Call for Papers (CFP)
Special Issue: Journal of Simulation

Enhancing Simulation Composability and Interoperability using Conceptual/Semantic/Ontological Models

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Interoperability of simulation systems is concerned with the correctness of interactions among components in the simulation environment and builds on the composability of their underlying models. In order to fully utilize and share the underlying models, the interactions have to be made explicit, which requires well documented conceptual models. While the community agrees on the necessity of such documentation in principle, the details of different approaches are currently not well aligned. Precisely defined formal models that capture semantics are essential and afford more flexibility in syntax. In particular, ontologies offer a means for enhancing composability and interoperability among models and simulations developed independently. An ontology is a formal specification of a conceptualization, which fulfills the requirements for a conceptual model:

- It is a conceptual representation of systems and their underlying models.
- It is a specification, which enables the application of scientific evaluation methods.
- It is formal, which allows machines to process and to a degree understand the specification.

During recent years, the number of applications of semantic/ontological models in support of composability and interoperability has increased. In order to highlight the depth and breadth of this emerging approach to enhancing interoperability in modeling and simulation, the Journal of Simulation is seeking research papers on this topic, especially including those describing recent success stories on the practical use of such models. Submissions discussing simulations of systems in new or existing application domains are encouraged, as well as successes in the use of new semantic/ontological technologies (e.g., from the Semantic Web) in support of composability and interoperability. Example topical areas include:

- Interoperability of Simulation Systems
- Composability of Conceptual Models
- Ontologies for Conceptual Modeling
- Distributed Simulation Systems
- Ontologies for Simulation Systems
- Ontologies for Applications in Support of Simulation Application Development
- Using Ontological Means to Integrate Simulation Systems into Operational Systems
- Using Ontological Means to Integrate Operational Systems into Simulation Systems

Paper submissions must be original and contain high-quality contributions. Papers will be peer-reviewed.

Important Dates:
- Full paper submission: February 1, 2010
- Notification of acceptance: May 1, 2010
- Final version of manuscript: July 1, 2010
- Expected date of publication: October 1, 2010