CHAPTER 7

CONCLUSION AND FUTURE WORK

7.1 CONCLUSION

MCMR-WMNs are projected as a key solution to the growing demand for multimedia networking and offering broadband access. The minimum cost and ease of installation of the WMNs makes the industry and academia to pay further attention to this promising technology. In WMN, the important issue is to allocate channel dynamically to provide an optimal network performance with increase in QoS demands. Thus, in this research work two dynamic channel assignment approaches have been proposed for multi-channel multi radio wireless mesh networks, which aims to provide an optimal network performance by ensuring QoS demands.

First, Quality of Service aware Dynamic Channel Assignment (QSDCA) approach has been proposed with Intelligent Agent Diverse AOMDV and Quality of Fairness development algorithm, which prioritizes the available channel for each node after every data transmission in the network. Then for the high priority channel some constraints have been checked utilizing the information like bandwidth availability, waiting time of the node and the servicing time of the next node in order to allocate the high priority channel between the pair of nodes.

Second, IIT-AOMDV based Traffic State Information Aware Dynamic Channel Allocation (TSIDCA) approach has been proposed with three levels threshold value algorithm, which adopts the cross layer design to
obtain the traffic state information of the channel. This information is utilized to categorize the channel as optimal, sub-optimal and non-optimal channel. Only optimal and suboptimal channel allocated to the link which is having the minimum traffic matrix value. The non-optimal channel is not utilized for a particular period of time. Utilizing an optimal number of channels with the least number of packet loss make this approach as an energy efficient approach. In addition, this approach also considers the wait time and service time while there is no availability of optimal and sub-optimal channels, which optimizes the delay metric. The comparative results have been provided using the NS2 simulation. The results shows that the proposed TSIDCA approach provides a better performance than the QSDCA approach by ensuring the QoS demands in terms of access probability, Throughput, transmission power, overhead, delay, droprate, retransmission probability, packet delivery ratio

7.2 FUTURE WORKS

The future directions include:

- In this work security consideration has not been considered, in future security consideration will be taken into account.
- In future, optimization techniques will be used to discover routes in order to improve network performance
- Investigating the incorporation of other network technologies with wireless mesh network that offers additional services to the users.