Sebastian Peters (TUM)

Intuitive Control of Smart Spaces

tiny.cc/s2o

Usability Experiment

- How can you find an „intuitive“ control?
- What is the most intuitive control device in the world?
  ➡ A wand!
- Conducted a Guessability Study, where ten individuals had to (virtually) turn off a light and open two window blinds using a wand
- Test persons did not know about the project by that time

Light
Turn off this light

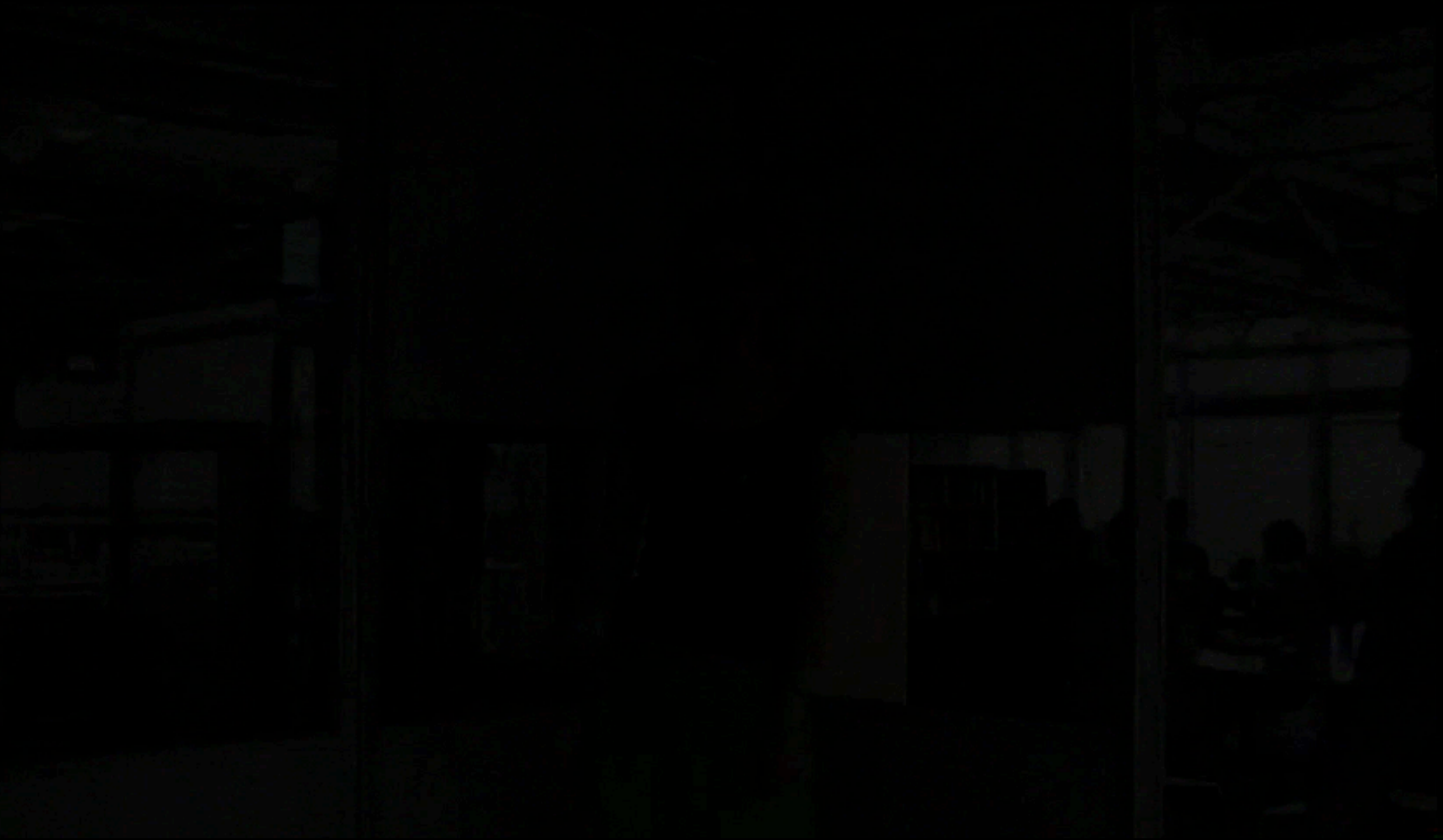
Open these window blinds

Usability Experiment (cont'd)

