Thesis Title: ***Power Line Communication for the IoT***

Joint thesis offer by Manetos and RISE SICS

Description of the units:

Manetos develops new systems for heating. Our vision is to make it easy for people to upgrade their existing heating system with smart new features and save energy without having to exchange the heat system.

The Networked Embedded Systems (NES) group at RISE SICS is a part of the Computer Systems Laboratory. The current research focus is on wireless sensor networks and the Internet of Things. Among the group's key technologies are the Contiki operating system, uIP stack, COOJA/MSPSim and ContikiRPL. The NES group conducts projects together with industry and academic partners from Sweden and across the world.

Thesis description:

The Internet of Things (IoT) is expected to connect billions of devices such as sensors and actuators. While the IoT often relies on wireless communication between battery-powered devices, a less considered alternative is power line communication where the devices are inherently powered. Nevertheless, powerline communication is in many aspects similar to wireless communication. For example, packets get frequently lost.
The goal of this thesis is to design and implement an Open Source 6lowpan based IP stack for power line communication. The development can be performed in the Contiki and Zephyr OS. Actual hardware for the project is available.

Competence:

We are looking for a bright MSc student who has fulfilled the course requirements. Very good C programming skills are required, as is good spoken and written English. You also need to be curious and self-going. An interest in computer networking and Internet of Things is of high value.

Applications should include a brief personal letter, CV, and recent grades. In your application, make sure to give examples of previous programming or other projects that you consider relevant for the position. Candidates are encouraged to send in their application as soon as possible. Suitable applicants will be interviewed as applications are received.

Start time: As soon as possible
Location: RISE SICS, Isafjordsgatan 22, Kista, Stockholm
Manetos, Linnegatan 18, Stockholm

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