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Energy Efficient routing protocol in personal wireless area networks.

The goal of this assignment is to get to an implementation of an energy efficient routing protocol that is tailored to a specific personal wireless area networking device. In particular, the assignment will concentrate on extending the OLSR protocol to include the decision logic for selecting the most suitable relay node for communication purposes, based on the remaining battery capacity as a starting point.

The following steps are distinguished in this assignment:

- 1) Analysis: based on the fact that there are messages transmitted at regular time intervals, how (1) messages be combined, and (2) the routing protocol be designed, such that the number of attempts to access the radio transmitter are minimized. In addition to this, (3) the interface between the battery and the routing module plays an important role.
- 2) Validation platform: selection of the validation platform to be used (e.g. Linux, Windows CE).
- 3) Implementation and validation of the optimized routing protocol on the selected platform.
- 4) If the validation shows a large improvement on the energy efficiency of the protocol over exist approaches, the implemented protocol should be made suitable for operating on a Thales-sper embedded system.

Job Requirements

The Student must be interested in:

Programming in C/C++, Linux, TCP, IP, Communication Networks.

The Student must have experience with:

Programming, telecommunication and datanetworking, Embedded systems.

About Thales:

Thales Land & Joint Systems is part of Thales Nederland and member of the international Thales Group. Thales is a global technology leader for the Aerospace, Space, Defence, Security and Transportation markets and has approximately 68,000 employees in 50 countries. With its 25,000 engineers and researchers, Thales has a unique capability to design, develop and deploy equipment, systems and services that meet the most complex security requirements.

Thales Land & Joint Systems develops and manufactures high quality integrated communication systems for both commercial organisations and defence and has approximately 330 employees including 150 engineers working in Research and Development.