- Observation: Nine out of ten individuals pointed at the light/blinds and combined it with an up/down gesture

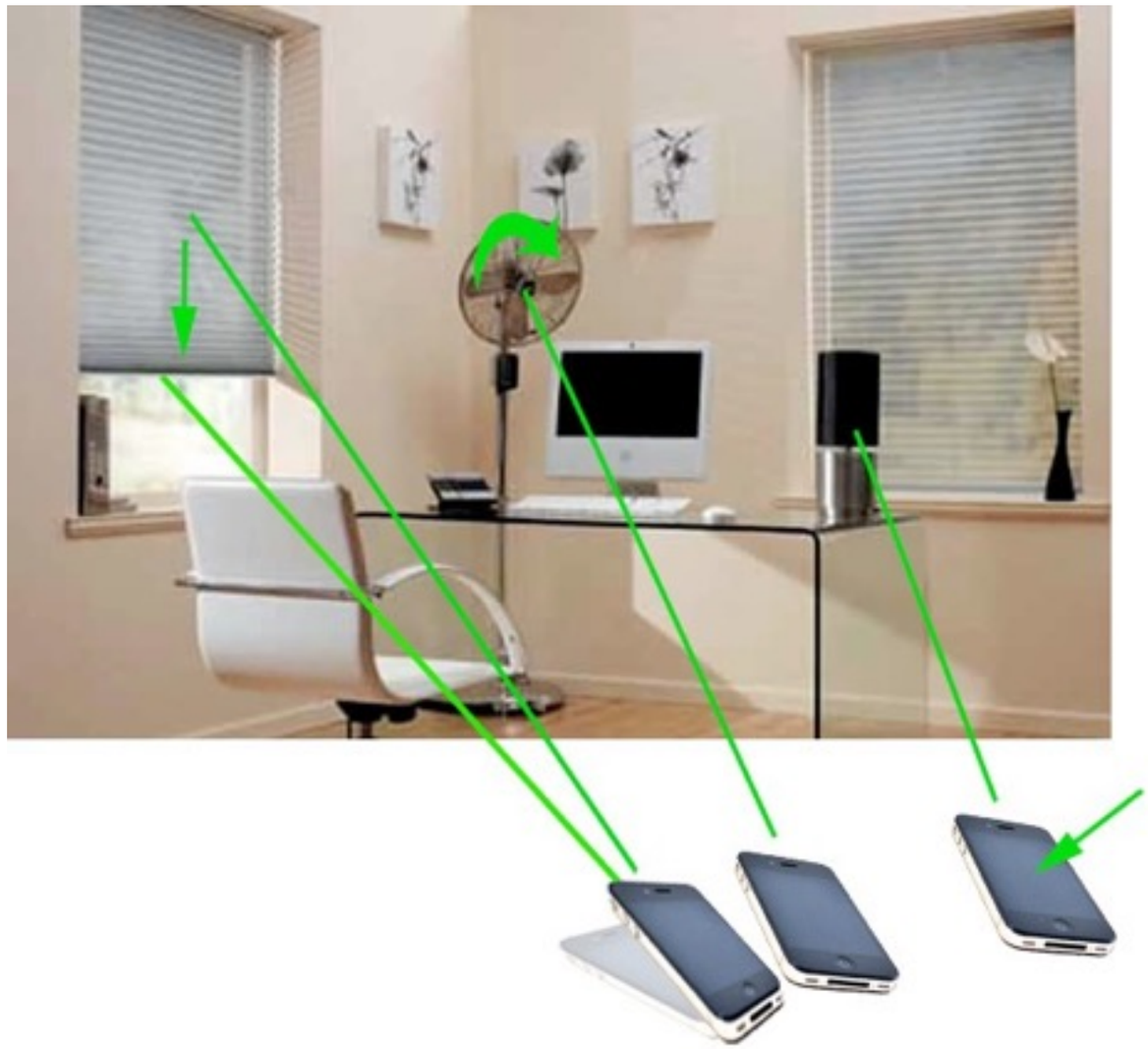
- Can this interface be transferred to a smart phone control?

