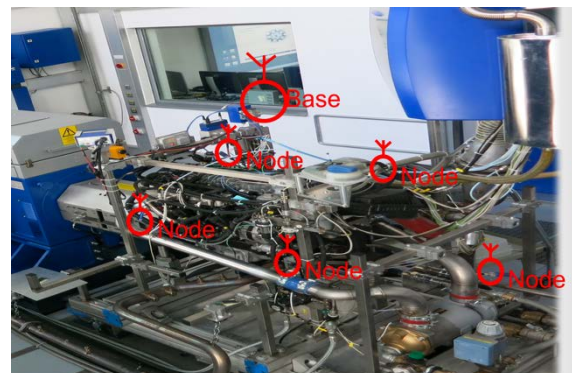
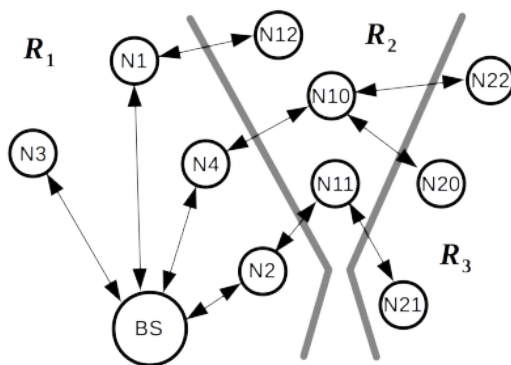


Topic:

Routing in low power wireless network communication.

Motivation and Goal:

A routing protocol has to be implemented that balances energy consumption among wireless sensor and actuator nodes under the constraint of minimizing end-to-end latency. Minimized and nearly deterministic end-to-end latency allows centralized real time data recording and actuator control. Moreover, defined latency improves security and safety mechanisms to come closer to the trustworthiness of a cable while realizing the advantages of wireless networks. Battery powered or energy harvesting wireless nodes are inevitable to avoid power lines and therefore, we cope with limited energy budgets. In order to balance the communication load among sufficiently supplied nodes, the energy budget is part of the routing path metric. The existing WSN protocol EPhESOS has to be extended by routing at the base of a low latency multi hop routing algorithm.



The routing protocol has to be implemented on the node hardware and on the base station. The measurements have to be performed and the results statistically analyzed. A complete testbed has to be programmed with user interface, MATLAB and python interface.

Begin: ASAP (04/2018)

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