

## IEEE SSCI 2017

### Special Session Proposal

#### **Title of the special session**

Agent-based modeling for smart grids and M2M applications

#### **To which symposium is this special session proposed to**

2017 IEEE Symposium on Computational Intelligence Applications in Smart Grid (IEEE CIASG'17)

#### **Names of proposers**

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TBA

#### **Description of the special session**

Smart grids aim at successfully implementing a new model for power and energy systems, accommodating all the involved energy resources and players. Agent-based modeling plays a very relevant role in this process, as a basis for simulation and decision-making.

Agent-based approaches facilitate the interaction with the physical resources, namely sensing, metering, communication, and control devices and systems. In this way, industrial agents play a crucial role in machine-to-machine (M2M) applications in several domains including smart grids.

The contributors for this special session will bring their experience in the development and use of agent-based solutions in the above-referred areas. The analysis of the successes and limitations of the solutions implemented so far will enable a fruitful discussion pointing to key topics to be addressed in the field.

#### **Potential topics include, but are not limited to:**

- Agent automated negotiation
- Agent-based modeling for smart grids and energy markets
- Agent-based simulation
- Communication and control
- Distributed generation
- Electric vehicles
- Industrial agents
- Information technology applications
- Machine learning in agents
- Machine-to-machine (M2M) applications
- Multi-agent systems
- Sensing and metering

#### **List of potential contributors**

Once we know that the Special Session is approved, we'll widely disseminate it so that people from the academy and from the industry working in the session topics submit additional papers.

Some committed contributors:

- Kumar Venayagamoorthy, Clemson University, USA
- Zita Vale, Polytechnic of Porto, Portugal
- Tiago Pinto, University of Salamanca, Spain
- Luís Gomes, Polytechnic of Porto, Portugal