# Project 2: Simulating A Wireless Multicasting Algorithm

## 1. Introduction

Experimental simulations form an important part of the research activity in studying Computer Networks and Wireless Communications. In this project, you will learn about a wireless multicasting algorithm published in a research paper, and then develop/program this wireless multicasting algorithm in Network Simulator 2 (NS-2). In Part 2 of this document, you can find the list of wireless multicasting algorithms.

This is a group project. Therefore, you are encouraged to talk to your group members and to work on this project as a team during project development. Please note each group may have up to 4 students.

## 2. List of Wireless Multicasting Algorithms

The list of wireless multicasting algorithms is below. Each group must choose one algorithm to complete your project.

- Geographic multicasting, referring to
  - X. Xiang, X. Wang, and Y. Yang. Supporting Efficient and Scalable Multicasting Over Mobile Ad Hoc Networks. IEEE Transactions on Mobile Computing, vol, 10, issue 4, pages 544-559, 2010
- Link-controlled routing tree, referring to
  - W. Tu, C. Sreenan, C. Chou, A. Misra, and S. Jha. Resource-Aware Video Multicasting via Access Gateways in Wireless Mesh Network. IEEE Transactions on Mobile Computing, vol. 11, issue 6, pages 881-895, 2012.
- Multicast ad hoc on-demand distance vector (MAODV) routing, referring to
  - Mobile Ad Hoc Networking Working Group. Multicast Ad Hoc On-Demand Distance Vector (MAODV) Routing. IETF, 2000.
- Efficient multicasting via mesh gateways, referring to
  - P. Ruiz, F. Galera, C. Jelger, and T. Noel. Efficient Multicast Routing in Wireless Mesh Networks Connected to Internet. In Proceedings of the First International Conference on Integrated Internet Ad Hoc and Sensor Networks, 2006, Nice, France.

## 3. Network Simulator 2

Please use the version NS2.35 to carry out your group project.

You may find NS2.35 in this webpage https://www.isi.edu/nsnam/ns/ns-build.html

## 4. Assessment

You will be assessed according to the two components below.

- Individual project presentation (30%). Each of you will give a **10-minute** presentation for the project. The presentation will include 1) your understanding of the wireless multicasting algorithm that your group selects, and 2) what you have done for the group project. The presentation schedule will be released later.

- Group demonstration (30%). Each project group will demonstrate the programmed wireless multicasting algorithm as a team. The demonstration time for each group will be **15 minutes**.

- Code submission (40%). After your demonstrations, you will submit your code to me via email (w.tu@auckland.ac.nz). Please put all code into one folder and compress the folder before your submission.