



Guest editorial for the special section on PoEM 2023

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1 Introduction

The IFIP WG 8.1 Working Conference on the Practice of Enterprise Modelling (PoEM) series of conferences aims to improve the understanding of the practice of enterprise modelling by offering a forum for sharing experiences and knowledge between the academic community and practitioners from industry and the public sector.

PoEM 2023 took place in Vienna, Austria, from November 28th to December 1st, 2023. A total of 34 submissions were submitted to the conference, which attracts well-focused high-quality submissions. From these submissions, after critical reviewing, 12 papers (i.e. an acceptance rate of 35%) were selected to be presented at PoEM 2023, covering topics ranging from:

- Enterprise modelling and artificial intelligence,
- Emerging architectures and digital transformation,
- Modelling tools and approaches, and
- Enterprise modelling at work.

It has become a much-valued tradition that authors of the best papers at each PoEM conference edition are invited to submit revised and extended versions of their papers for publication in a special section in SoSyM. The selection of these papers is based on input from the Program Committee and on the reception of the papers at the conference.

For this special section, the authors of six papers were invited and agreed to prepare expanded and revised manuscripts. Each of the six submitted papers was subject to the full SoSyM review cycle and authors received anonymous feedback in two rounds of reviewing from three reviewers who are experts in the field. In the end of this process, three

papers were accepted for publication and appear in this special section.

2 Selected papers

The first paper in this special section, entitled *The extended EA ModelSet – a FAIR dataset for researching and reasoning enterprise architecture modeling practices*, authored by Philipp-Lorenz Glaser, Emanuel Sallinger, and Dominik Bork, concerns the growing intersection of conceptual modelling research and artificial intelligence. It observes that increasing attention is being directed towards the use of artificial intelligence and machine learning to automate tasks such as model creation, completion, analysis, and processing. This development is likewise gaining traction in enterprise architecture research.

At the same time, the paper notes a structural imbalance within the field. In contrast to neighbouring disciplines such as business process management, enterprise architecture still lacks well-established guidelines, modelling patterns, and broadly accepted best practices for developing high-quality enterprise architecture models. A further constraint on progress is identified in the limited availability of openly accessible enterprise architecture models of sufficient quantity and quality—an issue that hampers systematic artificial intelligence-based research.

To address this limitation, the authors introduce the extended Enterprise Architecture ModelSet, presented as a curated and FAIR repository of enterprise architecture models specified in ArchiMate. The paper reports on the construction of this dataset and outlines exemplary empirical and machine learning-based research opportunities that it enables. In doing so, it positions the Enterprise Architecture ModelSet as foundational infrastructure and invites continued community engagement in its expansion and maintenance.

The second paper, entitled *A study on the impact of the level of participation in enterprise modelling*, authored by Anne Gutschmidt, Charnlotte Verbruggen, and Monique

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Snoeck, addresses the effects of participatory enterprise modelling, a practice widely assumed to foster stronger commitment, a sense of ownership, and more positive evaluations of resulting models among domain experts. Despite these expectations, the paper observes that empirical evidence substantiating such claims remains limited.

To investigate these presumed benefits, the authors examine three distinct modelling settings characterised by varying degrees of domain expert involvement. In the first setting, an overall model was derived from four individual interviews. In the second, it was consolidated from four individually created models. In the third, it was developed collaboratively in a joint session involving both domain experts and modelling consultants.

The reported findings indicate that the non-participatory interview-based setting resulted in less favourable appraisals. Participants in this setting perceived fewer opportunities for involvement, attributed lower value to the resulting model, and assigned greater influence to the modelling consultants.

By systematically comparing these configurations, the paper provides empirical grounding for discussions around participatory enterprise modelling and offers practical insights. In particular, it supports practitioners in weighing the potential benefits of participatory approaches against the organisational effort and financial costs they entail.

