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Project

Smart homes

How the Internet of Things can really make houses smart

What

We can really make houses smart by developing the Internet of Things (IoT). Whereas simple energy measurement can already lead to energy savings, a further step is now being taken. Developing connected systems, for both energy and HVAC, as well as security (access control and door and window detectors), comfort (smart refrigerator) and health (air quality) can

unrestrictedly optimise both energy savings and comfort. Although home automation has existed for a long time, the Internet of Things has many advantages, which means that a rapid breakthrough is possible. The technology is commercially mature, inexpensive, broadly deployable, modular and easy to integrate.

This is also the input for the project, namely to show what technology is needed to make a house "smart" and to show that the technology is easy to integrate and can be done so in a modular manner.

Pilots (applications)

Two smart homes were equipped in the project.

CITC refurbished an apartment in Lille, which is used to train non-medical caregivers. It is a normal apartment, where one room has been arranged as a lesson room. The apartment is used during the day. Permission was given to log all consumer data for the project. The apartment was drawn in 3D. The system uses speech technology (Alexa) to operate the lighting and access door, for example. Users are given continuous feedback on the energy consumption in the home. The visualisation reflects the actual consumption, as well as the history. What is more, the tools can be operated through the interface.

Open HAB was the technology used. This technology makes it possible to easily integrate energy meters,

HVAC controllers and smart power sockets. Energy saving scenarios can be programmed, depending on people's presence or the occupation of the space according to the diary. The connected software program makes it possible to easily program a user interface. Users can be informed on deviating values by means of SMS, email, etc.

The University of Applied Science Zeeland fitted a similar technological installation. An office and a workshop were used in this regard. These rooms contain machines, office equipment, office space, air conditioning, solar panels and a charging point for electric vehicles. All user data were logged and the manner in which matters were operated were based on such data. This resulted in a fall in consumption.
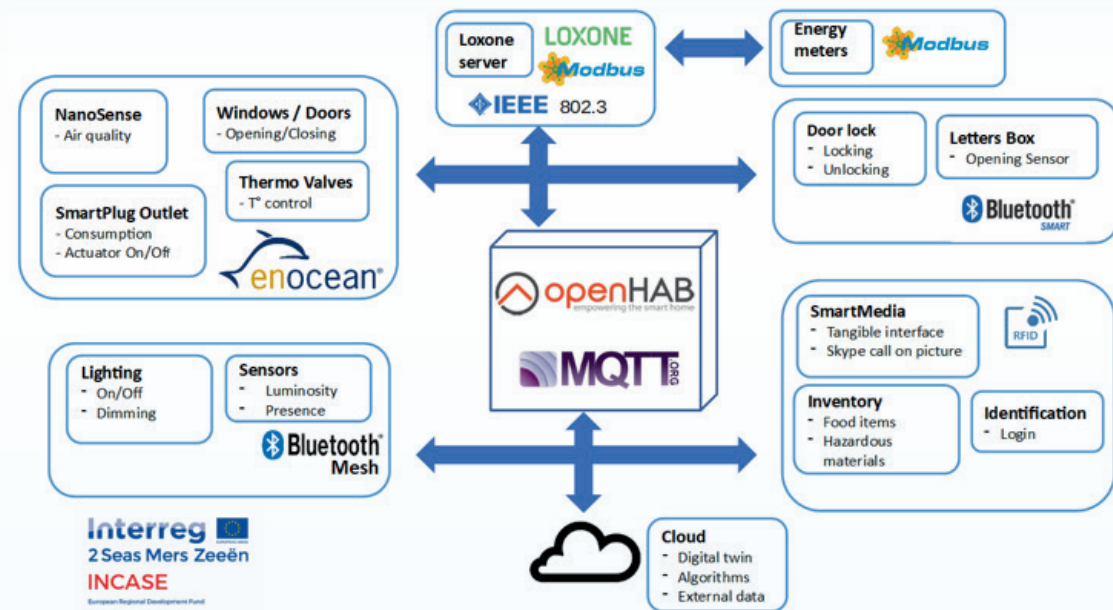
Results/Conclusions

The smart homes show that the technology is uncomplicated and can be integrated in a modular manner. A limited number of interventions leads to a considerable energy consumption reduction.

Number of companies reached through workshops and lectures

We presented the smarthome technology at various workshops and lectures and reached 52 unique companies and 69 participants.

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