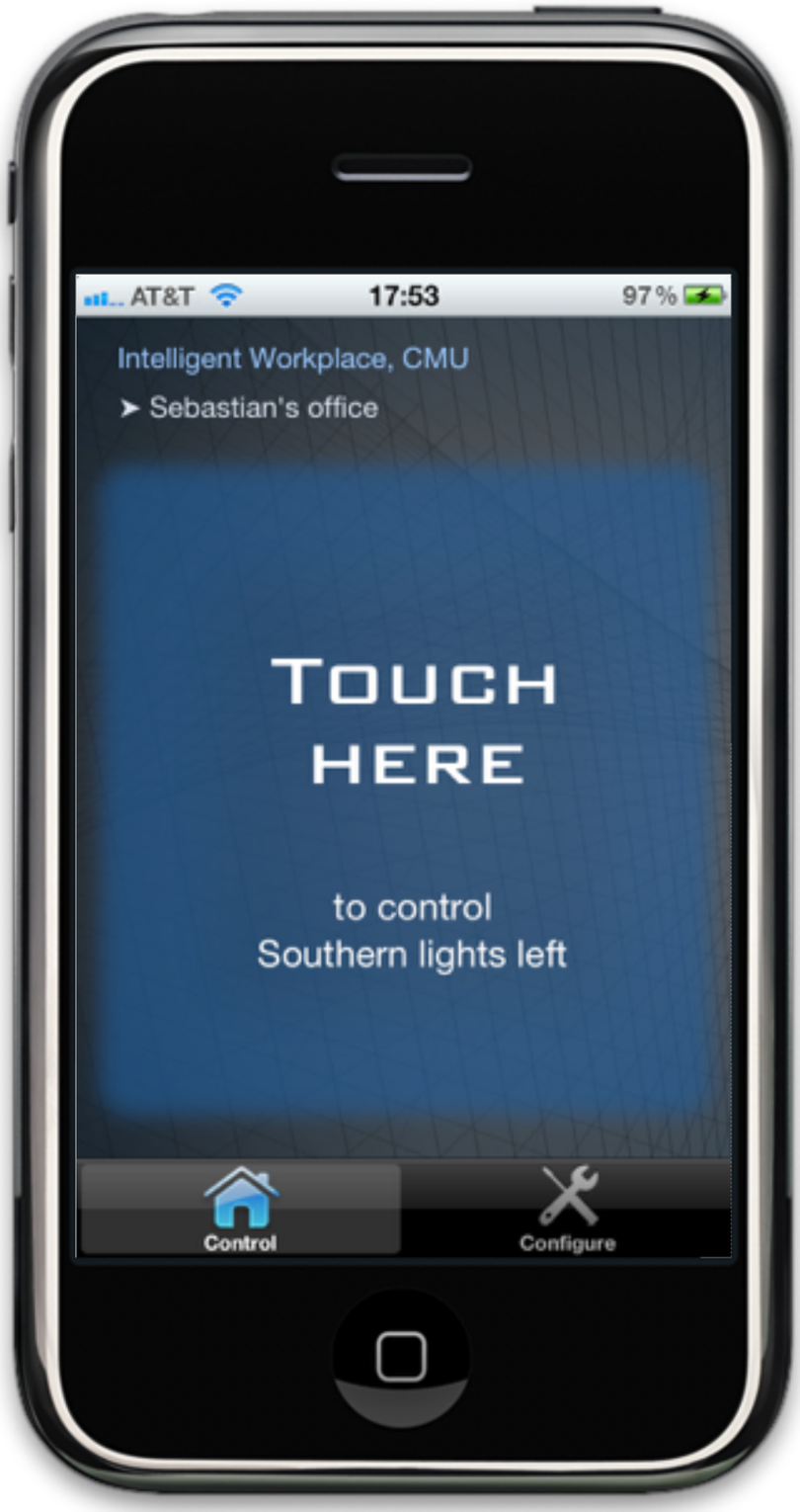
- I gave the candidates a paper-iPhone and asked them how they would perform the tasks with an iPhone



The Idea

Individually control home and office fixtures by simply pointing a smart phone at the target object and completing a specific gesture.



