Project proposal template – Faculty studentships Summer 2014

Project title	Ubiquitous Networking Towards Realisation of the5G Paradigm	*Director of Study*	Christos Politis
Second Supervisor	Eckhard Pfluegel	*School*	Computing and Infor
Other members of supervisory team	Martin Tunnicliffe and Professor Matti Latva-aho, University of Oulu, Finland	*Any requirements from applicant (eg degree in specific subject area)*	Degree (MSc) in Computer Science or Electrical/ Electronic

Project summary

(max 1,000 characters)

Wireless Networking is omnipresent and ubiquitous and by year 2020 ten trillion smart devices will be wirelessly connected according to the Wireless World Research Forum. Mobile Ad hoc Networks (MANETs) are to play a significant role towards the 5G (fifth generation) networks paradigm. MANETs being decentralised and distributed require an intelligent routing protocol to communicate with other devices. MANET routing protocols can be proactive, reactive or hybrid. A hybrid routing protocol called ChaMeLeon (CML) was developed by researchers at Kingston University. In 5G, ubiquitous devices will often require mobility between other types of heterogeneous wireless networks (HETNET), such as LTE (Long Term Evolution), WiFi and MANETs. The main objective of this PhD research is to enhance the CML routing protocol so it functions within and across hetnets. The enhanced version of the CML protocol will be called CMLv2 and extensive work will be carried out to reduce its existing overhead and improve its reliability and efficiency based on Quality of Service metrics while increasing its mobility so it operates in and across hetnets. The CMLv2 will be researched in 4 discrete phases: design (1), implementation (2), evaluation (3) and validation (4).