# On the Fairness of Frequency Domain Resource Allocation in Wireless Mesh Networks- A Survey

## ABSTRACT:

This article presents a concise survey of fairness aware frequency domain resource allocation techniques in Wireless Mesh Networks (WMNs). Wireless mesh networks have emerged as a key technology for next generation application specific multi-hop wireless networks. We analyze the state-of-the-art resource allocation schemes for WMNs, providing comprehensive taxonomy of the latest work and the future research trends in this field. In general, the resources that are available for WMNs include, time, frequency, space, relays, and power. An efficient utilization of these resources can make the network more robust, reliable, and fair. In this article we focus the frequency domain resource fairness techniques already presented, and then, provide a suboptimal fair resource allocation scheme that maximizes the sum throughput after guaranteing the Service-Level-Agreement (SLA) requirements.

### SCOPE OF THE PROJECT:

The main aim of the project is to reduce the bandwidth cost of the multicast tree. The bandwidth cost is reduced by finding the shortest path. We implement Lagrangean Algorithm to find the shortest path.

## Module:

We have the following module to prove the effective resource allocation. They are as follows.

- Add nodes
- Resource allocation
- Source and Destination
- Lagrangean path

### Add nodes:

In this module we provide number of nodes we required in the network. Once our requirement is provided group of nodes get arranged in each cell randomly. Each cell accesses the nodes according to its capability.

## Resource allocation:

The resource allocation will find the nearest tower to the mobile. Then we will find the nearest tower to that. The main advantage of finding this is to use the available bandwidth. And by this way we will connect the mobile to the nearest tower. And by this way we will maintain good band width usage.

### Source and Destination:

In this module we are going to choose the source and destination nodes. Once the source node is entered, its position and the cell which contains the node is stored. Similarly the position of destination node is found in order to find the shortest path.

### Lagrangean path:

In this module we divide the problem into two sub problems. With the help of first sub problem we find the method of accessing the nearest cell. With the help of second sub problem the consumption of bandwidth is found. Finally the Lagrangean iteration process provides the shortest path to access the mobile.

## REFERENCE:

Irfan Ahmed, Amr Mohamed and Tarek foully and Y. Charlie Hu, “On the fairness of frequency domain resource allocation in wireless mesh networks- A survey”, IEEE Conference 2011.