Talk

The Internet of Things Goes Wireless

Thomas Watteyne, Mischa Dohler

Tuesday 8 Sept 2009, 10am-12noon
University College, London, UK
905 (Sir Eric Ash Room), Roberts Building
Hosted by Prof. Yang Yang

Free. Open to all.

The next wireless revolution is quietly coming and with it an epochal turnpoint in network design. Networking in the near future is no more limited to "just" the provision of a communication infrastructure. This change in design will drastically augment with the foreseen emergence of the Internet of Things. It will connect a large amount of highly resource constrained, highly heterogeneous set of nodes ubiquitously communicating in a wireless fashion. The aim of this talk is to expose an academic audience to the cutting-edge R&D challenges associated with (1) the design of this disruptive technology, and (2) the implementation of such solutions on the latest hardware.

We will structure the talk in two parts: the first part is dedicated to the background of the Internet of Things (milestones, business case, standardization) as well as node and network design (channel, PHY, MAC, NTW, cross-layer design); the second part is dedicated to understanding the challenges faced when implementation such protocols. This second part consists of a hands-on programming tutorial on the Texas Instrument eZ430-RF2500 platform. After introducing the key concepts inherent to embedded programming (interrupts, timers, I/O), we will evaluate the importance of CRC, measure the evolution of reception power with distance, implement our own preamble sampling MAC protocol, etc, before building our very own wireless sensor network. The presenters will provide attendees with the hardware and software platforms, as well as the necessary code snippets.

This talk is tailored to the level of practicing engineers and advanced researchers with both academic and industrial background who are interested in the fundamentals and design of wireless sensor networks.

Win

eZ430-RF2500 kits during the programming challenge immediately following the tutorial!

Thomas Watteyne is a postdoctoral researcher at the Berkeley Sensor & Actuator Center, University of California in Berkeley, working with Prof. Kristofer S.J. Pister on reliable low-power communication for Wireless Sensor Networks.

Mischa Dohler is a Senior Researcher with CTTC in Barcelona working on cooperative communication systems, cognitive radios and wireless sensor networks.

*More information at **wsn.eecs.berkeley.edu**.*

Thanks!
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