Preface

This volume contains the proceedings of the 9th KES Conference on Agent and Multi-Agent Systems—Technologies and Applications (KES-AMSTA 2015) held in Sorrento, Italy, between June 17 and 19, 2015. The conference was organized by KES International, its focus group on agent and multi-agent systems and University of Zagreb, Faculty of Electrical Engineering and Computing. The KES-AMSTA conference is a subseries of the KES conference series.

Following the successes of previous KES Conferences on Agent and Multi-Agent Systems—Technologies and Applications, held in Chania, Greece, (KES-AMSTA 2014), Hue, Vietnam (KES-AMSTA 2013), Dubrovnik, Croatia (KES-AMSTA 2012), Manchester, UK (KES-AMSTA 2011), Gdynia, Poland (KES-AMSTA 2010), Uppsala, Sweden (KES-AMSTA 2009) Incheon, Korea (KES-AMSTA 2008), and Wroclaw, Poland (KES-AMSTA 2007), the conference featured the usual keynote talks, oral presentations, and invited sessions closely aligned to the established themes of the conference.

The aim of the conference was to provide an internationally respected forum for scientific research in the technologies and applications of agent and multi-agent systems. This field is concerned with the development and evaluation of sophisticated, AI-based problem-solving and control architectures for both single-agent and multi-agent systems. Current topics of research in the field include (amongst others) agent-oriented software engineering, BDI (beliefs, desires, and intentions) agents, agent cooperation, coordination, negotiation, organization and communication, distributed problem solving, specification of agent communication languages, agent privacy, safety and security, formalization of ontologies, and conversational agents. Special attention is paid to the feature topics: learning paradigms, agent-based modeling and simulation, business model innovation and disruptive technologies, anthropic-oriented computing, serious games and business intelligence, design and implementation of intelligent agents and multi-agent systems, digital economy, and advances in networked virtual enterprises.

The conference attracted a substantial number of researchers and practitioners from all over the world who submitted their papers for two main tracks covering the methodology and applications of agent and multi-agent systems, and six invited

sessions on specific topics within the field. Submissions came from 22 countries. Each paper was peer reviewed by at least two members of the International Programme Committee and International Reviewer Board. 38 papers were selected for oral presentation and publication in the volume of the KES-AMSTA 2015 proceedings.

The Program Committee defined the following main tracks: Mobile Agent Security and Multi-Agent Systems, and Agent-based Algorithms, Simulations and Organizations. In addition to the main tracks of the conference there were the following invited sessions: Agent-based Modeling and Simulation (ABMS), Learning Paradigms and Applications: Agent-based Approach (LP:ABA), Anthropic-Oriented Computing (AOC), Business Model Innovation and Disruptive Technologies, Serious Game and Business Intelligence through Agent-based Modeling, and Design and Implementation of Intelligent Agents and Multi-Agent Systems.

Accepted and presented papers highlight new trends and challenges in agent and multi-agent research. We hope that these results will be of value to the research community working in the fields of artificial intelligence, collective computational intelligence, robotics, dialogue systems and, in particular, agent and multi-agent systems, technologies, tools, and applications.

We would like to express our thanks to the keynote speaker, Prof. Marcin Paprzycki from Systems Research Institute of the Polish Academy of Sciences, Warsaw, Poland, for his interesting and informative talk of a world-class standard.

The Chairs' special thanks go to special session organizers, Dr. Roman Šperka, Silesian University in Opava, Czech Republic, Prof. Mirjana Ivanović, University of Novi Sad, Serbia, Prof. Costin Badica, University of Craiova, Romania, Prof. Zoran Budimac, University of Novi Sad, Serbia, Prof. Manuel Mazzara, Innopolis University, Russia, Max Talanov, Kazan Federal University and Innopolis University, Russia, Radhakrishnan Delhibabu, Kazan Federal University, Russia, Salvatore Distefano, Politecnico di Milano, Italy, Jordi Vallverdú, Universitat Autònoma de Barcelona, Spain, Dr. Yun-Heh (Jessica) Chen-Burger, The Heriot-Watt University, Edinburgh, UK, Assoc. Prof. Setsuya Kurahashi, University of Tsukuba, Japan, Prof. Takao Terano, Tokyo Institute of Technology, Japan, Prof. Hiroshi Takahashi, Keio University, Japan, Dr. Arnulfo Alanis Garza, Instituto Tecnológico de Tijuana, México, and Dr. Lenin G. Lemus-Zúñiga, Universitat Politècnica de València, España for their excellent work.

Thanks are due to the Program Co-chairs, all Program and Reviewer Committee members, and all the additional reviewers for their valuable efforts in the review process, which helped us to guarantee the highest quality of selected papers for the conference.

We cordially thank all authors for their valuable contributions and all of the other participants in this conference. The conference would not be possible without their support.

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