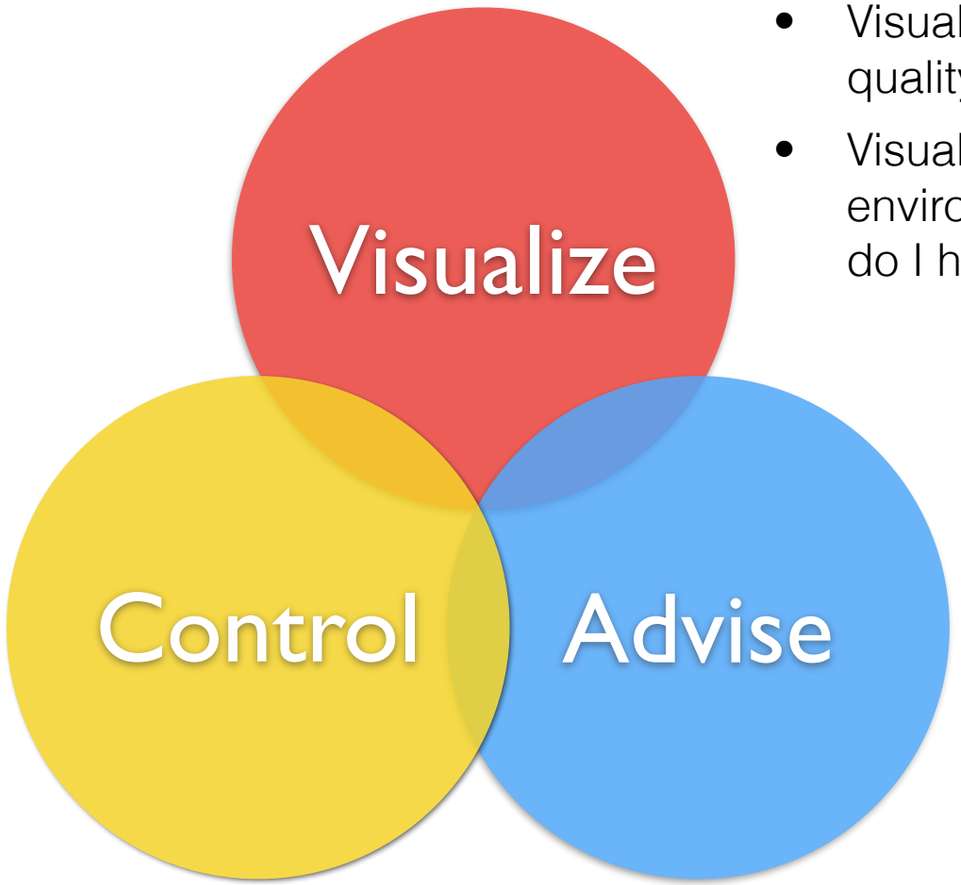


Current location

Single control button

Our Mission

„Support saving energy while providing highest user comfort in a smart space“



Visualize

- Visualize status of heating, blinds, occupancy, air quality, temperature, noise, windows (open/closed)
- Visualize the energy consumption/savings in the environment: Where are the energy hot spots? How do I have performed over the time?

