

4. Why digitalization will change design requirements.

5 fields of development and innovations

1. Autonomous driving
2. New vehicle and drive concepts
3. Multimodal traffic
4. Logistics and dematerialization of transport processes
5. Internet of Everything

(Quelle: Foresight, **Prof. Dr. A. Zweck**, VDE-dialog)

- All of these innovations will cause changes in the consumer behavior and expectation
- **Ricky Hudy** (former development director at AUDI):
 - Change of paradigm from *vehicle experience* to *user experience*
 - The smartphone will become the *central control* for the user.
 - **The vehicle will serve the user like an app.**

5. „Why foils will change sailing forever.“

Yachting World, February 2016

Yachting World, February 2016:

„Will cruising boats be foiling soon?

- (...) foiling in future will also rely on incorporating either self-balancing foils or **automated systems** that ensure safe and steady flight.
- **The genie is out of the bottle.**
After all, who would now want a car without power steering or ABS?“

- or without parking assistant, crash avoidance system ...

Andy Cloughton (Land Rover BAR):

- “Modern electronics and solid state gyros are now **readily available and so cheap**, that electronic control devices could easily be incorporated” to foiling
- “The automatic electronic stabilisers in quadcopters that you can buy in any high street are an example of that.”

“The genie is out of the bottle.

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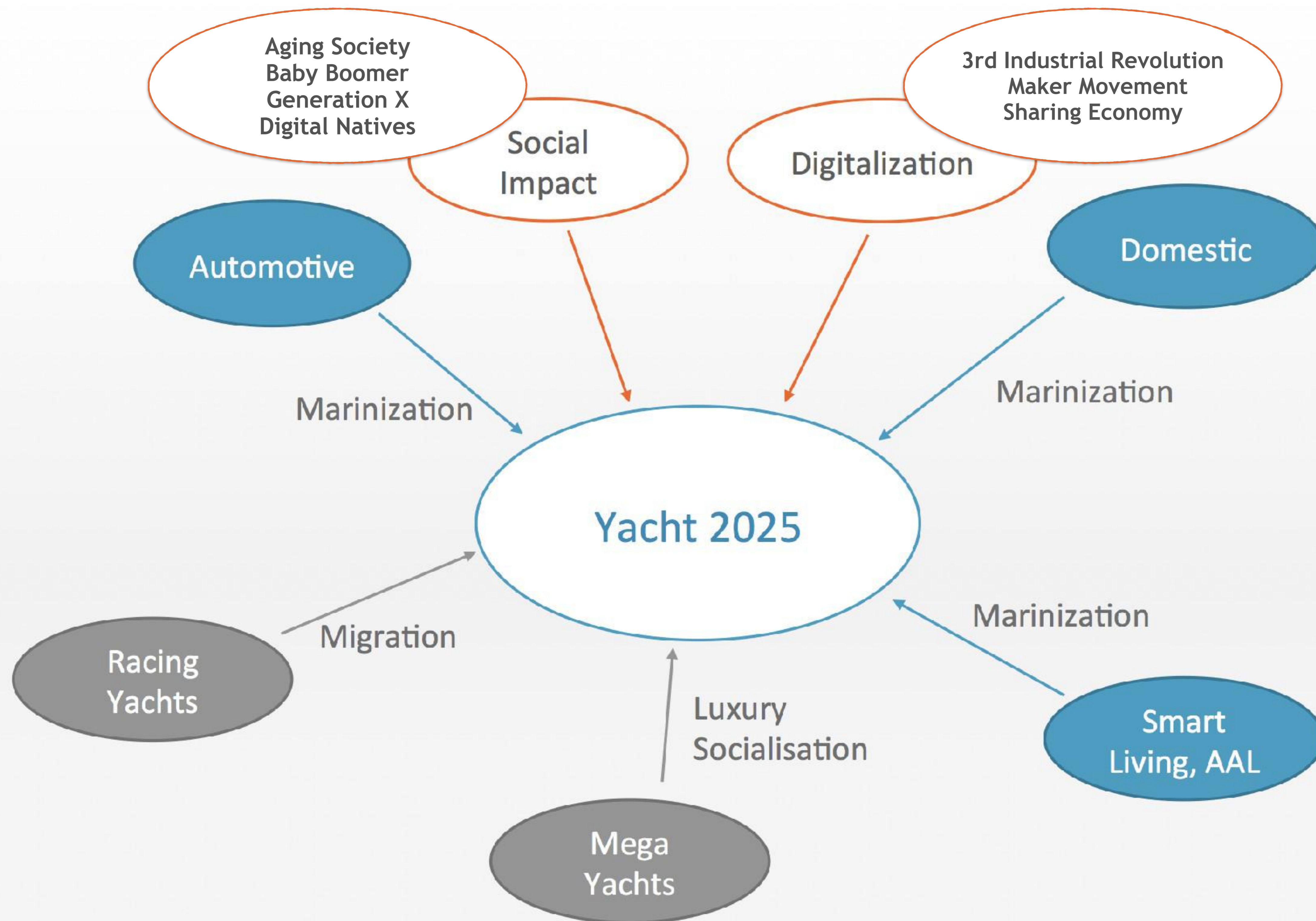
Cruising catamaran for the „Foiling Generation“



designed for **35 kn** sailing speed!

