

The 3rd International Workshop on Multi-Agent Systems and Simulation (MAS&S): Towards an Integration of Agent-Oriented Software Engineering and Simulation, MALLOW-MAS&S'09

(Introductory Essay of the Workshop)

Giancarlo Fortino^{*}, Massimo Cossentino[†], Juan Pavón[‡], and Marie-Pierre Gleizes[§]

^{*}Department of Electronics, Informatics and Systems (DEIS)
Università della Calabria

Via P. Bucci cubo 41C, 87036 Arcavacata di Rende (CS), Italy

Email: g.fortino@unical.it

[†]ICAR/CNR

Viale delle Scienze, Ed. 11. 90128 Palermo, Italy

Email: cossentino@pa.icar.cnr.it

[‡]Dep. Ingeniería del Software e Inteligencia Artificial

Universidad Complutense Madrid (Spain)

Ciudad Universitaria s/n, 28040 Madrid, Spain

Email: jpavon@fdi.ucm.es

[§]IRIT, Université Paul Sabatier (France)

118, route de narbonne, 31062 TOULOUSE Cedex 09, France

Email: Marie-Pierre.Gleizes@irit.fr

Abstract

Multi-agent systems (MASs) provide powerful models for representing real-world applications with an appropriate degree of complexity and dynamism. Several industrial experiences have already shown that the use of MAS offers advantages in many different areas such as manufacturing processes, e-Commerce, network management, etc. As MASs in such contexts need to be tested before their deployment and execution, methodologies that support validation through simulation (e.g. discrete-event simulation, agent-based simulation, etc.) of the MAS under development are highly required. In fact, simulation of a MAS cannot only demonstrate that a MAS correctly behaves according to its specifications but can also support the analysis of emergent properties of the MAS under test. In this context, MAS&S'09 aims at providing a forum for discussing recent advances about the integration of Agent-Based Simulation (ABS) and Agent Oriented Software Engineering (AOSE) methodologies and techniques for the analysis, design, validation and implementation of MASs.

I. INTRODUCTION

MAS&S'09 is at its third edition. The first edition has been jointly held with EUROSIS ISC 2006 (Industrial Simulation Conference), June 5-7, 2006, Palermo, Italy [1]. The second edition has been contextualized in EUROSIS ESM 2007 (European Simulation and Modelling Conference), October 22-24, 2007, St. Julian's, Malta [2]. The best papers of the first edition have also been selected and their extended and revised version published in International Journal of Agent Oriented Software Engineering, 2(1), Inderscience, 2008. MAS&S was conceived for stimulating discussion among researchers and practitioners working on ABS and AOSE, to enable the identification and the definition of methodologies and techniques for integrating them.

Simulation-based agent-oriented methodologies can offer new opportunities to develop more robust and well-tested multi-agent systems as the design of the multi-agent system could be validated, from functional and performance perspectives, before its implementation and subsequently deployment. MAS&S'09 attempts to provide a discussion forum for collecting and comparing diverse experiences on the use and integration of ABS and AOSE with the aim of fostering cross fertilization.

MAS&S'09 is being held as part of MALLOW'09, the second edition of Multi-Agent Logics, Languages, and Organisations (Federated Workshops), 7-11 Sept. Torino, Italy.

This volume contains the ten papers that have been selected by the Program Committee for presentation at the workshop. Each paper received at least two reviews in order to supply the authors with a rich feedback. The paper contributions cover hot topics in the fields of methodologies for ABS, integration of ABS and AOSE methodologies, ABS techniques for testing service oriented systems, and ABS for self-organizing systems.

The best papers will be invited to the open special issue on "Simulation-based Design and Evaluation of Multi-Agent Systems" to be published in Journal of Simulation Modelling Practice and Theory, Elsevier, to appear in 2010.

We would like to thank all authors for their contributions and the members of the Program Committee for the excellent work during the reviewing phase.

Giancarlo Fortino
Massimo Cossentino
Juan Pavón
Marie-Pierre Gleizes
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II. WORKSHOP COMMITTEES

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III. LIST OF PAPERS

- An Industry Use Case: testing SOA systems with MAS simulators
by *Pier-Giovanni Taranti, Carlos Jose Pereira de Lucena and Ricardo Choren*
- Electricity Market (Virtual) Agents
by *Paulo Trigo, Paulo Marques and Helder Coelho*
- Users' Collaboration as a Driver for Reputation System Effectiveness: a Simulation Study
by *Guido Boella, Marco Remondino and Gianluca Tornese*
- Exploiting the easyABMS methodology in the logistics domain
by *Alfredo Garro and Wilma Russo*
- Engineering Development of Agents using the Cooperative Behaviour of their Components
by *Noélie Bonjean, Carole Bernon and Pierre Glize*
- Simulation of Alternative Self-Organization Models for an Adaptive Environment
by *Stefania Bandini, Andrea Bonomi, Giuseppe Vizzari and Vito Acconci*
- Verification & Validation of Agent Based Simulations using the VOMAS (Virtual Overlay Multi-agent System) approach
by *Muaz Niazi, Amir Hussain and Mario Kolberg*
- Agent based modeling and simulation of multi-project scheduling
by *José Alberto Araújo, Juan Pavón, Adolfo López Paredes and Javier Pajares*
- Quick Prototyping and Simulation with the INGENIAS Agent Framework
by *Jorge Gomez-Sanz, Carlos Rodríguez-Fernández and Juan Pavón*
- Multiagent Simulation Model Design Strategies
by *Franziska Klügl*

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REFERENCES

- [1] Alessandro Genco, Antonio Gentile and Salvatore Sorce, editors. *Proceedings of the Industrial Simulation Conference (ISC 2006)*, June 5-7, 2006, University of Palermo, Palermo, Italy, 535 pages, ISBN 90-77381-26-0.
- [2] Jaroslav Sklenar, Cyrille Bertelle and Giancarlo Fortino. *Proceedings of the European Simulation and Modeling Conference (ESM 2007)*, October 22-24, 2007, University of Malta, St Julians, Malta, 615 pages, ISBN 978-90-77381-36-6.