

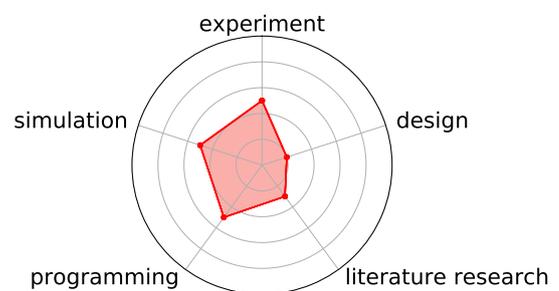
Bachelor or Master thesis:

Integration of a cloud-based energy management system into a modular building

In the course of the German Energiewende and the associated spread of ever more complex, decentralised energy systems, the requirements for intelligent building automation systems are constantly increasing. The development of energy systems towards Smart Grids is strongly dependent on communication between local and external information sources. Cloud-based communication and analysis environments are suitable for the optimal energetic operation of building energy systems and for ensuring demand side management. The cloud makes the management of IT resources more flexible, can be scaled as required and guarantees data availability. In addition, a cloud based energy manager promotes the integration of external data sources such as weather services, dynamic price models or primary energy factors.

Your mission:

You will develop a modular solution for the building automation system of a technology quarter in Berlin. It will be investigated how the communication between a cloud-based energy manager and the local automation system can be designed to ensure a continuous, safe and efficient building operation. Based on the concrete example of FUBIC: Transformation of a fossil-fuelled military hospital into an emission-free, electricity-only technology quarter, several operating modes will be developed and tested. Innovative methods from the fields of Internet of Things (IoT), energy management and simulation will be used for this purpose.



Our profil:

The E.ON Energy Research Center at RWTH Aachen University deals with sustainable energy supply concepts that take account of technical feasibility as well as social and economic aspects. The reduction of primary energy consumption in buildings and an increase of indoor comfort are among the research tasks of the institute.

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