

Invited session proposal for IEEE CASE 2008: Ventilation Control in Large-Scale Systems

Organizers and contact information

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Relevant background/expertise of the organizers

Alf Isaksson is a Senior Principal Scientist in Advanced Process Control at ABB Corporate Research. He has a long experience of research in process control from both academia and industry, within a wide range of application areas such as pulp & paper, rolling mills and pharmaceuticals. More recently his research interests have been extended in the direction of networked control.

Emmanuel Witrant is an Assistant Professor in Automatic Control at University Joseph Fourier and GIPSA-lab. His areas of expertise are in aerospace engineering, networked control systems and modelling and control of large scale instruments (such as Tokamaks).

Relevance of the proposed special session to the IEEE CASE 2008

This special session targets novel contributions on the ventilation control of large-scale systems. This topic is motivated by recent technological advances in large scale systems automation and the high environmental impact of the associated applications, such as mining ventilation or under floor ventilation in intelligent buildings. Indeed, the possible energy savings associated with global control strategies are well recognized and far from negligible. We are targeting indoor ventilation control applications, with a majority of contributions focused on mining ventilation control and resulting from previous collaborations within HYCON Network of Excellence. More specifically, we will consider contributions on wireless automation, automatic verification of safety issues, network architecture and positioning, environmental control in enclosed environment and air flow modelling issues. Such topics, as well as the global framework, are particularly well suited with the scope of IEEE CASE 2008.

The target audience first comprises automation engineers interested in large scale systems control, but is largely extended to specialists in wireless sensors networks, safety, network architecture, predictive control or flow models.

Keywords: Architectures for distributed control; HVAC (Heating, Ventilating and Air-Conditioning) control system; Networked control systems

Expected contributors

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Tennina	S.	University of L'Aquila	Italy
Witrant	E.J.C.	University Joseph Fourier	France

Potential reviewers

The organizers suggest to choose reviewers in the conference fields of

- Construction and Building Automation;
- Distributed control systems ;
- System Modeling and Simulation;
- Wireless automation.