

# Zero-energy Internet-of-Things

## Energy-SIM'18 Workshop Keynote Abstract

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### ABSTRACT

In the near future, the internet-of-things (IoT) will encompass billions of (small) devices, many of which will only communicate wireless, and will not be connected to a fixed power supply. Powering these devices with replaceable batteries will not be an option, hence, we have to come to self-powered IoT nodes. This talk addresses some of the major challenges and paths to solutions for self-contained IoT devices, building on our experience in two recently completed FP7 projects (Sensation and e-balance) as well upon our plans in the newly started research program ZERO.

### CCS CONCEPTS

• **Computer systems organization** → **Embedded and cyber-physical systems**;

### KEYWORDS

Batteries; energy; internet-of-things; scheduling

### ACM Reference Format:

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### BIOGRAPHY

Boudewijn Haverkort is full professor for Design and Analysis of Communication Systems at the University of Twente, in the faculty for Electrical Engineering, Mathematics and Computer Science (EEMCS). His work focuses on quantitative methods and techniques to support the design of computer and communication systems, these days often addressed as cyber-physical systems. In all of his work, a quantitative assessment of system properties is a key-driver; in the past, he focused mostly on performance issues, but these days more and more on dependability and energy-efficiency. Boudewijn has published close to 200 papers in international conferences and journals, and has lectured at various universities. Of the last 10 years, he has been heavily involved in public-private partnerships; he was scientific director of the Embedded Systems Institute in Eindhoven (2009-2013) and since 2016 is chairman of the Dutch research and innovation program Commit2Data, on big data and its applications. Since May 2017, Boudewijn is also chairman of the department of computer science at the University of Twente, and, as such, member of the management team of the faculty EEMCS.



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### REFERENCES

1. FP7 Sensation project:  
[https://cordis.europa.eu/project/rcn/105544\\_en.html](https://cordis.europa.eu/project/rcn/105544_en.html)
2. FP7 e-balance:  
<http://ebalance-project.eu/>

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