

Preface

The importance of innovative processes for design and engineering in ensuring business success is increasingly recognised in today's competitive environment. However, academia and management need to gain a more profound understanding of these processes and develop better management approaches to exploit such business potential.

The aim of this *First International Conference on the Modelling and Management of Engineering Processes* is to showcase recent trends in the modelling and management of engineering processes, explore potential synergies between different modelling approaches, gather and discuss future challenges for the management of engineering processes and identify future research directions.

This inaugural Modelling and Management of Engineering Processes (MMEP) conference is being organised by the Engineering Design Centre at the University of Cambridge, the Chair of Integrated Product Development at the Royal Institute of Technology in Stockholm, the Institute for Product Development at the Technische Universität München, and the Chair for Information Technologies in Mechanical Engineering at the Otto-von-Guericke-Universität in Magdeburg on behalf of the Design Society's Special Interest Group of the same name.

This conference marks not only a new beginning for the MMEP community, but also the end of a process to develop a research roadmap for the Modelling and Management of Engineering Processes. During March 2009 a series of industry workshops were held in the UK, Sweden and Germany in order to identify future research needs, assisted by representatives from 27 companies from within the manufacturing, service and healthcare sectors. A preliminary roadmap was presented to and discussed with the research community in August 2009 at the ICED Conference in the US, and a joint white paper drafted (Heisig *et al.* 2009)¹.

¹ Heisig P, Clarkson PJ, Hemphälä J, Wadell C, Norell-Bergendahl M, Roelofsen J, Kreimeyer M, Lindemann U (2009) Challenges and future fields of research for modelling and management of engineering processes, 2nd edn. Workshop Report CUED/C-EDC/TR 148, Cambridge Engineering Design Centre, Department of Engineering, University of Cambridge, UK

This first MMEP conference is intended launch a bi-annual series providing an international platform to highlight and discuss industry best practice alongside leading edge academic research. A Programme Committee has been assembled, comprising representatives from fifteen countries including Australia, Argentina, Canada, France, Germany, India, Israel, Italy, Japan, Korea, the Netherlands, Spain, Sweden, USA and the United Kingdom. Industry interest is reflected in the fact that nearly half of the committee members represent global companies, such as Airbus, AUDI, BAE, BMW, Boeing, Bombardier, BP, BT, Daimler, General Motors, MAN, Infosys, Renault, Rolls-Royce, Samsung, SAP, Scania, Siemens, Toshiba, Volvo and Xerox.

The papers chosen for inclusion in this volume have been selected by reference to blind reviews undertaken by members of the Programme Committee who in turn represent a range of key disciplines including computer science, engineering design, innovation management and product development. They represent a sample of leading national and international research in the fields of engineering design, process modelling in engineering design and product development, and innovation management are divided into four areas:

- I. *Engineering Process Management in Theory* concerns research that addresses process architecture frameworks, the nature of process modelling and product engineering processes;
- II. *Managing Complex Engineering Processes* focuses on approaches to support the planning and improvement of engineering processes, highlighting issues such as uncertainty and iteration;
- III. *Managing Product and Process Information* looks at research that supports the capture of information and knowledge, process mining and estimation methods based on sparse data;
- IV. *Engineering Process Management in Practice* describes process management in organisations, including the modelling of process quality, interactive visualisation and robust innovation processes.

Finally, we would like to thank all those authors and reviewers who have contributed to the preparation of this book, and also Suzanne Williams, Susan Ball and Mari Huhtala who transformed a disparate set of initial drafts into a coherent and attractive book.

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The MMEP 2010 Editorial Committee
July 2010*



<http://www.springer.com/978-1-84996-198-1>

Modelling and Management of Engineering Processes

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2010, XII, 213 p., Hardcover

ISBN: 978-1-84996-198-1