CHAPTER 5

CONCLUSION AND FUTURE RESEARCH

In this chapter, summarization of this research, highlighted contributions and the potential future research is discussed.

5.1 CONCLUSIONS

The key features like, characteristics of routing protocol, impact of mobility, networking issues and applications of MANET are described. A survey of various broadcast and multicast routing algorithms in terms of throughput and overheads, describing the principal minds behind each category is performed. The intensity and weakness of each of these systems are likewise examined. After all the analyses, it can be understood that there is a demand for a more effective algorithm to systematically minimizing impact of mobility and contributions of the research are outlined.

In the initial work of Localized tree topology has been created for 50 nodes (50 college students with tour environment) with T formation algorithms in MANETs. Such created tree topology network is analyzed with performance metrics of throughput and overhead with varying pause time 10-300 sec, wherein every 50 pause time is considered as a group. In this work 6 sets of RPGM groups are worked with broadcast and multicast domain to minimize the impact for group mobility in MANETs. In broadcast domain the new broadcast protocol AOMDV-ARS is proposed to minimize the impact of
route instability by using RPGM model in comparison with AODV to preserve network performance.

An IAODV-LRR broadcast protocol has been proposed to minimize impacts of mobility, link failure by performing well compared to the existing routing protocols such as DSR by using RPGM model. Simulation results indicate that the IAODV-LRR protocol is performing well compared to the existing routing protocols such as DSR.

The discussions on the performance of newly proposed multicast MAOMDV routing protocol, which minimize the impact of node density in multicasting environments by comparing with MOLSR is illustrated. The model is systematically analyzed for examining the mobility metrics, connectivity metrics and performance metrics with the help of a framework. Simulation results show that MAOMDV protocol performs well compared to MOLSR protocol.

In this thesis, a new multicast routing protocol MAOMDV has been proposed to minimize impact of group mobility based on broadcast protocol AOMDV, IAODV and the performance of different existing routing protocols such as AODV, DSR, and MOLSR in MANET using RPGM are compared in different network environment. MAOMDV is analyzed as the best protocol when throughput and overhead is taken into consideration. Simulation results show that MAOMDV protocol performed well compared to AOMDV-ARS and IAODV-LRR protocol and the protocol is analyzed using college students with tour environment. Finally, it is concluded that Multicast protocol is the best for group mobility based on the result of performance metrics in comparison with a broadcast protocol using RPGM model.
5.2 FUTURE RESEARCH DIRECTIONS

As a special type of network, MANETs has received increased attention in research recent years. There are many active research projects concerning with MANETs. This section focuses on a promising future research directions based on this current research. This work proposes further research into more efficient protocols or variants of existing protocols and network topologies. The emphasis is on protocols that could be suitable for the implementation of scalable system in high node density environments such as manufacturing or product distribution industries. In the future, there will be a scope to decrease ad-hoc or sensor network‘s overhead consumption by using the MAC layer power control techniques. Also the performance of MAOMDV protocol can also be tested in terms of mobility models such as Random Waypoint Mobility (RWM), Manhattan Grid Mobility (MGM) and Smooth Mobility (SM).