Finally, the third paper entitled *Making a case for enterprise modelling as a research method* authored by *Sergio España, Gudrun Thorsteinsdottir, Vijanti Ramautar, and Óscar Pastor López* turns its attention to enterprise modelling and its role in research. It observes that enterprise modelling, understood as the systematic elicitation and documentation of organisational phenomena from multiple interrelated perspectives, is widely applied in information and computer sciences to engineer enterprises and information systems.

At the same time, enterprise modelling is rarely recognised as a research method in its own right, and even less so beyond its traditional disciplinary boundaries. The paper therefore advances the position that enterprise modelling constitutes a valid and rigorous research method, both within and outside its established domains of application. To substantiate this claim, the authors draw on a project that employed enterprise modelling to investigate the complex interplay between sustainability reporting and strategic management practices. In addition, expert interviews with enterprise modelling scholars were conducted to capture informed assessments of the strengths and weaknesses of enterprise modelling as a research method.

These insights are used to outline a roadmap aimed at strengthening the recognition and broader adoption of enterprise modelling in research practice.

Throughout, the paper underscores the structuring capacity of enterprise modelling and highlights how its modelling constructs provide a distinct analytical lens on organisational motivations, structures, processes, communication patterns, information flows, technologies, and their intricate interdependencies.

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João Paulo A. Almeida Specialises in conceptual modelling, enterprise modelling, and the ontological foundations of information systems. He is a Professor at the Federal University of Espírito Santo (UFES), Brazil, and a founding member of the Ontology and Conceptual Modeling Research Group. His work focuses on improving the theoretical and methodological foundations of modelling languages used in information systems and enterprise engineering. He has contributed extensively

to research on ontology-driven conceptual modelling, including the development and application of the Unified Foundational Ontology (UFO), the multi-level theory (MLT), and associated implementations and tools. His research aims to apply ontological analysis rigorously to enhance conceptual clarity, semantic precision, and methodological soundness in organisational and information systems modelling. He has published widely in international peer-reviewed journals and conferences in the fields of conceptual modelling, enterprise engineering, and information systems. In addition to his research activities, he has participated in international standardisation and has contributed to the organisation of academic events in his field.



Monika Kaczmarek-Heß Specialises in conceptual modelling, enterprise modelling, and knowledge representation, with a particular focus on the integration of complex organisational and information systems. She is Head of the Data Integration Centre at the University Hospital Düsseldorf, Germany. She received her PhD in 2010 under a cotutelle agreement between the Poznan University of Economics, Poland, and Macquarie University, Sydney, Australia. Prior to her current position, she

served as an Assistant Professor at the Poznan University of Economics and at the Chair of Information Systems and enterprise modelling at the University of Duisburg–Essen, Germany. Her research addresses conceptual and enterprise modelling, formal knowledge representation, and methods for integrating heterogeneous data and information systems. She has worked on participatory modelling approaches and organisational transformation, applying these methods in areas such as health care, business process management, enterprise architecture, and the energy sector. In her current role, she focuses on the standardisation and semantic processing of medical documentation and the integration of clinical data infrastructures to support data-driven health care and biomedical research. She has published in international peer-reviewed journals and conferences in the fields of conceptual modelling, enterprise modelling, business process management, and information systems engineering. In addition to her research activities, she has contributed to academic teaching and collaborative projects that connect methodological research with practical organisational applications.



Henderik A. Proper Erik for friends, is Full Professor in Enterprise & Process Engineering at the TU Wien (Vienna, Austria), and is also a Visiting Professor in Enterprise & Information Systems Engineering at the HU University of Applied Sciences (Utrecht, The Netherlands). Erik has a broad interest in the foundations and applications of conceptual modelling, while specialising this in the context of enterprise & process engineering. He has published extensively in leading international journals and conferences in the fields of enterprise engineering, conceptual modelling, and information systems. Beyond his research, Proper participates in international collaborations, scientific committees, and academic initiatives that advance enterprise modelling as a rigorous and applicable discipline. Through his work, Proper contributes to bridging theoretical modelling research with practical organisational applications, fostering methodological rigour, and promoting the structured use of models to understand and improve complex organisational phenomena.