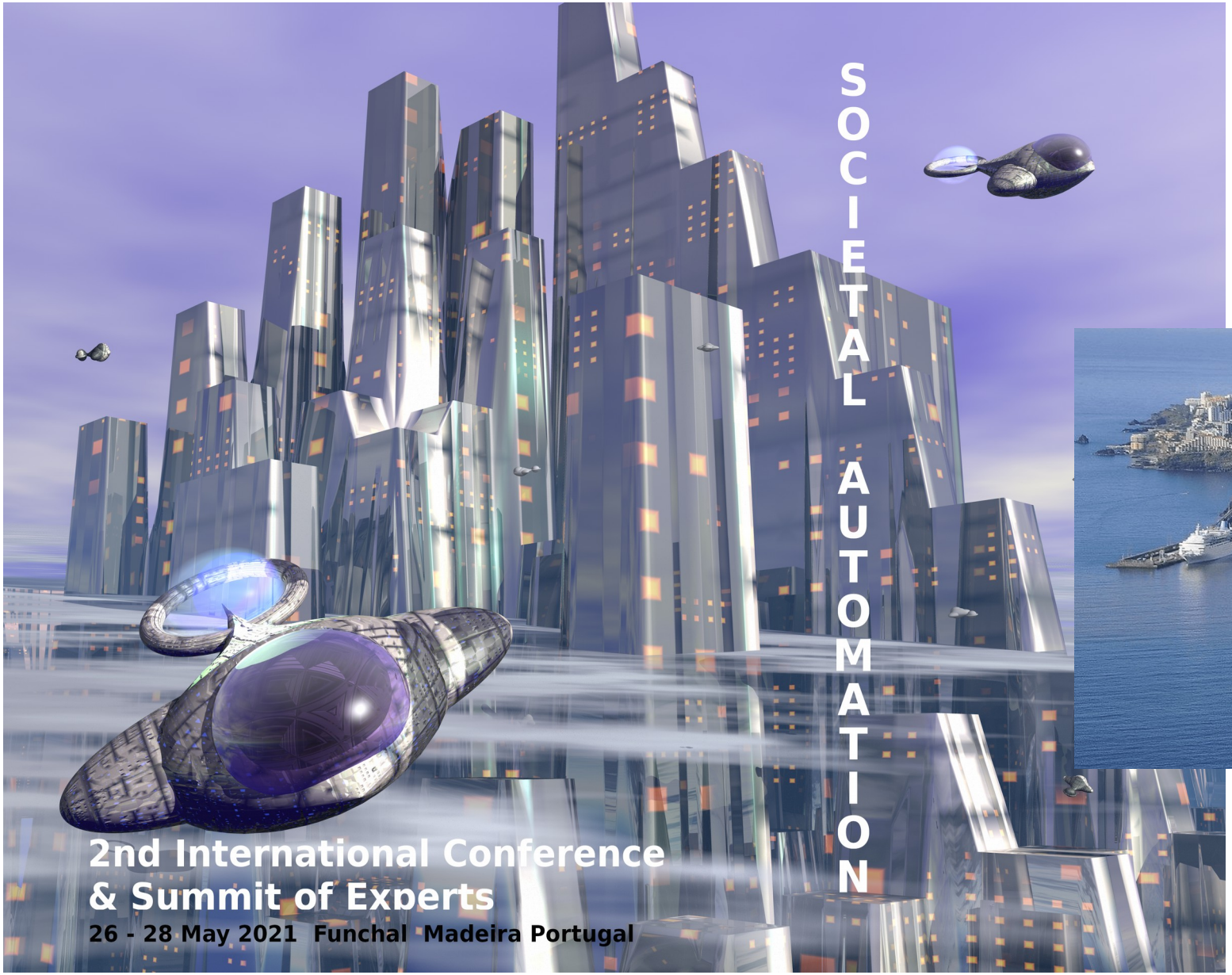
Functional & Architectural Frameworks & Economics of Innovation and New Technology



Electronic Systems in Societal Automation
Communication in Societal Automation
Computing in Societal Automation
AI, Machine & Deep Learning in Societal Automation
Sensors in Societal Automation
Road to Technological Singularity
Architectural Frameworks for Societal Automation – IoT and CPS & Applications
Cyber-Security in Societal Automation
Development of Large-Scale Ultra-Complex Engineering Systems
Smart Cities and Cities of the Future
Socio-Technical Aspects of Societal Automation
Economics of Innovation and New and Future Technology

