

## **CHAPTER-6: FUTURE WORK**

The key activities which have to be undertaken to design a practical scheduler are mentioned in section 6.1 while section 6.2 indicates how the scheduler is useful for future WLANs.

### **6.1 Scheduler for 802.11ac**

- Scheduler design, implementation and validation using QualNet or by integrating NS3 with MATLAB
- Experimenting on various scheduler algorithms. A vast and complex area for research.
- Scheduler Integration with IEEE802.11e, WLAN standard for QoS
- Verification of performance by integrating with more rate adaptation algorithms.

### **6.2 Extending the Frame Work to Next Generation WLANs – 802.11ax**

The 802.11ac defines only DL MU-MIMO where the AP transmits concurrently to multiple clients. UL was also considered for 802.11ac but was estimated to be too complex to be addressed in a short period. As most of traffic flows in the downlink direction, so DL-MU-MIMO was good enough to meet the more urgent need. UL MU-MIMO is a key feature planned by the IEEE 802.11ax WLAN working group, with a proposed target of mid-2019/2020. [73]

Once both UL and DL MU-MIMO is available in 802.11ax, the scheduler will be almost as effective in assuring QoS guarantees as in LTE or WIMAX.

Papers which have been published for incorporating UL MU-MIMO in 802.11n and 802.11ac are provided in [74] to [83].