

## GUEST EDITORIAL PREFACE

# Special Issue on Modelling Decision Systems for Critical Applications

*Fátima Dargam, ILTC, Brazil & SimTech Simulation Technology, Graz, Austria*

*Shaofeng Liu, School of Management, University of Plymouth, Plymouth, UK*

*Isabelle Linden, Department of Business Administration, University of Namur (FUNDP),  
Namur, Belgium*

This IJDSST Special Issue on “Modelling Decision Systems for Critical Applications” includes papers selected from the 25<sup>th</sup> EURO Conference – DSS Stream, complemented by open call submissions. The 25<sup>th</sup> EURO Conference was held between 8<sup>th</sup> and 11<sup>th</sup> July 2012 in Vilnius, and the DSS Stream was organised by the Euro Working Group on Decision Support Systems (EWG-DSS).

As the guest-editors of this Special Issue, we are extremely proud to confirm that this publication’s initiative has reached its main objective of gathering high quality research papers, devoted to the development of new approaches to decision-making and decision support, taking into account collaborative networking environments and the Internet technology.

The focus of this IJDSST Special Issue is on the recent advancement in modelling decision systems in critical application contexts. The 4 papers included in this Special Issue address the key issues of the topic from different perspectives. The first paper, by Zlatko Zlatev, Galina Veres and Zoheir Sabeur, addresses the design

of agile data fusion and knowledge base system architecture for the next generation decision support systems in natural or industrial crisis management. In the second paper, Hesham Altaieb and Alexander Brodsky propose a market-based mechanism for organizational units of commercial and industrial power consumers and companies in a consortium to reduce their peak power demand. The third paper (by Raha Imanirad, Xin-She Yang and Julian Scott Yeomans) demonstrates how the co-evolutionary aspects of the biologically-inspired Firefly Algorithm can be exploited in order to concurrently create multiple solution alternatives that both satisfy required system performance criteria and yet are maximally different in their decision spaces. Finally, the fourth paper presents a web-mash-up application service framework for multivariate time series analytics that supports the services of model definitions, querying, parameter learning, model evaluations, data monitoring, decision recommendations, and web portals (authored by Chun-Kit Ngan and Alexander Brodsky).

We are very happy to have included in this IJDSST Special Issue a set of four high quality and interesting pieces of research, authored by well-known professionals and their teams from different research institutions across the continents. Editing this Special Issue was for us a great pleasure. We hope that you also enjoy as much reading it and that you can eventually refer to its contents in further research projects.

*Fátima Dargam*  
*Shaofeng Liu*  
*Isabelle Linden*  
*Guest Editors*  
*IJDSST*

The guest-editors of this Special Issue wish to acknowledge their gratitude for the prompt and highly constructive reviews received from the researchers shown here in the various phases of this Issue's reviewing process.

## **SPECIAL ISSUE REVIEWERS**

Dragana Bečejski-Vujaklija, University of Belgrade, Serbia  
Bernd Brandl, University of York, UK  
Joao Clímaco, University of Coimbra, Portugal  
Fátima Dargam, ILTC, Brazil & SimTech Simulation Technology, Austria  
Boris Delibašić, University of Belgrade, Serbia  
Jorge E. Hernández, University of Liverpool, UK  
Miloš Jovanović, University of Belgrade, Serbia  
Kathrin Kirchner, University of Jena, Germany  
Isabelle Linden, University of Namur, Belgium  
Shaofeng Liu, Plymouth University, UK  
Jason Papathanasiou, University of Macedonia, Greece  
Stefan Pickl, Universität der Bundeswehr München, Munich, Germany

*Fátima Dargam is a senior IT professional at SimTech Simulation Technology, where she works on research and development of software for computer-based simulation since 1995. She is a founding member (1989) and Coordinator of the EURO Working Group on Decision Support Systems (EWG-DSS) since 2007. She cooperates as senior researcher with the Research Institute ILTC, in Brazil since 1988. She holds a Ph.D. in Computer Sciences from Imperial College London (1996); a M.Sc. in Artificial Intelligence from Instituto Militar de Engenharia (IME), Rio de Janeiro (1989); an Engineering degree in Electronics from Universidade Santa Ursula (USU-RJ) (1983); and a B.A. in English from USU-RJ (1983). Fátima's research interests reside mainly in the development of intelligent, distributed and cooperative web-based decision support systems for various applications; bridging the areas of knowledge management and decision making. In those areas she has been engaged in research for the last 20 years. She is Associate Editor of the Journal IJDSST and belongs to the Editorial Board of the Journals: IJDSST, IJDS, and IJASCA. She regularly acts as reviewer as well as guest-editor for several international Journals related to the area of Decision Systems. Fátima Dargam also acts as project reviewer for the European Commission (Project TRIDEC) as expert in the area of DSS.*

*Shaofeng Liu is Professor of Operations Management and Decision Making at the University of Plymouth, UK. She obtained her PhD degree from Loughborough University, UK, specialising in Knowledge and Information Management for Global Manufacturing Co-ordination Decisions. Her main research interests and expertise are in knowledge-based techniques to support business decision making, particularly in the areas of knowledge management, integrated decision support, ERP systems and quantitative decision methods for lean operations, process improvement, resource management, quality management, and supply chain management. She is currently supervising 7 PhD students in above research areas. She has undertaken a number of influential research projects funded by UK research councils and the European Commission. She has published over 80 peer-reviewed research papers including 50 journal articles, 5 book chapters, 23 conference papers, and editorial for 6 journal Special Issues and 5 conference/workshop proceedings. She is currently an Associate Editor for the Journal of Decision Systems and on the Editorial Board for the International Journal of Decision Support Systems Technology. She conducts regular review for 3 research councils and 10 international journals.*

*Isabelle Linden is Professor of Information Management at the University of Namur in Belgium, Department of Business Administration. She obtained her Ph.D. in Computer Sciences from the University of Namur (2007) with a dissertation studying Temporal Coordination Languages. She also holds a M.Sc. in Philosophy (1999) and a M.Sc. in Mathematics (1995) from the University of Liège, Belgium. She is member of the CoordiNam Laboratory and the FoCuS Research Group. Combining theoretical computer science and business administration, Isabelle Linden's main research domain regards Information, Knowledge and Artificial Intelligence. She explores their integration within systems as Enterprise Information Systems, Decision Support Systems and Business Intelligence systems. She was involved in several research projects founded by the Walloon Region where her team was in charge of the conception of intelligent modules. Currently, 4 Ph.D. students are leading their research under her supervision. The work of Isabelle Linden can be found in several international edited books, journals, books chapters and conferences. She serves as reviewer and program committee member in several international journals, conferences and workshops.*