



ICNSC 2017

14th IEEE International Conference on Networking, Sensing and Control

May 16-18, 2017, Calabria, Southern Italy

*****Conference Program On-Line!!!*****

ICNSC 2017

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Workshops

- [Interactive and Wearable Computing and Devices \(IWCD 2017\)](#)

Special Sessions

- [SS1: Advanced Learning Techniques for Autonomous Robots in the Internet of Things \(ALTARIoT\)](#)
- [SS2: Smart Cities \(SmC\)](#)
- [SS3: Automation and Optimization for Energy Systems \(AOES\)](#)
- [SS4: Computations in Large-scale Systems \(CLASSY\)](#)
- [SS5: INTER-IoT: Towards IoT Systems INTERoperability \(INTER-IoT\)](#)
- [SS6: Technologies and solutions for Smart Homes and Smart Grids \(SHSG\)](#)
- [SS7: Multi-Agent Systems for the Internet of Things and Cyber-Physical Systems \(MAS4IoT&CPS\)](#)
- [SS8: Data Fusion in the Internet of Things \(DF-IoT\)](#)
- [SS9: Smart Lighting Environments: Sensing and Control \(SLESC\)](#)
- [SS10: Smart Logistics and Transport \(SLT\)](#)
- [SS11: Big Data Analytics \(BDA\)](#)
- [SS12: Model-driven approaches for trustworthy cloud computing \(MATCC\)](#)
- [SS13: Intelligent Systems for Control and Healthcare Applications \(ISCHA\)](#)
- [SS14: Development of Energy Efficient Short-Range Wireless Sensor Networks \(EEHRWSN\)](#)
- [SS15: Marine Sensing \(MarSen\)](#)
- [SS16: Modeling and Simulation of Cyber-Physical Systems \(M&S\)](#)
- [SS17: Emerging Social Internet of Things \(SIoT\)](#)
- [SS18: Trust Management in the Internet of Things \(TrustIoT\)](#)

NEWS

- **2017-01-16 Workshops/Special Sessions Paper deadline has been extended**
- **2016-11-02 The Paper Submission deadline has been extended**
- **2016-05-27 The Conference Website is online.**

PROCEEDINGS



SPECIAL SESSION

Special Session on “Modeling and Simulation of Cyber-Physical Systems” (M&S)

Modeling and Simulation (M&S) represents one of the most important and effective methods for studying and designing complex systems in a variety of industrial and technical domains ranging from energy to space exploration. M&S methods, tools, and techniques allow analyzing and evaluating design alternatives effectively and by limiting the risk, costs and failures associated with extensive field experimentation; they become crucial when complete tests on the actual systems are too difficult, dangerous or outright impossible in terms of cost, time and other primary resources. Over the years, large-scale systems have increased in complexity and sophistication since, in general, they are composed of many components, and often need the involvement of teams in different engineering domains, including mechanical, electrical, human factors and software. As systems get increasingly complex, their design and development become more difficult and therefore new M&S techniques, methods and tools are emerging. Moreover, the models of a system used during its design can be profitably exploited for supporting system operation. Indeed, by initializing and linking the model parameters to the actual ones of the system in operation it is possible to simulate the system evolution and thus to obtain useful information for several purposes ranging from operations optimisation to early diagnosis to prognosis.

The interest in this research field is both widespread and ever increasing as witnessed by European projects such as MODRIO (see <https://itea3.org/project/modrio.html>), an ITEA 2 Research Project which involved 38 industrial and academic partners (EDF, Dassault Aviation, Dassault Systèmes, EADS, Siemens, Scania, ABB, SKF, University of Calabria, Linköping University, Katholieke Universiteit Leuven et Al). However, a wider adoption of Modeling and Simulation techniques, models, methods, languages and tools for supporting the Analysis, Design and Operation of Cyber-Physical Systems requires further investigations on several aspects such as conceptual properties representation, binding and automated model composition, tracing and verification, development of supporting tools, and so on.

In the above sketched reference framework, the aim of this special session is to provide a comprehensive guide on new ideas and results in Modeling and Simulation for Cyber-Physical Systems Analysis, Design and Operation. Specifically, the session aims at: (i) presenting not only the current state-of-the-art about modelling and simulation environments based on open standards, but also some extensions and recent innovations, so as to increase systems safety, dependability and performance throughout their lifecycle; (ii) identifying potential research directions and technologies that will drive innovations in Systems Engineering domains for improving systems diagnosis, operation, and performance; (iii) showing and sharing, among the communities, ideas and achievements in holistic modelling and simulation as well as to provide frameworks and simulation environments/platforms for supporting cyber-physical system design, diagnosis and operation assistance. Papers of the special session are expected to serve as a valuable reference for larger audience in a wide range of application domains (such as power plant, automotive and aerospace). Moreover, contributions specifically focused/centered on M&S models, methods and related tools to support property/requirement modelling, state estimation, multi-mode modelling, and nonlinear model predictive control, are very welcome. Potential topics include, but are not limited to:

- Modeling and Simulation languages, methods and techniques
- Agent-based Modeling and Simulation
- Acausal Programming
- Equation-based and object-oriented programming
- Properties and Requirements Modelling
- Performance Analyses

- Case Studies and Prototypes

Submission

Submitted manuscripts should be within six (6) pages in IEEE two-column format, including figures, tables, and references. Please use the templates at [Manuscript Templates for IEEE Conference Proceedings](#) from the conference website to prepare your paper. All submissions MUST be in PDF format.

Complete manuscripts must be electronically submitted through easychair at:

<https://easychair.org/conferences/?conf=icnsc2017>

Please, during the submission process specify this Special Session as topic **SS16 - M&S** in easychair.

Accepted Papers

All submitted papers will be reviewed by members of the International Program Committee and the corresponding author will be notified of acceptance or rejection. Accepted papers must be presented at the conference (an author could present maximum two (2) papers) and will be published in the conference Proceedings.

Important Dates

January 31, 2017	Paper submission due (<u>Extended and firm deadline</u>)
February 28, 2017	Notification of acceptance
March 15, 2017	Camera-ready copy due

Special Session Organizers

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