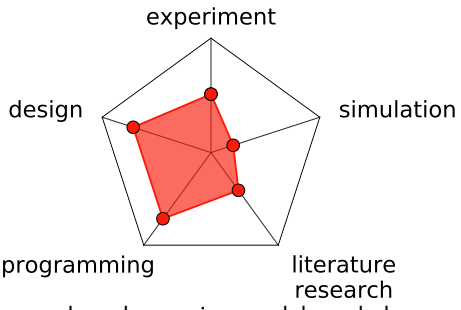
E.ON Energy Research Center | RWTH AACHEN UNIVERSITY

Master Thesis:

Internet of Things and Cloud-Control VS State-of-the-Art Building Automation

The building automation system (BAS) is the central connecting component for achieving the desired efficiency of devices within the building sector. This aside, current most-discussed topics related to a progressive system automation are the Internet of Things (IoT) and Cloud-Control (CC). However, the frequently proposed advantages of less installation and IT-administration effort are rarely verified in practice. For instance, the advantageous installation of radio based sensors and actuators might be compensated by a higher configuration effort while in case of network connection losses necessary fallback solutions might still require local computing power. Therefore, in this Thesis, a comprehensive comparison between a state of the art (SOTA) building automation system and a Cloud-controlled system using IoT components shall be drawn revealing the real added value or potential of these technologies.

Scope of Work:



In this Thesis, at first, you develop a test facility concept allowing for the comparison of the SOTA BAS and a IoT-CC-BAS. Therefore, there should be a practical way of switching between both systems and you develop the required interfaces and build the framework for the switching mechanism. Subsequently, you implement the IoT-System and the Cloud integration. In the subsequent comparison, you investigate the advantages of the progressive system and evaluate them by suitable indices. In general, this Thesis will give you a broad overview and knowledge on technical building equipment, building automation systems, IoT and Cloud-Control.

Our Profile:

E.ON Energy Research Center at Aachen University is concerned with concepts of sustainable energy supply that account for technical feasibility as well as social and economic aspects. Reduction of primary energy consumption in conjunction with increased indoor air quality is a major focus of research.

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