Keynotes & Invited Plenary Talks
Wolfgang Kastner, Technical University of Vienna, Austria
Marta Kwiatkowska, University of Oxford, UK
Roman Obermaisser, University of Siegen, Germany
Alberto L. Sangiovanni-Vincentelli, University of California, Berkeley, USA
Jacek M. Zurada, University of Louisville, USA

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Track Chairs
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John Baras, University of Maryland at College Park, USA
Xavier Bellekens, Strathclyde University, UK
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Diogo Gomes, University of Aveiro & Telecommunications Institute, Portugal
Waheed Iqbal, University of the Punjab, Pakistan
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Krystian Jobczyk, AGH UST in Krakow, Poland
Wolfgang Kastner, TU Vienna, Austria
Raimund Kirner, University of Hertfordshire, UK
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Cyril Luxey, University of Nice Sophia Antipolis, France
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SOCIETAL automation

The onset of the 4th Industrial Revolution and emerging Societal Automation initiatives deeply rooted in advances in Electronics, Communication, and Computing has been heralded by numerous visionary initiatives sponsored and advanced by industry, private consortia, and governments alike, all over the industrialized world – just to mention initiatives revolving around urban automation such as Smart Cities. The household concepts of the Internet of Things and Cyber-Physical Systems provide conceptual and architectural frameworks for those initiatives.

The functional and technical scope of those initiatives is broad. Various application domains intersect at the crossroads of the initiatives. Vision is necessary to carve the image of the initiatives. But insufficient for their realization. At the root of the success in implementing and deploying visions is technology - a tangible "realization" of solutions, which arise from innovative thinking.

Technology and arising solutions are fast penetrating practically all areas and facets of our life; from pocket and wearable automation, to robotic companions, to home and building automation, to energy and transportation systems, to city/urban automation. In not so distant future space colonies. Societal Automation, as this rapidly expanding human-centered technology penetration of our life can be called, has many aims. But primarily striving to improve quality of our life by providing comfortable and safe living habitat and working conditions without degrading the surrounding natural environment, in addition to fulfilling other societal requirements and needs.

Themes of Internet of Things and Cyber-Physical Systems and applications are well represented in the body of articles and papers published in journals and presented at conferences. However, the presented ideas and actual developments are far from disruptive. The heralded well over ten years ago a rapid evolution of man-made engineering systems drawing from the IoT and CPS paradigms has been slow on uptake. This situation is acutely reflected in the unwillingness of the Venture Capital firms to fund small incremental developments which offer little prospects for major return on investment. It becomes increasingly clear that the lack of architectural and technological frameworks to base future developments on leads to this stalemate. It is also evident the vision of what is to be achieved is not in place and clear.

The Societal Automation conference series looks in a holistic way at the Societal Automation domain to identify what solutions, technologies, architectural frameworks, and design tools are going to be needed in the design, development and deployment of future human-centered life-quality improving solutions and systems.

At the core of the Conference is the Summit of Experts which has the format of keynotes, invited plenary lectures, panel and plenary discussions, and public lectures. The upcoming Summit is going to have a focus on Large-Scale Ultra-Complex (Engineering) Systems with emphasis on the design aspects. Until now that area was of interest to military, space agencies, software industry, etc. Understandably, due to the scale and complexity. However, the interest starts emerging in the civilian programs. Particularly in the area of Smart Cities and Cities of the Future. There are numerous reports of plans to design from scratch Smart Cities to be implemented in different parts of the world. A major challenge as there are no methodologies, no tools for that kind of systems available to civilian programs.

Technology development tends to be expensive. Funding is typically provided by public and private sectors. The motivations may differ. Public good, or profit. Irrespective, investors need to know the cost of development. Private and public sectors, in addition to the profit projections, need to consider a range of financial and social issues before committing. The Summit of Experts will delve also into the economics of innovation and new technology. Viewed particularly in the context of Large-Scale Ultra-Complex (Engineering) Systems.

The second edition of the Conference on Societal Automation will offer an unique combination of contributed papers with the Summit of Expert sessions. A mix of technical and economic topics from the Societal Automation related diverse application domains and Large-Scale Ultra-Complex (Engineering) Systems area's emerging issues.

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