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MSc Assignment

**Twente Institute for Wireless and Mobile Communications BV (WMC)
University of Twente – DACS**

“Performance evaluation of cognitive radio algorithms and protocols”

Background

The Freeband AAF project (see <http://aaf.freeband.nl>) performs research, develops and demonstrates a cognitive radio system, which continuously adapts its communications scheme to the available physical resources (frequency, time, space) for ad-hoc networks, providing robust communication. In even a complex and dynamic environment, the system maintains radio communication according to the required QoS. Early deployment is expected in high risk, life threatening and emergency situations.

In the project new algorithms and protocols have been developed or are under development for 802.11 based multi-radio mesh networks. These algorithms and protocols dynamically select and maintain mesh connectivity and perform physical resource selection such that performance and robustness are guaranteed.

Theoretically these algorithms and protocols improve the system performance, however in practice these algorithms and protocols require additional processing and bandwidth, especially when the network size increases.

Assignment

The goal of this MSc assignment is to evaluate both the mesh network system performance and the scalability of above mentioned algorithms and protocols through system modelling, simulations and/or experimentation. The duration of the assignment is 8-9 months. The assignment shall be conducted at:

WMC (see also <http://www.ti-wmc.nl>)

Institutenweg 30

7521PK Enschede

Supervisor: Hugo de Graaf (hugo.de.graaf@ti-wmc.nl)

Student profile

Background and/or interest in wireless communication systems, protocols, performance evaluation, C-programming and Linux.

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