

Enterprise Modelling and Information Systems Architectures

An International Journal

Volume 4 | No. 1 June 2009



German Informatics
Society



3rd International Workshop on Enterprise Modelling and Information Systems Architectures

Concepts and Applications

Objectives

The strategic importance of modelling is recognised by an increasing number of companies and public agencies. Enterprise modelling delivers the 'blueprints' for codesigning organisations and their information systems, so that they complement each other in an optimal way. Achieving this interplay requires a multi-perspective approach that takes into account technical, organisational and economic aspects. It also recommends the cooperation of researchers from different fields such as Information Systems, Business Informatics and Computer Science.

The 3rd International Workshop on Enterprise Modelling and Information Systems Architectures is jointly organized by the GI Special Interest Group on Modelling Business Information Systems (GI-SIG MoBIS) and the GI Special Interest Group on Design Methods for Information Systems (GI-SIG EMISA).

Programme Committee Co-Chairs

- Werner Esswein (TU Dresden)
- Jan Mendling (HU Berlin)
- Stefanie Rinderle-Ma (Uni Ulm)

Location - Date

University of Ulm - September 10-11, 2009
Co-located with the 7th International Conference
on Business Process Management (BPM 2009).

Subject and Topics

The workshop will address all aspects relevant for enterprise modelling and for the design of information systems architectures. It will provide an international forum to explore new avenues by combining the contributions of different 'schools' of Information Systems, Business Informatics, and Computer Science. Therefore, the workshop is open for a broad range of subjects. Possible topics include, but are not limited to:

- enterprise modelling: languages, methods, and tools
- reference models
- patterns for enterprise modelling (e.g., process patterns)
- modelling services and service compositions in service-oriented architectures
- process modelling in process-aware information systems
- component-oriented software architectures
- model-driven system development
- model analysis and simulation
- ontologies for enterprise modelling
- model evolution, model life cycle management
- management of model variants and versions
- model quality (e.g., compliance between the system and model level)
- modelling cross-organizational cooperation
- emerging areas (e.g., value-based modelling)
- communities for developing open reference models



More information and registration on www.uni-ulm.de/in/emisa09

The workshop is jointly organized by the GI Special Interest Group on Modelling Business Information Systems (GI SIG-MoBIS) and the GI Special Interest Group on Design Methods for Information Systems (GI SIG-EMISA).

SIG MoBIS
Special Interest Group
on Modelling Business Information Systems

SIG EMISA
Special Interest Group
on Design Methods for Information Systems

Table of Contents

Editorial Preface	02	
Oliver Kopp, Daniel Martin, Daniel Wutke, Frank Leymann	03	The Difference Between Graph-Based and Block-Structured Business Process Modelling Languages
Katrina Leyking, Ralf Angeli	14	Competency-Oriented Business Process Analysis – A Model-based Approach
Jörg Becker, Daniel Beverungen, Ralf Knackstedt, Oliver Müller	26	Model-Based Decision Support for the Customer-Specific Configuration of Value Bundles
Cristian Opincaru, Gabriela Gheorghe	39	Service Oriented Security Architecture
Upcoming Events	49	
Imprint	50	
Editorial Board	51	
Guidelines for Authors	52	

Editorial Preface

While software development is an important case for conceptual modelling, it is certainly not the only application field. At its core, conceptual modelling is about structuring complex problem domains with respect to a certain purpose. Often, it is suggested that a conceptual model is a representation of the targeted real world domain. That is, however, a simplification. Instead, conceptual models are representations of the (technical) language used in the focused domain. Hence, conceptual models are linguistic representations—in a twofold sense: On the one hand, they are created through a (modelling) language, on the other hand, they represent reconstructions of an existing language. The reconstruction process is driven by the second key characteristic of conceptual models: the demand for useful and sustainable abstractions. Abstraction is a crucial intellectual activity to deal with complex problems. It allows for more efficient communication—by abstracting from irrelevant and/or variable details. Also, abstraction offers considerable advantages for maintaining large systems. However, these benefits are contrasted by the effort it takes to develop powerful abstractions. It requires intellectual skills and time; hence, it is usually expensive. But this is a well known story: reducing complexity implies to first increase it—by searching for suitable abstractions. Different from abstractions used in other disciplines, conceptual models are specified through formal or semi-formal modelling languages. This allows for the use of modelling tools that feature various analysis and transformation capabilities. Different from mathematical abstractions, conceptual models usually offer a graphical representation—based on the assumption that graphical representations are often better suited to visualize complex relations. Hence, conceptual models serve as a medium to foster cooperation across varying disciplines and professions.

While general purpose modelling languages, such as the ERM or the UML, have gained a remarkable popularity, they provide modellers only with rather poor linguistic instruments. Imagine, you were supposed to write a technical report and the language you could use for this purpose would be restricted to basic terms such as “class”, “attribute” etc. Domain-specific modelling languages promise to improve modelling efficiency. They include reconstructions of domain-specific terms. Therefore, modellers are not forced to develop them on their own. Furthermore, they come with a specialized graphical notation, which makes corresponding models easier to understand. The design of problem-specific modelling methods, which are comprised of a modelling language and a corresponding process model, is a

promising approach to increase the efficiency of projects in many domains. A growing number of (meta) modelling tools supports this kind of method engineering. We are just at the beginning of an evolution that will produce many domain-specific modelling languages.

The articles selected for this issue give an impression of the range of purposes that can be addressed by conceptual models and respective modelling languages. Oliver Kopp, Daniel Martin, Daniel Wutke and Frank Leymann focus on a pivotal subject of conceptual modelling in Information Systems: business processes. While many pertinent modelling languages follow a graph-based paradigm, there are others that feature a block structure instead. The paper provides an elaborate comparative assessment of these two different paradigms. Katrina Leyking and Ralf Angeli address a key success factor of business process management: staffing processes with employees who have an appropriate qualification. For this purpose, they suggest enriching business process models with concepts to represent human skills. The concepts extend an existing modelling language and are supported by a modelling tool. In their paper, Jörg Becker, Daniel Beverungen, Ralf Knackstedt and Oliver Müller demonstrate the use of a modelling language for a novel application: the design and evaluation of customer-specific value bundles which consist of products and related services. The language supports the convenient design of consistent bundle configurations. It is supplemented by a corresponding modelling tool. Cristian Opincaru and Gabriela Gheorghe present a more technical model, i.e. a security architecture for service-oriented systems. It is motivated by specific security problems posed by service-oriented systems. The proposed architecture, which is accompanied by a prototype, shows a number of advantages over existing solutions.

I hope you benefit from reading this issue. I would also like to remind you of this year's outstanding modelling conference in Germany: EMISA'09 provides an excellent forum for researchers and practitioners who work in the various fields of enterprise modelling and information systems architectures. It takes place September 9-11th in Ulm together with the seventh International Conference on Business Process Management (BPM'09). For more details, see the call for participation you find in this issue. On behalf of the program committee I cordially invite you to join us in Ulm.

Ulrich Frank