



# Internet of Things code deployment metrics

Ward Schodts, Xavier Goás Aguililla

maandag 10 november 2014

- 1 Introduction
- 2 Middleware for WSNs
- 3 Evaluating energy use
- 4 Conclusion

- 1 Introduction
- 2 Middleware for WSNs
- 3 Evaluating energy use
- 4 Conclusion

- TODO hier een afbeelding zoeken en aan de hand hiervan uitleggen!
- composed of embedded computers, or 'motes' TODO foto/video van motes
- low power radios and sensors
- detecting phenomena

- military
- environmental science
- medicine
- domotics
- many more

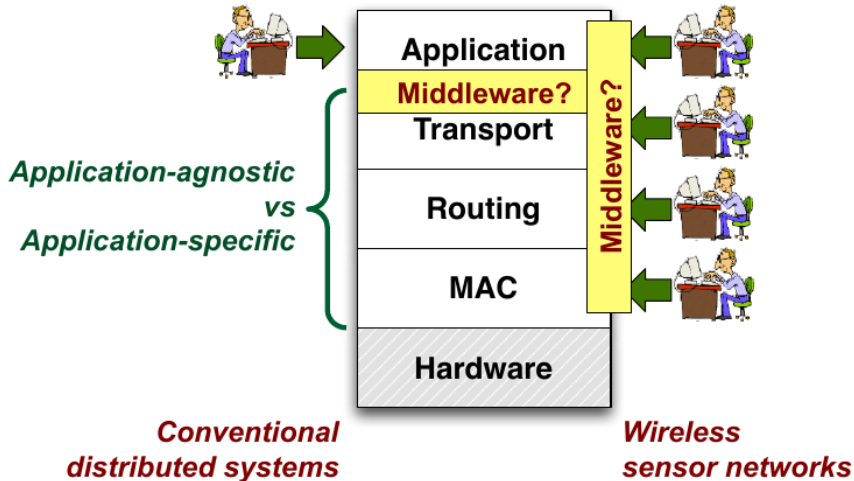
- TODO beschrijven
-

- energy-efficient
- robust
- TODO verder bij survey paper

- TODO 3 grote factoren in energie verbruik,
- uitleggen dat transmitting het meeste energie verbruikt
- Mss een grafiekje dat de verschillen duidt?
- diagram van Hughes tijdens presentatie gebruiken



- 1 Introduction
- 2 Middleware for WSNs**
- 3 Evaluating energy use
- 4 Conclusion



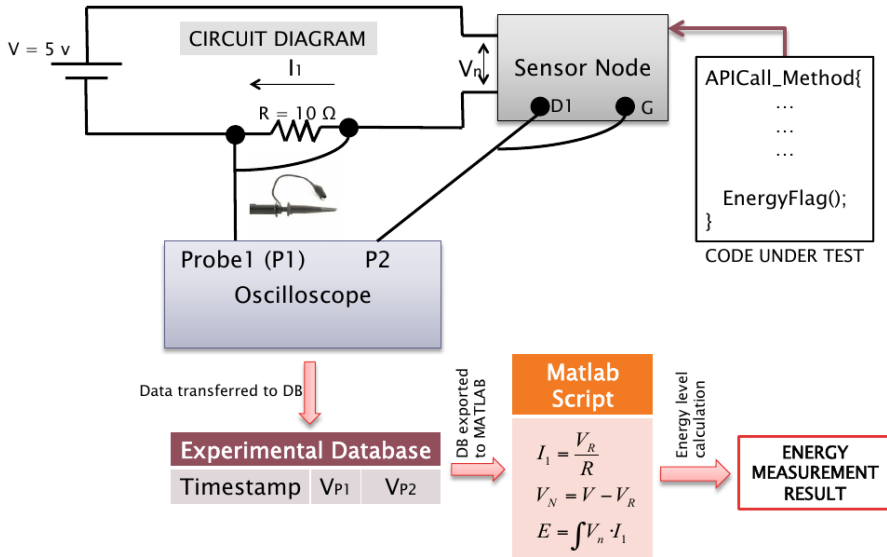
- application-based; ex. Contiki, Squawk
- component-based; ex. OpenCOM, Figaro, LooCi
  - static
  - dynamically reconfigurable

- Kort historisch
- Hoe werkt t. (vb vm?)

- 1 Introduction
- 2 Middleware for WSNs
- 3 Evaluating energy use**
- 4 Conclusion

- WSN motes need to be long-lasting
- energy efficiency is key

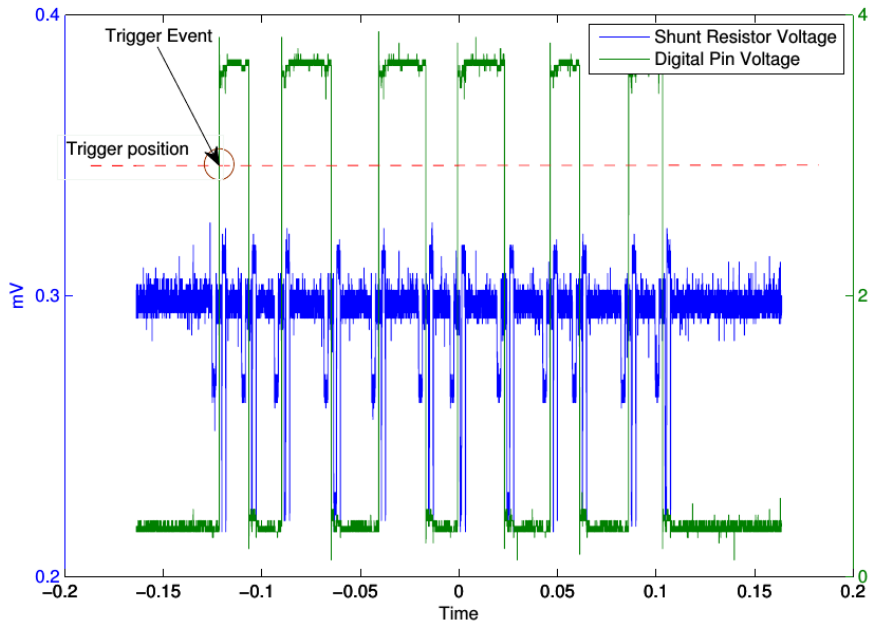
- oscilloscopy! foto/filmpje
- use triggers in software
- derive power usage using Ohm's law





# 3 – Plotting voltage

17/22



- can be derived from voltage measurements
- can be modeled using linear regression

- 1 Introduction
- 2 Middleware for WSNs
- 3 Evaluating energy use
- 4 Conclusion**





- Akyildiz, Ian F et al. (2002). “Wireless sensor networks: a survey”. In: *Computer networks* 38.4, pp. 393–422.
- Hughes, Danny, Eduardo Canete, et al. (2013). “Energy aware software evolution for wireless sensor networks”. In: *World of Wireless, Mobile and Multimedia Networks (WoWMoM), 2013 IEEE 14th International Symposium and Workshops on a. IEEE*, pp. 1–9.
- Hughes, Danny, Klaas Thoelen, et al. (2009). “LooCI: a loosely-coupled component infrastructure for networked embedded systems”. In: *Proceedings of the 7th International Conference on Advances in Mobile Computing and Multimedia*. ACM, pp. 195–203.
- Mainwaring, Alan et al. (2002). “Wireless sensor networks for habitat monitoring”. In: *Proceedings of the 1st ACM international workshop on Wireless sensor networks and applications*. ACM, pp. 88–97.