

IoT-ECoTest

Energy consumption tests for the internet of things

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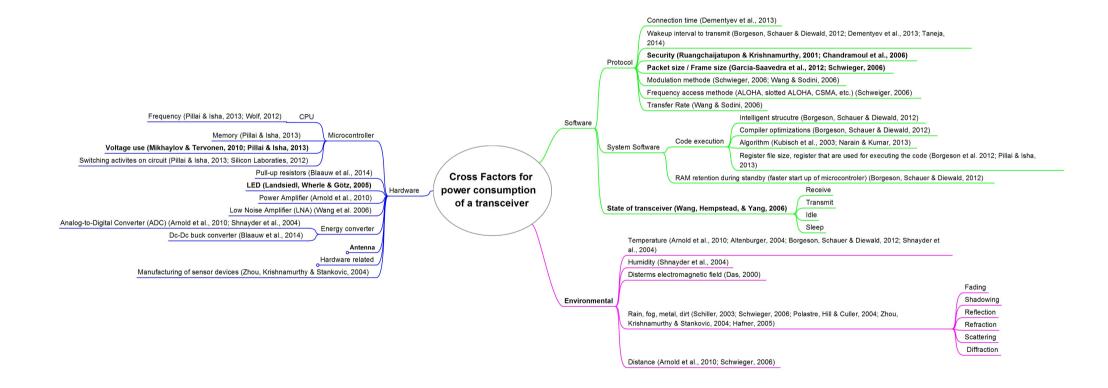


Project focus

- Which factors influence the power consumption of a transceiver?
- To what extent does each of these factors influence the power consumption of a transceiver?
- How can we compare different transceivers?

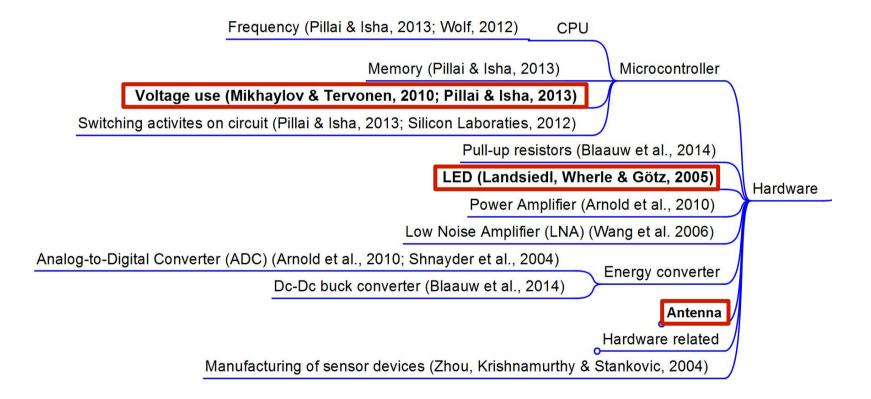


Which factors influence the power consumption of a transceiver?



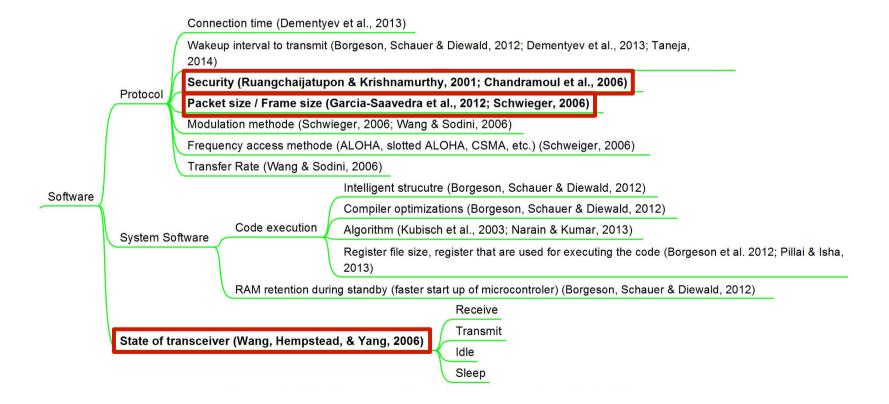


To what extent does each of these factors influence the power consumption of a transceiver?





