**Lab Number:2**

**Lab Title: MANETS**

**Abstract:** The Objective of this Lab is to gain an understanding of mobile networks and what impact having mobile nodes has on the connections and links within the topology. This will be explored by understand how to create mobile nodes within ns2 and how to generate/read trace files.

**Aim Objectives and Goals:** The aim of this Lab is to gain an understanding on how mobility has an impact on connectivity.

Some are objectives are as listed;

* Understand the new trace file format within ns2
* Understand how to add mobile nodes within ns2
* Explain the differences in mobile to static topologies
* Demonstrate how to configure new mobile nodes within ns2
* demonstrate how to create a variable dependent file name in ns2

**Observations, Results, and Discussion:**

After running scenario 1 the notice points are that although the code specifies that at 10s a connection is to be established, because of the range between the nodes a connection isn’t yet established. It is not until the mobile nodes are closer to closer we can see a connection established. This is a great example of one the main challenges and differences between both static and wireless topologies.

TOPIC 2

Q1: The reason for the drastic changes within both trace files is due to the mobility within the topology of lab1. Until the nodes are in range connections aren’t established. This is shown with large sections of the tr file for lab 1 having blank ‘to nodes’ and blank ‘destination addressees’.

Another difference is shown in the address locations given in node.port format. This also is due to the mobility of the lab1 network.

Q2: As shown in the code, 3 new nodes with different starting positions were created. The new destination(movement) of the nodes is defined by giving a time and the new destination. These nodes are defined by using by adjusting the number of mobile node variable which will alter the loop limiter set to create the nodes.

Generating any mobility Is specified by providing the new position of the node and at what time.

Q3.The trace file name comes from the variable used to define the protocol. So to change the name to ‘DSDV\_trace\_file\_6\_nodes.tr’ the protocol DSV will be selected and the ‘3’ changed to a ‘6’, however the number of nodes could also be linked to a variable to automate this process.

TOPIC 3

Q1 This example is very similar to the first one however, the nodes are radiating a ring around themselves which indicates the nodes range. We can also see nodes moving in and out of the other nodes ranges.

Q2 This process is almost identical to TOPIC 2 q2. See code for example

Q3 There are multiple ways of doing this similarly to TASK2 Q3. Changing the variables that the file name reads from. Another method could be to create a separate variable that defines the file name and have this set or have as a parameter from the command line.

**Location of Practical Work:**