3rd IFAC Conference on Embedded Systems, Computational Intelligence and Telematics in Control (CESCIT 2018)

4-6 June 2018

http:/www.cescit2018.org

Open Invited Track on:

Smart Home and Buildings Management and Control

Organizers:

Prof. Dr. Antonio Ruano
Faculty of Science & Technology, University of Algarve, Campus de Gambelas, 8005-139 Faro, Portugal
E-Mail: aruano@ualg.pt
Prof. Dr. Giovanni Pau
Faculty of Engineering and Architecture, Kore University of Enna, Cittadella Universitaria, Enna 94100, Italy
E-Mail: giovanni.pau@unikore.it

Abstract:

Energy efficiency and usage comfort are central issues in the development of smart homes and buildings. The objective is typically the minimisation of the energy required to maintain a desired comfort level for the occupants, the perception of comfort being related to several environmental factors such as lighting, temperature and air quality.

For specific classes of home occupants, namely elderly people, safety is an issue as important as comfort.

For buildings, depending on their type and use (residential, administrative and industrial buildings, schools, hospitals, department stores, cultural and entertainment facilities, etc.), elevator control, monitoring and control of the consumption of water and/or gas (not only electricity), electric vehicle charging, etc., should also be taken into account when considering an intelligent integrated building control.

This open invited session will discuss the use of new Information and Communication Technologies (ICT), modeling, control and automation techniques for Smart Home and Buildings Management.

IFAC technical committee(s) for evaluation:

TC 3.1: Computer control systems

TC 3.2: Computational intelligence in control

TC 3.3: Telematics: control via communication networks

Detailed description:

This open invited track is devoted to all control and automation topics related with home and building management, including (but not limited to) the following subjects:

HVAC, air quality and lighting control (predictive, optimal, stochastic, distributed)

Centralized and Distributed Building Management Systems

Remote data acquisition, control and servicing

Smart meters, smart sensors, smart home appliances, home/buildings area networks

Non-intrusive load monitoring and occupant activity monitoring

Incorporation of renewable energy sources in buildings

Forecasting techniques energy consumption, microgeneration and self-consumption management solutions; small-scale energy storage usage and deployment;

Demand response, demand side management, peak shaving and load shifting techniques

Smart grid applications

Advanced elevator control

Electric vehicle charging methods for smart homes/buildings

From smart buildings to smart cities