Sustainable Communication Networks
Prof. Dr. Anna Förster

Implementation of Contiki-MAC

Prerequisites:	- Good knowledge of OMNeT++ (as from Network Simulation Theory Module) - Good understanding of duty cycling and low-power wireless protocols (as from Internet of Things Module)
Level:	This topic is appropriate for Master Students
Language:	German or English

INTRODUCTION

Contiki-MAC is one of the most popular MAC protocols for sensor networks, available for many hardware platforms and simulators. More details about its functionality can be found in the original reference [1].
The goal of this project is to implement Contiki-MAC for inet/OMNeT++.

PROJECT DESCRIPTION

The following steps are recommended:

- Study carefully Contiki-MAC [1]
- Make a plan how to implement Contiki-MAC under inet for OMNeT++: where to place it, which module to use as a parent to inherit, how to connect it.
- Implement Contiki-MAC
- Identify some scenarios for the comparative evaluation
- Undertake the performance evaluation with Contiki-MAC and the readily available B-MAC and X-MAC.
- Report findings of the performance evaluation, document the implementation.

As a help, an implementation of Contiki-MAC is available for LoRa and Pycom devices under *https://github.com/ComNets-Bremen/LoRa-DuCy*.

CONTACT

If you are interested in this work, please contact us via mail: projects@comnets.uni-bremen.de

REFERENCES

[1] Adam Dunkels. *The ContikiMAC Radio Duty Cycling Protocol*. Swedish Institute of Computer Science, 2011. ZSCC: 0000565.