

Semester Thesis “Network and Routing Layer Services for TinyOS”

Sensor networks are an emerging computing platform consisting of large numbers of small, low-powered, wireless “motes” each with limited computation, sensing, and communication abilities. Sensor network programming is difficult, due to the limited capabilities and energy resources of each node as well as the unreliability of the radio channel.

In order to facilitate future application development we intend to build up a library of reusable components providing services such as

- Flooding
- Multi-hop routing
- Topology control
- Time synchronization
- Data aggregation
- Control and visualization of the network



A mica2 sensor node

for the TinyOS operating system. In this thesis you are working with actual sensor nodes in particular with mica2 motes. Therefore, you have the possibility to get an insight into an embedded platform.

If you are interested in one of the topics mentioned above or have a neat idea of your own please feel free to contact one of us!

Required

- Basic C programming skills
- Interest in working with an embedded platform

Contacts

- Nicolas Burri, nburri@tik.ee.ethz.ch, ETZ G63, phone 26059
- Pascal von Rickenbach, pascalv@tik.ee.ethz.ch, ETZ G61.3, phone 27007
- Roger Wattenhofer, wattenhofer@tik.ee.ethz.ch, ETZ G61.4, phone 26312