Notice of dissertation defense 28.03.2018

Doctoral defense: collaborative systems for distributed energy management

Title
Collaborative energy management systems: design and evaluation for intelligent buildings, electric vehicles and street lighting

Content
The thesis deals with collaborative energy management systems (CEMS). The central problem statement was to quantify the dilemma that the three expectations of an energy management system span: energy-efficiency, flexibility and robustness. To what extent are the three requirements conflict for the concrete collaborative system? What are the architectures, design principles or protocols that can be used to mitigate problems resulting from these conflicts? The hypothesis was that a partially or completely decentralized automation solution may be helpful to answer these questions. The objective was to propose and validate partially or fully decentralized automation solutions for several use cases of collaborative energy systems. This thesis investigates the matter in the context of these case studies as a step towards a sovereign research field for CEMS problems that is currently absent.

Field of research
Automation, Systems and Control Engineering

Doctoral candidate
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Date and time
27.04.2018 at 12:00

Place
Aalto University School of Electrical Engineering, TUAS building, hall TU2, Maarintie 8, Espoo

Opponents
Professor Thilo Sauter, Danube University Krems, Austria
Dr. Paul Annus, Tallinn University of Technology, Estonia

Supervisor
Professor Valeriy Vyatkin, Aalto University, School of Electrical Engineering, Department of Electrical Engineering and Automation

Dissertation website
https://aaltodoc.aalto.fi/handle/123456789/53

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The dissertation is publicly available on the notice board of the Aalto University Learning Hub Atrium, Maarintie 8.