot et. al presents basic concepts of OPTOSA, a Visual Analytics solution for the optimization of online sales, designed to support manufacturers in all phases of the online sales process from the product specification to the price fixing and more. OPTOSA combines a data processing module that builds and constantly updates operational knowledge related to sales positioning with a decision assistant that uses relevant aspects of the knowledge for helping the tasks of the different teams along the integrated chain of the sales.

Finally, in their paper “Business Process as a Service – Status and Architecture” Barton and Seel deal with business process as a service (BPaaS) as next level of abstraction. Specifically, they present a literature analysis of the current state-of-the-art in BPaaS. In order to investigate how a process can be built on top of a cloud service, a prototype of an external application is presented, which is built on top of a cloud service using a RESTful API.
We hope you find these papers stimulating and the presentations interesting. We would like to thank the authors for their efforts, and also the program committee in dedicating their time to evaluating and selecting these papers.

Luxembourg, September 2014  
Fernand Feltz, Bela Mutschler, Benoît Otjacques
Directory

Keynotes

Stefanie Rinderle-Ma
*Flexibility and Evolution in Process-Aware Information Systems: All Problems Solved?* .......................................................... 15

Horst Kremers
*On the Role of Process Models in Risk and Disaster Information Management* .......... 19

Enterprise Modelling

Sybren De Kinderen and Qin Ma
*Towards An Analysis Driven Approach for Adapting Enterprise Architecture Languages* ......................................................................................................................... 23

Dominic Breuker, Hanns-Alexander Dietrich, Matthias Steinhorst, Patrick Delfmann
*Outlining a Graphical Model Query Approach Based on Graph Matching* .............. 37

Process Modelling

Volker Nissen, Christian Heyn, Frank Termer
*Choosing an adequate level of detail in business process modelling* ......................... 55

Jörg Becker, Dominic Breuker, Patrick Delfmann and Martin Matzner
*Designing and Implementing a Framework for Event-based Predictive Modelling of Business Processes* ........................................................................................................ 71

Anne Baumgräß, Nico Herzberg, Andreas Meyer and Mathias Weske
*BPMN Extension for Business Process Monitoring* .................................................. 85

Process Management Technology

Carolina Ming Chiao, Vera Kuenzle and Manfred Reichert

Maria Shitkova
*On the Usability of Business Process Modelling Tools – a Review and Future Research Directions* ........................................................................................................ 117
Process Implementation

Olivier Parisot, Gero Vierke, Thomas Tamisier, Yoanne Didry, Helmut Rieder
Visual Analytics for Supporting Manufacturers and Distributors in Online Sales

Thomas Barton and Christian Seel
Business Process as a Service – Status and Architecture