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(Eds.)

Understand, Innovate, and Manage your Complex System!

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Foreword

Welcome to the 19th International Dependency and Structure Modeling Conference (DSM 2017) held on September 11th to 13th in Espoo, Finland. This year, the conference is hosted by Aalto University Design Factory and organized in collaboration with the Technical University of Munich.

After two years in North and South America, the conference returns to Europe with the theme “Understand, Innovate, and Manage your Complex System!” Complexity has become an ever present topic, not only at the DSM Conference; in the last few years we have seen technical systems turn into socio-technical systems with the integration of services, stand-alone products become part of interconnected systems, and organizations growing into decentralized networks. DSM (Dependency and Structure Modelling, also known as the Design Structure Matrix) methods have proven invaluable in designing complex systems, from product architectures to large market structures.

The International DSM Conference is the annual forum for practitioners, researchers and developers to exchange experiences, discuss new concepts and showcase results and tools. We are confident that this event will provide participants new insights, ideas and solutions on dependency and structure modelling.

Furthermore, we are pleased to host the first “DSM Sprint Workshop” inspired by the innovative spirit of Aalto Design Factory. Teams composed of a mix of researchers, practitioners, and tool providers will compete to solve a real challenge proposed by a sponsoring company.

The papers submitted for this year’s conference were each peer-reviewed by at least two members of the Scientific Committee, who made acceptance/rejection recommendations and provided helpful guidance for revisions. The accepted papers appearing in these Proceedings have been improved based on that feedback.

This volume contains 23 peer-reviewed papers that describe the recent advances and emerging challenges in DSM research and applications. They advance the DSM concepts and practice in 8 areas:

1. DSM Methods and Algorithms
2. Sustainability
3. Change Management
4. Information and communication
5. System Architecture
6. Systems Engineering
7. Project Management
8. Organization and teams

These Proceedings represent a broad overview of the state-of-the-art on the development and application of DSM. There are a significant number of papers with industry authors or co-authors, reflecting this balance and synergy between conceptual development and real-life industrial application, which are in the genes of the DSM Conference series.

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