- **sailing as fast as driving** on country roads
- foiling will be ***controlled by state of the art electronics*** by one or 2 crew (Ward Proctor, Marine and Hydraulics, Helsinki)

6. Drivers of innovation for boating



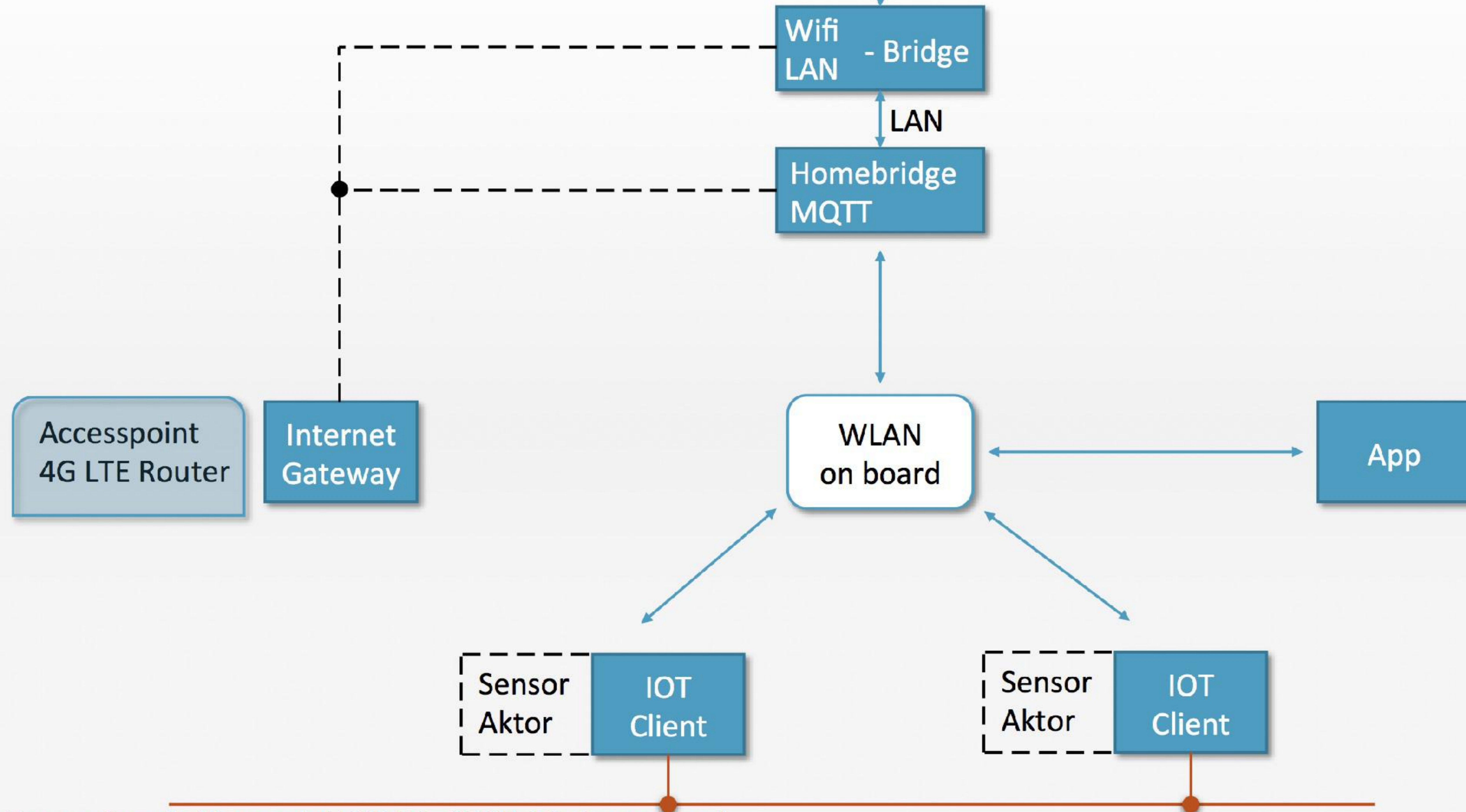
7. Show case at our lab

A show case based on

- ***home automation*** components and
- the ***software from Makers*** in order to enforce

acceptance and diffusion of technologies.

Board Data Network
(NMEA 2000, CAN)



Laboratory Setup

Accesspoint
4G-Router
YAKKER

Apple TV,
Raspberry pi

Smart watch
Smartphone
Tablett
Notebook

Arduino
ESP 8266
Brand products

Power Supply Network (12V DC, 230V AC, Powerline)

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Example: IoT for Boating

- using a smart watch as a remote for boating (a demonstrator by Comp[^]SS using the Apple Watch®)