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Master Degree Project –Network Management Mechanism Design for Industrial Wireless Sensor Network

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Background:

Effective and efficient network management is crucial for industrial wireless sensor network (IWSN) which requires critically deterministic behavior. Existing standards like WirelessHART has specified some mechanisms for the network management. But challenges and issues still exist in practice, e.g. the traffic overhead, friendliness to RTOS and multicore/multiprocessor, and the integration to existing field bus systems.

Task:

The purpose is to improve the existing mechanisms (and propose new ones if needed) based on practical implementation and evaluation aiming for the above concerns. The student will study a current simpler implementation in hand, then add more functionality, evaluate performances, and finally improve it. If the results are satisfactory, the student could possibly be offered an opportunity to continue this work in other forms after the thesis project is finished.

Requirements:

Students in MSc programs in Electrical/Electronic Engineering, Engineering Physics, and Computer Engineering or similar are suited for this job. Candidates are expected to have a strong background in ARM MCU, RTOS, and embedded C/C++ programming. Good knowledge on wireless sensor network, and communication protocol is desired. It is also important that the applicant have good writing and communication skills. Please indicate a list of courses with marks, a CV, and evidence of your project achievements in your application.

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