ECSE Seminar on Tuesday 20th July 2004

Title: Medium Access Control (MAC) for Quality of Service (QoS) in Wireless Local Area Networks (WLANs)

Speaker: Minh Duc Pham

Supervisors:
Prof. Gregory K. Egan
Dr. Y. Ahmet Sekercioglu

Center for Telecommunications and Information Engineering (CTIE)

Abstract

Wireless Local Area Network (WLAN) is becoming the edge network of choice in today’s communication infrastructure. The IEEE 802.11, which involves the Medium Access Control (MAC) and physical (PHY) layers, is so far the most widely used WLAN standard. However, it does not have the mechanisms to support the Quality of Service (QoS) requirements of an increasing number of multimedia services being used on the networks. Therefore, a number of techniques for QoS support at the MAC layer have been recommended. However, most of the proposed mechanisms only focus on throughput and not on delay and jitter requirements of real-time applications. It is now well known that these aspects of QoS are of increasing significance for audio and video applications. This research project will focus on providing a solution to this need by designing a MAC QoS mechanism for 802.11 WLAN that satisfy the delay and jitter constraints of real-time applications, and be able to provide fairness to best-effort applications and maximize the total throughput at the same time. This MAC QoS mechanism for WLAN, if realized, would allow much more real-time applications to be used on WLANs.

About the speaker

Minh Duc Pham holds a Bachelor degree (First Class Honor) from University of Sydney and a Master by coursework degree from University of Technology, Sydney (UTS). He is currently working on his PhD project under the supervision of Prof. Gregory K. Egan and Dr. Y. Ahmet Sekercioglu.