Computer Networks Group

Work Plans

1.1. Co-scheduling of tasks and packets in wireless sensor networks

Level: B.Sc or M.Sc

Objective: Some wireless sensor network applications present temporal restrictions for performing certain duties, like acquiring data from its sensors and processing network packets. Such duties, modeled as tasks, often contend for shared resources, especially for CPU and Radio. Adequately scheduling of sensing tasks and packet processing is important in order to enforce the correct behavior of the application. In this work package, the candidate will research approaches for co-scheduling of tasks and packets in wireless sensor networks with timing constraints. A co-scheduler must be implemented for EPOS. Such co-scheduler must allow packet processing to be modeled as tasks, thus allowing energy-aware real-time schedulers to be deployed.

Activities:

- Study related work;
- Study EPOS scheduling mechanisms;
- Study OmNet++ simulation environment;
- Design and implement the co-scheduler;
- Test and validation of the implementation;
- Write a report or a paper;