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AI-BASED HOME/OFFICE SMART COMFORTABLENESS CONTROL

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Infrastructure

- **Smart Lab**

FS20 system

CUL
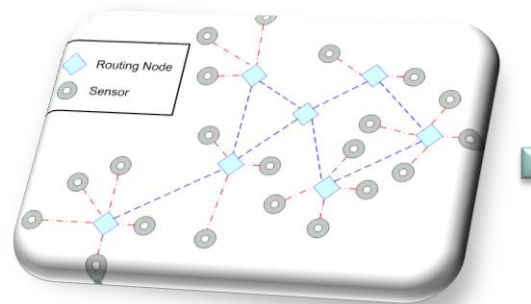
SmartTecO System
1. Web interface
2. Connection with WSNs
3. Remote control

Stick

WSNs based on µParts

Plugwise system for energy sensing

CUL

FHT80b system

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Research Proposal

- **AI-based heating energy prediction and activity recognition for Intelligent HVAC control system in the home/office setting**
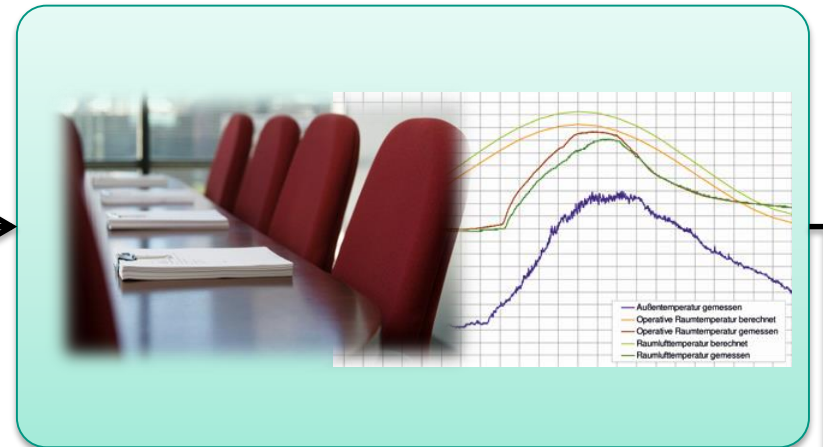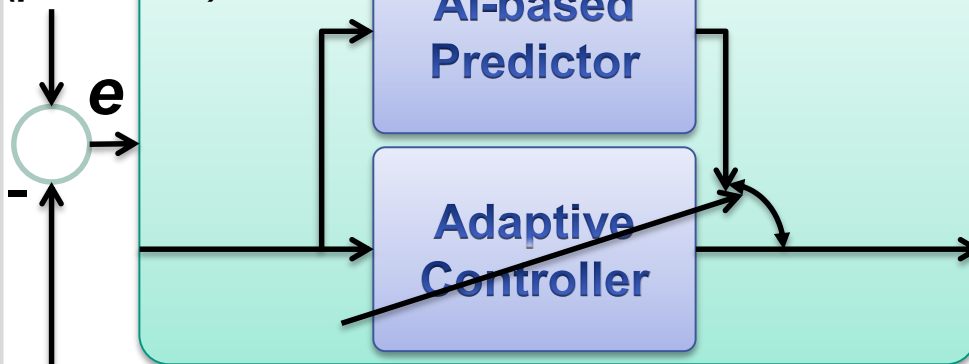
Controller
HVAC control with/without heating prediction

System Plant
System modeling of temperature development

Reference input (preference)

e

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AI-based Predictor

Adaptive Controller

Außentemperatur gemessen
Operative Raumtemperatur berechnet
Operative Raumtemperatur gemessen
Raumlufttemperatur berechnet
Raumlufttemperatur gemessen

Preference:
- *comfort criteria*
- *energy saving objectives*

SmartTECO Infrastructure

Sensor Node with SHT temperature sensor

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