

Editorial

The aim of this thematic issue "Recent Advances in Systems, Decision Making, Collaborative Work and Learning" is to continue presenting the research achievement from the area of Systems Approach and Decision Support Systems for assessments of complex problems. The majority of the contributions were presented at the 23rd, Conference on System Research, Informatics and Cybernetics, Baden-Baden, Germany, August 1-5, 2011, in the stream Simulation Based Decision Support, chaired by Miroljub Kljajić. The special issue includes papers dealing with the development of simulation methodology, modeling tools and practice for decision assessment, service systems, control and optimization and ecological dynamics research. The last two decades much stressed on neoliberal education policies as a way to cope with globalization and its impact on nation states. The current trend leads to a paradigm shift that considers a more collectivist trends that includes social and environmental issues in its agenda to a more sustainable living that includes issues of environmental pedagogy and social justice. Current curricula policies emphasize issues of global warming, climate change, protection of species and the ecology as a way to foster a sustainable development, and foci is on social issues such as poverty, health, migration, and cultural diversity, and a need for developing life-long learning skills. To address those issues above firm policies need to be established as a result of continues search for a sustainable future. In that respect, the paper entitled "GEPUS: Simulation-based decision making system for air pollution accidents", addresses the GIS-based real-time system for emergency response and management of air pollution accidents in an urban area. The GEPUS project, funded by the NATO programme Science for Peace, presents one attempt in this direction to provide emergency responders with

an integrated system for control and management of hazardous gases accidents, especially in urban areas. It integrates automatic data importing with GIS-based hazardous gas dispersion, simulation and decision-making. In this paper, emphasis is placed on accidents caused by industrial and transport facilities, which can be considered as emission point sources. During simulations, the real-time weather conditions are considered such as wind speed and direction as well as atmospheric stability. Decision making is made based on the calculation of threat zones, unsafe area and safe traffic routes. For system validation, Montenegro was selected, specifically several hazardous industrial objects. The same approach can be extended to other hazard sources such as transportation (train derailments, etc), large storage tanks, pipes etc., with small modifications in the dispersion model.

The paper entitled "System dynamics model for policy scenarios of organic farming development" presents the system dynamics model of organic farming development in order to support decision making. It is further improvement of the previous model for the development of organic agriculture in Slovenia in order to identify key variables that determine conversion dynamics and to propose development policy in order to achieve strategic goals as set in the Action plan ANEK. The model seeks answers to strategic questions related to the level of organically utilized area, levels of production and crop selection in a long-term dynamic context. The model will be used for simulation of different policy scenarios for organic farming and their impact on economic and environmental parameters of organic production at an aggregate level. Using the model, several policy scenarios were performed. The main findings and suggestions for further study conclude the article. This is a powerful methodology and computer simulation modelling technique for framing, analyzing, and discussing complex issues and problems.

The paper entitled "The need for simulation in complex industrial systems". This paper discusses the concept of simulation and its application in the resolution of problems in com-

plex industrial systems. Most problems of serious scale, be it an inventory problem, a production and distribution problem, a management of resources or process improvement, all real world problems require a mix of generic, data algorithmic and Ad-hoc solutions making the best of available information. We describe two projects in which analytical solutions were applied or contemplated. The first case study uses linear programming in the optimal allocation of advertising resources by a major internet service provider. The second study, in a series of projects, analyses options for the expansion of the production and distribution network of mining products, as part of a sensitive strategic business review. Using the examples, we make the case for the need of simulation in complex industrial problems where analytical solutions may be attempted but where the size and complexity of the problem forces a Monte Carlo approach.

The paper entitled "Contribution to the collaborative work in virtual organization - a case study" we describes virtual organization as a community of people who interact together socially on a technical platform. These kinds of communities are built on a common interest, a common problem or a common task of its members that is pursued on the basis of implicit and explicit codes of behavior. The six dimensions that are normally used to analyze virtual organizations are the use of technologies, sense of belonging, success factors, level of trust from members, virtual community management, and contents of the virtual community. The virtual organizations defined in the literature are not defined separately for non-profit research virtual organization. Here we present analysis of non-profit research virtual organization, European Working Group on Operational Research for Development (EGW ORD). This paper provides a summary of achievements and challenges faced in building a virtual organization. This kind of analysis plays a vital role in establishing new non-profit virtual organizations to serve the research community in their field of interest. It is also helpful to the group in broadening its presence and involving more researchers, practition-

ers and students in the field of operational research.

The purpose of the study presented in the paper entitled "Comparative analysis of collaborative and simulation based learning in the management environment", Purpose of the study is to compare two different approaches to the collaborative problem solving one with highly control laboratory experiment: Optimisation of business politics using business simulator at different experimental condition which reflect different feedback information structure and Collaborative Learning in the Social Media Environment characterised by non-structured, rule-free and even chaotic feedback information. Comparative analyses of participant's opinion who participate in experiments have been considered in order to find common characteristics relevant for group problem solving. General explanatory causal loop model of learning was found for both experiments with regard to group problem solving and learning. All participants

in both cases agree that clear presentation of the problem motivates participants to find the solution. So, in the future, the use of realistic yet sufficiently simple business models is essential, if one wishes to close the gap between business processes understanding and the role of modeling and simulation in problem solving.

In the last paper of the issue, "Application of Fuzzy AHP Approach to Selection of Organizational Structure with Consideration to Contextual Dimensions", the researchers employ a fuzzy multi attribute decision making model (FMADM) to select the most suitable organizational structure based on expert's judgments and by deploying contextual dimensions of the organization. Since the organizational changes especially in the structural levels are along with resistances among involved staffs, the implementation of this model is a supportive tool in addition to help the managers to make a qualified decision and change.

Guest editors hope that our selected topics display the state-of-the-art of the research efforts over the world coping with complex problem solving in a holistic way which is characteristic for modern Systems Research and Cybernetics! Moreover, we are very thankful to our journal Organizacija (Organization - Journal of Management, Information Systems and Human Resources) for having given us the opportunity and honour of hosting this special issue as a scientific project and service to the people on earth. We express our gratitude to the Editors of Organizacija, and hope that our special issue will well-demonstrate Organizacija being a premium journal and of a great scientific and social value!

The Guest Editors:
Mirosljub Kljajić and
Gerhard-Wilhelm Weber