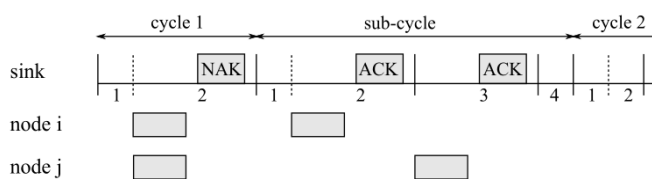




Implementing and evaluating receiver-initiated MAC protocols for IoT

Introduction:

With the advent of Internet of Things (IoT), an increasing number of devices may spontaneously communicate to exchange information. This puts emphasis on intelligent medium access control (MAC) protocols, as there is a need to guarantee a certain quality of service (QoS) on timely data/packet delivery.



Content:

The objective of this work is to develop a test bench to evaluate different receiver-initiated MAC protocols in terms of their performance, such as delay, packet loss, energy consumption, etc. This should be implemented using our transceiver boards (depicted above) with an MSP430 16-bit microcontroller and a CC2520 transceiver IC. The main focus of this work lies on the concept of design and programming of the test bench, i.e., how to collect statistics that are meaningful and how to evaluate these. In the end, a graphical evaluation of existing approaches, such as TDMA, Strawman, etc., as well as a comparison to our own research protocols has to be made.

Requirements:

- Very good programming skills in C
- Experience with microcontrollers and circuit reading
- Self-reliance

Contact:

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