



## Second International Conference on Model-Based Systems Engineering MBSE'09

[www.mbse-org.org](http://www.mbse-org.org)

Herzeliya and Haifa, Israel  
March 2-5, 2009

Co-located with the  
Fifth National Conference on Systems Engineering of  
INCOSE\_IL - The Israeli Chapter of INCOSE

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### Sponsored by:

- Technion, Israel Institute of Technology, Faculty of Industrial Engineering and Management
- Technion Foundation for Research and development, Gordon Research Center for Systems Engineering
- ILTAM – The Israeli Users Association of Advanced Technologies in the Electronics Industry
- INCOSE – International Council on Systems Engineering
- IEEE – Society on Systems Man and Cybernetics

### Aims and Scope

Model-Based Systems Engineering (MBSE) is gaining acceptance as the best practice for well-founded Systems Engineering. New products and systems require the involvement of professionals having multiple disciplinary backgrounds and various other stakeholders, notably customers, who need to communicate and share a common understanding of all the system's characteristics, intricacies, and implications using a common set of domain-neutral concepts. An essential element in the solution to this problem lies in an agreement on, and the adoption of, a generic conceptual modeling language, framework, ontology, and methodology that would provide a common ground for all the parties involved. This has been a major drive for the recent emergence of such languages as OMG SysML, frameworks such as DoDAF and MoDAF, and methodologies such as IBM-Telelogic Harmony-SE, INCOSE Object-oriented Systems Engineering Method (OOSEM), IBM Rational Unified Process for Systems Engineering (RUP SE), and Object-Process methodology (OPM).

The Second International Conference on Model-Based Systems Engineering, MBSE'09 (formerly ICSEM'07) is a premier forum for the elicitation and exchange of ideas on issues and problems regarding systems engineering and its relation to the development, evolution, adoption, evaluation, and dissemination of languages, methodologies, and approaches for conceptual models of complex systems. The objective of the Conference is to improve practices of Model-Based Systems Engineering by endowing this evolving discipline with missing theoretical and methodological underpinnings and improving the communication of complex systems' function, structure, and behavior among stakeholders.

In addition to research and practice papers the conference will feature invited speakers, tutorials, and an industrial exhibition.

## Venue

- 2-3 March, 2009: Daniel Hotel, Herzeliya, Co-located with the Fifth INCOSE\_IL Conference on Systems Engineering
- 4 March, 2009: Technion, Haifa
- 5 March, 2009: Tour to Jerusalem

## Call for Papers

Topics of interest within the scope of the Conference include, but are not limited to:

- Conceptual modeling languages and approaches
- Ontological foundations for and requirements from a systems engineering modeling language
- Operations Research models and their relation to Systems Engineering
- Standards for Systems Engineering models
- Assimilation of modeling practices within organizations: Approaches, achievements and lessons learned
- UML and SysML: Scope, expectations, and observations with respect to systems engineering
- Object-Process Methodology for systems modeling and lifecycle support
- Single vs. Multiple views: Aligning and integration of system models
- Education for holistic systems thinking and modeling
- Approaches to complexity management in system modeling languages
- The relationships between a systems modeling language and a systems development methodology
- Methodologies, processes and modeling languages: implications and influences
- Information and software systems engineering: a sub-discipline of SE or a separate field?
- Human cognition and human factors engineering in designing systems
- Industrial experience with complex systems modeling: Lessons learned
- Comparative studies of conceptual modeling approaches and languages
- Conceptual modeling for agile systems development
- Automatic generation of artifacts (e.g., code, documentation) from models
- Evaluation and verification of system models
- Models for Services Engineering
- Models of Systems Engineering in industrial context
- Model-Based Project and Product Lifecycle Management
- Model-based verification and testing design
- New types of systems engineering paradigms: biological, nano, etc.

## Paper categories

We invite submissions of high quality papers in the following categories:

### Technical solution papers

Technical solution papers present solutions for system-modeling related problems which are novel or significantly improve existing solutions. A technical solution paper must include a preliminary validation of the proposed solution.

**Evaluation criteria:** The proposed solution technique or its application to this kind of problem must be novel and sound. The author(s) must provide a preliminary validation of the proposed solution, for example, a proof-of-concept and/or sound arguments that the solution technique will work and that it will scale to real-world-sized problems. Results must be stated clearly enough so that the author(s) or others can further validate them in later research. A technical solution paper should also be clear about its contributions with respect to related work by others and to previous work by the author(s).

**Size:** A paper of this category must not exceed 10 pages.

### Scientific evaluation papers

Scientific evaluation papers evaluate existing problem situations or validate proposed solutions with scientific means, i.e. by empirical studies, experiments, case studies, simulations, formal analyses, mathematical proofs, etc. Scientific reflection on problems and practices in industry also falls into this category.

**Evaluation criteria:** The topic of the evaluation presented in the paper as well as its causal or logical properties must be clearly stated. The research method must be sound and appropriate. The research must be novel or, otherwise, the results must constitute a significant increase of knowledge. The results must be relevant and/or (statistically) significant. Furthermore, the research should be situated in the context of related work by others and previous work by the author(s).

**Size:** A paper of this category must not exceed 10 pages.

### Industrial practice and experience papers

Industrial practice and experience papers present problems or challenges encountered in practice, relate success and failure stories, or report on industrial practice. The focus is on 'what' and on lessons learned, not on an in-depth analysis of 'why'.

**Evaluation criteria:** The practice must be clearly described and its context must be given. Readers should be able to follow easily and to draw conclusions for their own practice.

**Size:** A paper of this category should be 4-6 pages long. It must not exceed 6 pages.

### Vision papers

Vision papers sketch new ways of looking at things, present creative new ideas, rethink current notions, etc. Please note that this is not a forum for research proposals or immature technical solution papers.

**Evaluation criteria:** A vision paper should be revealing and thought-provoking, thus providing new insight for the reader. The presented ideas must be original and look sound. Papers that only sketch an idea or propose research on some topic will be rejected.

**Size:** A paper of this category must not exceed 6 pages.

## Originality

Papers must describe original work that has not been submitted to or presented at other forums.

## Reviewing

All submissions will be reviewed by members of the MBSE'09 Program Committee according to the criteria stated above. Based on the reviews and on the discussion of papers in the program committee, the MBSE'09 Program Board will decide which papers to accept for the conference.

## Publication of accepted papers

Accepted papers will be published in an IEEE CS Press Conference Proceedings and will be available in IEEE Xplore, the IEEE Digital Library. Authors of selected papers will be invited to submit an extended version to Systems Engineering, the official INCOSE Journal.

## Important Dates

Sep. 8, 2008	Paper abstracts due
Oct. 6, 2008	Paper submissions (all categories)
Dec. 8, 2008	Notification of authors
Jan. 5, 2009	Camera-ready papers due
March 2-5, 2009	Conference

## Conference Organization

### General Chair

Prof. Dov Dori, Technion, Israel [dori@ie.technion.ac.il](mailto:dori@ie.technion.ac.il)

### Program Committee Chair

Prof. Yoram Reich, Tel Aviv University, Israel [yoram@eng.tau.ac.il](mailto:yoram@eng.tau.ac.il)

### Tutorial Co-chairs

Avigdor Zonnenshain, RAFAEL, Israel [avigdorz@rafael.co.il](mailto:avigdorz@rafael.co.il)

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