
Editorial

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Biographical notes: Agostino G. Bruzzone is a Full Professor at the DIME, University of Genoa, the Director of M&S Net (international network involving 34 centres), Director of the MISS McLeod Institute of Simulation Science – Genoa Centre (28 centres distributed worldwide), Founder and President of the Liophant Simulation, a member of the Simulation Team, member of the Board of Movimento Italiano di Simulazione (MIMOS), and member of the NATO MSG. He works on innovative modelling and simulation, AI techniques, human behaviour modelling and GAs. He serves as the general coordinator of scientific initiatives (i.e., I3M General Chair). He teaches M&S for the DIMS PhD program (Doctorship in Integrated Mathematical M&S). He is the Director of the Master program in Industrial Plants for the University of Genoa. He was also Project Leader M&S at NATO STO Centre for Maritime Research and Experimentation (CMRE).

It goes without saying that the inherent flexibility of modelling and simulation underpins its continuous growth in terms of theoretical advances and new applications. As a matter of fact, it is well evident that latest technologies and novel approaches turn into new opportunities to enlarge M&S capabilities and pervasiveness. Keeping always firm its foundations and its principles, M&S is continuously evolving showing inexhaustible potential. Ranging from multiscale and object-oriented modelling to discrete-event and agent-based simulation, M&S offers a variety of possibilities to deal with the complexity of any kind of real or notional system. As M&S applications become increasingly challenging, new requirements are laid down both for the underlying IT infrastructure and for its own theoretical body of knowledge. M&S capabilities, indeed, entail suitable technical infrastructures able to support simulation execution, boost its expressive power and ensure usability not only by experts. Nevertheless, a unifying modelling framework as well as formal verification and validation methods are also basic prerequisites for trustworthiness, quality and acceptance.

Therefore, the main aim of this special issue is to put together contributions (both theoretical and applicative) from multiple domains and application areas to show how the integration of new technologies, methodologies and tools enlarges simulation capabilities. Indeed, a quick overview of the articles published in this special issue reveals how researchers and scientists are currently working exactly in this direction. Among others, the following are examples of integration included in this special issue: DEVS and model checking for integrating simulation and analysis, distributed simulation integrated on mobile devices, integrated and collaborative simulation framework for project management, integration of interoperable simulation and hardware in the loop to support training in complex environments.

As guest editor of this special issue, I truly hope that the readers will find the ideas expressed in these articles challenging enough to move ahead the current state of the art; I also take this opportunity to thank the Editor-in-Chief of the *International Journal of Simulation and Process Modelling* (Professor Feng Qiao) and all his staff for their continuous help and support along the last year and for the preparation and publication of this special issue.