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# Proceedings of the 21st International Dependency and Structure Modeling (DSM) Conference

Monterey, CA, USA, 23 – 25 September 2019

# $21^{\rm st}$ INTERNATIONAL DEPENDENCY AND STRUCTURE MODELING CONFERENCE, DSM 2019

MONTEREY, CA, USA, 23 – 25 September, 2019

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### **Foreword**

Welcome to the 2019 edition of the International Dependency and Structure Modeling (DSM) Conference. DSM 2019 is held on September 23<sup>rd</sup> to 25<sup>th</sup> in Monterey, California, USA.

DSM (Dependency and Structure Modelling, also known as the Design Structure Matrix) methods have proven invaluable in designing and understanding complex systems, from product architectures to work processes to large organizations.

The International DSM Conference is the annual forum for practitioners, researchers, and developers to exchange experiences, discuss new concepts, and showcase results as well as new methods and tools. The event provides participants with new insights, ideas, and solutions for dependency and structure modeling.

As part of the conference, we are pleased to host the third "DSM Industry Sprint Workshop". Teams composed of a mix of researchers, practitioners, and tool providers will compete to solve real industry challenges. This gives participants the opportunity to practice and apply new methods developed within the DSM society.

The papers submitted for this year's conference were each 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 17 peer-reviewed papers that describe the recent advances and emerging challenges in DSM research and applications. They advance the DSM concepts and practice in 5 main areas:

- 1. Managing Organizations
- 2. Product Architecture Design
- 3. Project Management
- 4. New Methods and Algorithms
- Use Cases

These Proceedings represent a broad overview of the state-of-the-art on the development and application of DSM. Understanding and managing complex interdependent relationships within and across product/process/people architectures is a recurring theme troughout this year's conference. Furthermore, there are a significant number of contributions 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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All contributions in these proceedings have undergone a rigid review process. We would like to cordially thank all reviewers for their invaluable support.

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