



# Transfer of existing TinyOS implementation of TinyIPFIX and extensions to Contiki

## Motivation

Today the interoperability stands in focus for new implementations. In the field of sensor networks different operating systems exist – TinyOS and Contiki. At our department the TinyIPFIX protocol was developed. This protocol is an efficient solution for data transport in wireless sensor networks. Additionally, different extensions such as aggregation functionality and secure data transmission were developed.

The existing TinyIPFIX is currently implemented in TinyOS and supports sensor platforms such as IRIS, TelosB and OPAL. The development of sensor node hardware improves and the focus of the operating system changed depending on the vendors. Currently the JAVA based operating system Contiki is preferred. In order to support our developed TinyIPFIX solution also on this hardware (e.g. TelosB, Imote) the implementation should be transferred to the new operating system Contiki.

## Your task ...

...will be the comparison of the two operating systems TinyOS and Contiki in general in order to transfer the existing TinyIPFIX solution to Contiki. The current implementation includes the TinyIPFIX protocol, aggregation functionality, and security solution.

The implemented version under Contiki must be evaluated with TelosB / OPAL nodes which work on both operating systems. The aim will be a comparison of the existing and new developed implementation concerning resource requests and performance

Regulated by thesis type the complexity will be

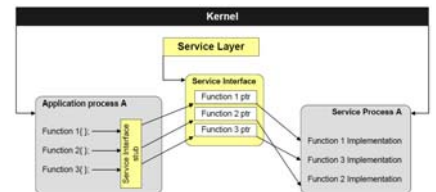
- Basic familiarity Java and/or Contiki
- Knowledge of nesC and TinyOS a plus
- Integration into an existing implementation

## Requirements

## Keywords

Wireless Sensor Networks, Standardization, Operating Systems

Contiki Architecture Overview



TinyOS Architecture Overview

