Bachelorarbeit

« Hardware Implementation of a Sink-oriented Scheduling Algorithm for IEEE 802.15.4 DSME networks »

Source: https://www.iot-lab.info/

In Wireless Sensor Networks (WSNs), a common scenario is data collection, in which the upward traffic is gathered at the sink. For TDMA-based WSNs, traffic management requires a scheduling algorithm that orchestrates the allocation of time slots in a collision-free mode. One scheduling approach has been developed and implemented in Omnet++ through the open-source framework OpenDSME.

The goal of this work is the hardware implementation of this scheduling algorithm and its performance evaluation. To this end, different topologies and network sizes should be tested. The implementation must be done using COMET OS (https://github.com/CometOS/CometOS), which has been developed for M3 Open Nodes and the ATmega256RFR2, and experiments must be performed using hardware compatible test beds of the IoT-Lab (https://www.iot-lab.info/).

Knowledge in C++, as well as experience in embedded systems programming, is required.

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