Control

- Addressable Lights, Blinds, Power Outlets, Heating, …

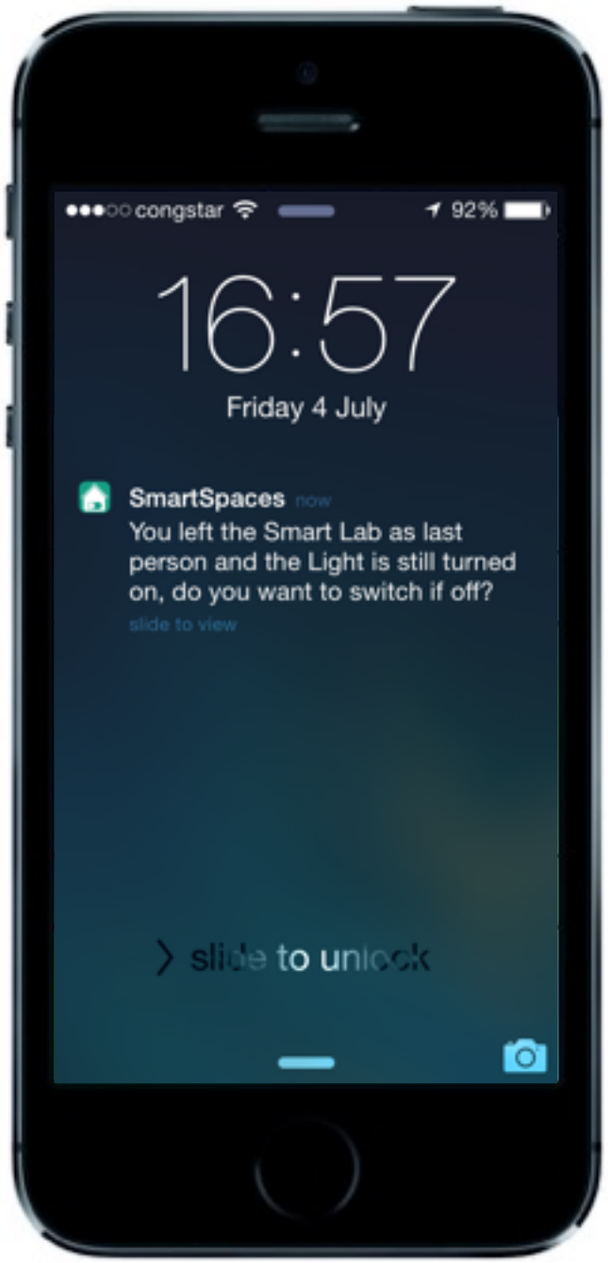
Advise

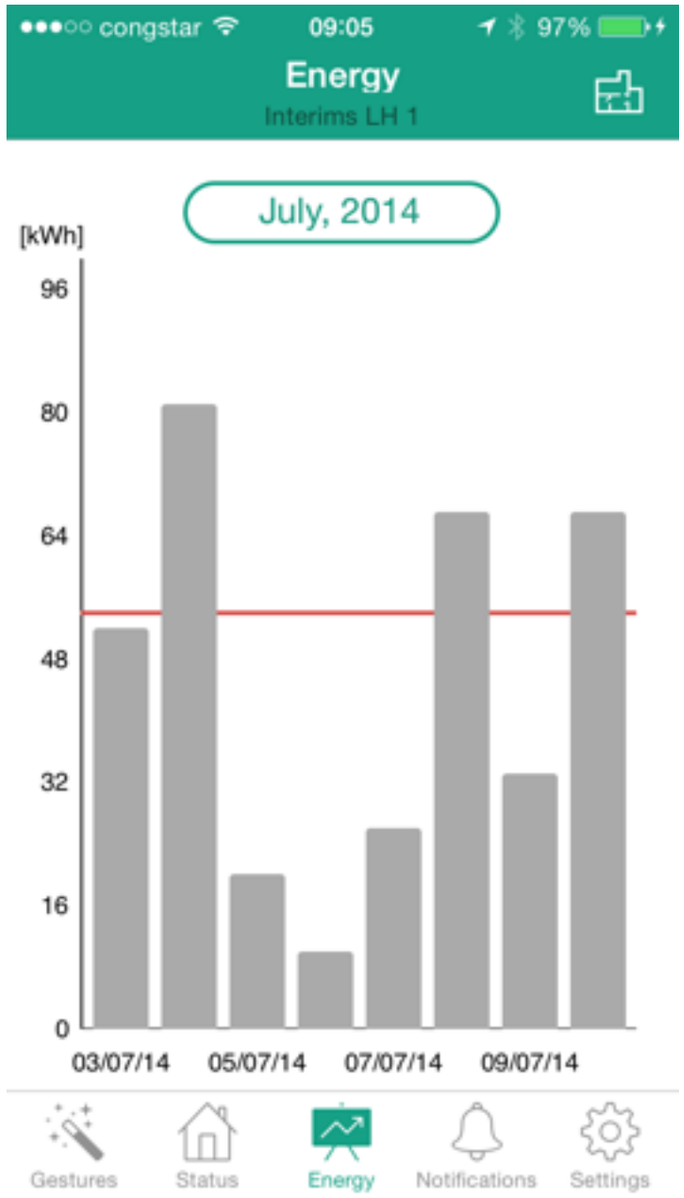
Provide valuable feedback to the user, e.g. by using push notifications:

