Technische Universität München
Chair for Network Architectures and Services
Prof. Dr.-Ing. Georg Carle

BA

A Feedback System for Smart Buildings

Introduction

Smart Buildings are equipped with a series of sensors for, e.g., temperature, luminousity and CO_2 content of the air. Using the harvested sensor data the building is able to adapt itself dynamically resulting in comfort and energy efficiency. However, one of the best and most flexible sensors a smart building can have is still the human being. Various sorts of problems ranging from malfunctional building elements to dirty areas can be sensed by a human.

Problem

On the one hand side, for humans it is often problematic and too cumbersome to give feedback to the right entity. Hence, most users in larger buildings ignore problems they see and hope that „somebody" will take care of it sooner or later. On the other hand side there is no way how a buidling might „use" a human as a sensor.
One valid option to overcome these issues would be an app for smart phones. Humans might report problems they see via the app on their smart phone to a building server. Depending on the problem type, the report is forwarded to the right entity who takes care of the problem. The building might also use humans as a „sensor". Such a human sensor might be used to confirm the problem reported by the first human.

Task Description

In this thesis a smart building feedback system will be investigated. After analysing functional and non-functional requirements of this system a prototype needs to be designed and implemented based on the measrdroid framework and other software components, which were developed at our chair.

Requirements

You should have basic skills in Android programming, Java, Python and the Linux operating system. Furthermore we expect you to cooperate with other students and members of the chair working on problems related to this thesis.

Miscellaneous

This thesis can be performed in German or English. As a Bachelor student you have the opportunity to stay at our chair after the thesis is finished as student researcher (HiWi) to continue your work.

measrdroid

Further Information: Dr. Holger Kinkelin, Marcel von Maltitz und Johann Schlamp
(lastname@net.in.tum.de)
Chair for Network Architectures and Services