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Temperature (Arnold et al., 2010; Altenburger, 2004; Borgeson, Schauer & Diewald, 2012; Shnayder et al., 2004)

Humidity (Shnayder et al., 2004)

Disterms electromagnetic field (Das, 2000)

Environmental

Rain, fog, metal, dirt (Schiller, 2003; Schwieger, 2006; Polastre, Hill & Culler, 2004; Zhou, Krishnamurthy & Stankovic, 2004; Hafner, 2005)

Fading Shadowing Reflection Refraction Scattering Diffraction

Distance (Arnold et al., 2010; Schwieger, 2006)



How can we compare different transceivers?





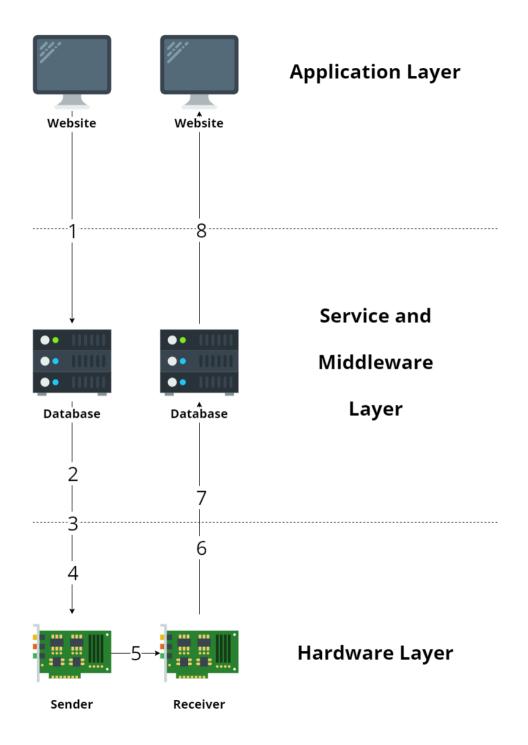
4 Modules not acquired





6 Modules left







Architecture

1. User uploads data





Architecture

- 2. Frontend saves data into database
- 3. Database activates sender
- 4. Sender gets data



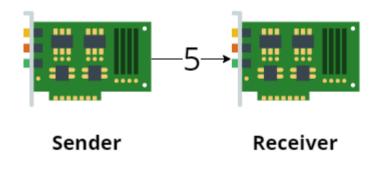






Architecture

- 5. Sender transmits data
 - Sender performs power measurement during data transmission and generates results





Architecture

- 6. Sender stores results into database
- 7. Frontend pulls results from database and evaluates key figures



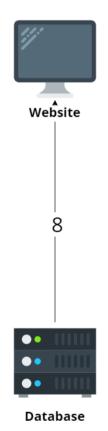


Receiver

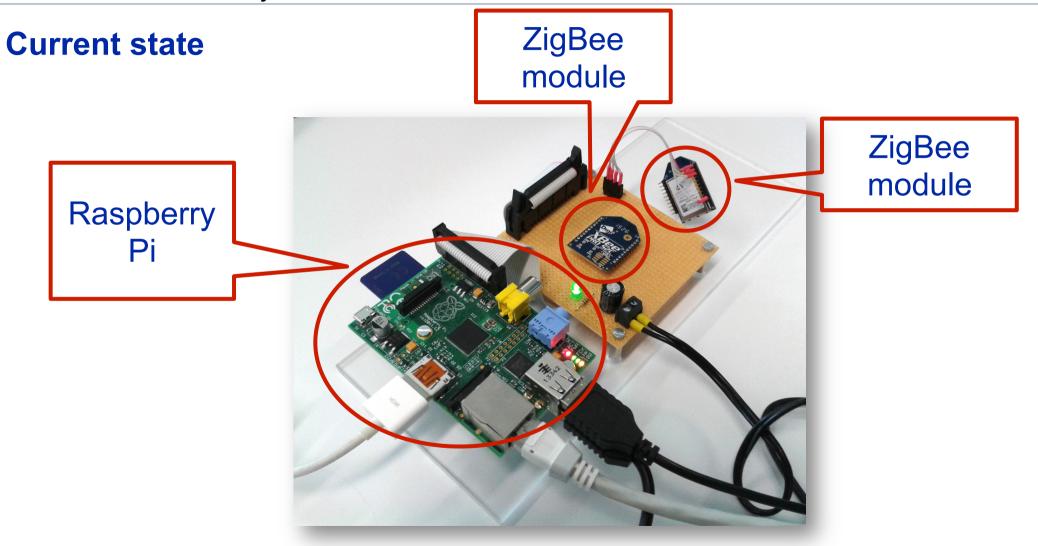


Architecture

8. Webpage displays key figures









Next steps