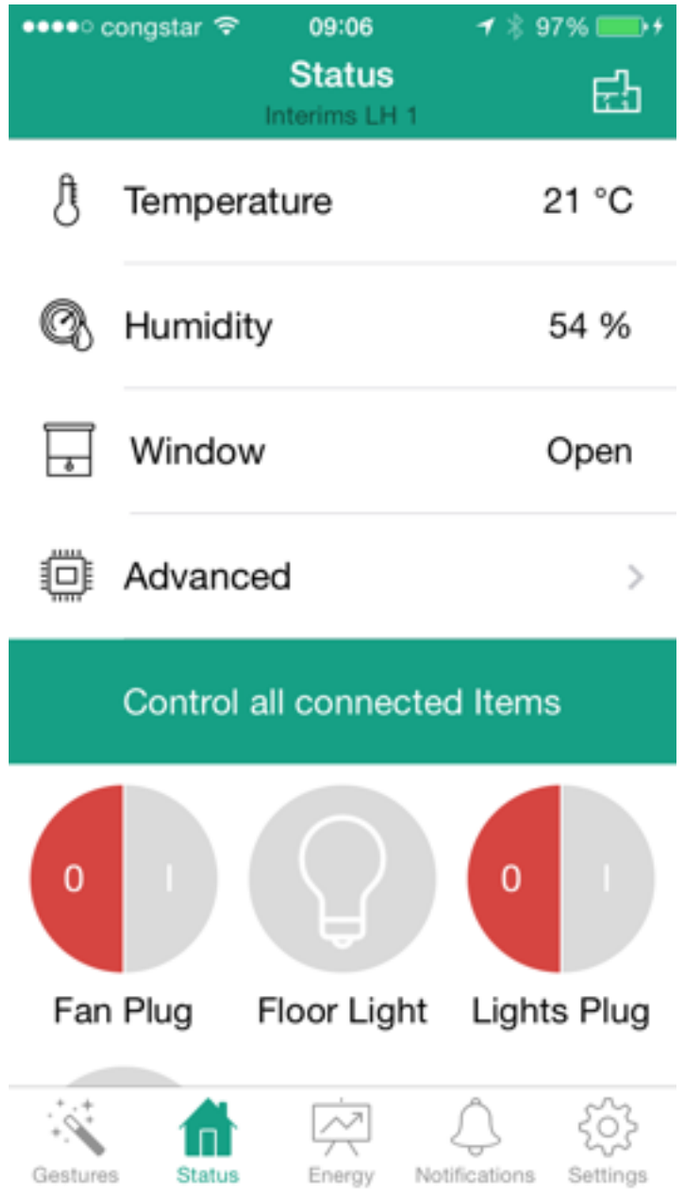
- CO2 or temperature above threshold, window is closed => „Would you like to open the window?“
- Turned light on, left room, room empty => „Would you like to turn off the light?“

Trailer of the iOS Praktikum 2014, Smart Spaces Project

Screenshots iOS Praktikum







Our Living Laboratories

Smart Spaces Lab, LS1
Technische Universität München

Intelligent Workplace
Carnegie Mellon University

Technology Enablers

iOS Devices, iBeacons, EnOcean actors and sensors (TUM), BACnet (CMU), openHAB, Philips Hue, Intel Edison, Galileo, Arduino

Technische Universität München

Carnegie Mellon University

Sebastian Peters

Questions and Discussion