Smart environment conception and integration for Hotels

Degree programme: BSc in Computer Science | Specialisation: Distributed Systems and IoT
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Creating a concept and implementation based on analytics of current available technologies and implementations in the field of smart buildings and IOT for application in Hotels.

Context and goals

In today's world, digitalization and automatization are having a huge impact on our lives. After the revolution of the smartphone, the digitization and automation of public and private spaces seem to be the next logical step in this development. Cheaper and simpler becoming "smart hardware", increasingly more interconnected devices and through the recognition of the potential benefits in almost every aspect of society accelerate this trend further. Intelligent systems in our buildings could simplify many everyday processes, make them more efficient or even render them unnecessary.

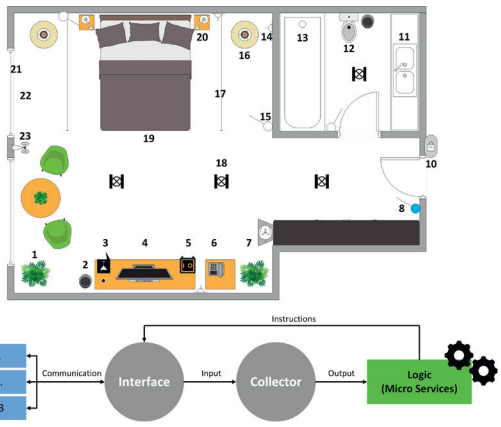
A very suitable place to start conceiving and implementing an intelligent, interconnected system is a Hotel. As Hotels would especially profit from each of the benefiting areas mentioned and as they already have an more widespread usage of already available IOT Systems, they represent the perfect environment to start implementing a system that would enhance the experience of customers as well as bringing benefits for the Hotel itself by automating tasks, saving energy and human task force, finally resulting even in financial benefits. Because of this reasoning and interest expressed by industry partners, the Hotel environment has been chosen to be the development ground for this thesis with the vision to create a concept and implementation suitable for many more areas.

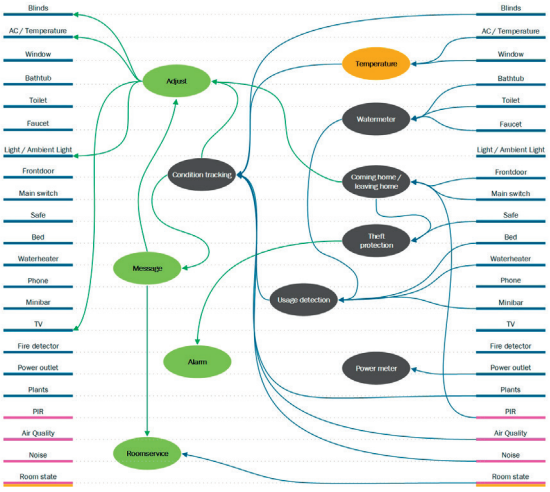
Contents of the Thesis

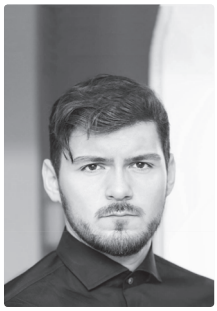
The thesis is structured in 3 parts, starting with an analysis of the abilities and potentials of digitalizing hotel environments, with a focus on hotel rooms as well as an analysis of current available products, technologies and implementations of smart systems and devices. The results of this first Phase lead to the creation of a Catalogue containing functions and systems, based on which the conception and implementation phase have relied upon.

Conclusion

The thesis shows that many areas of a hotel room can profit from being automatized and thus provide benefits to guests as well as the hotel management. The Analysis of available technologies has led to the conception of a system based on Interfaces, Collectors and Micro-Services to create a scalable, comprehensive and expandable system.







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