CHAPTER 5

CONCLUSION AND FUTURE WORK

One of the main factors that contribute to the performance of a mobile ad hoc is related to the routing mechanism. Routing algorithms usually assume a homogeneous network architecture where mobile nodes are equipped with similar communication capabilities, such as the number of wireless interfaces. This assumption usually reduces the performance and scalability of the routing algorithm in heterogeneous networks. In this thesis the HDSR protocol is proposed to improve the performance of flat DSR. Simulation results confirm that in comparison to flat DSR, HDSR dramatically reduces the protocol overhead within the network; it achieves throughput while incurring shorter queuing delays. As a result, under the HDSR architecture it possible to achieve shorter end-to-end delays.

Reducing power consumption in ad hoc networks has received increased attention among researchers in recent years. In this thesis, modifications were made to DSR to reduce the power consumption in the nodes operating in a MANET. The simulations presented here show the effectiveness of the modified protocol to save energy. The advantage in this approach is that the nodes require no additional information (for example, the positions of all the nodes in the network) required in other protocols designed for reducing power consumption in MANETs. The nodes also do very little extra computation to participate in the modified protocol when compared to some of the other approaches.
In this research work, Zone Routing Protocol is enhanced to be power efficient by reducing the transmission power depending on the location of the nodes with two zones. Power efficient zone routing protocol may be further modified by defining many numbers of zones according to distance between transmitting and receiving node.

While a number of factors were considered for this study, some others like wireless transmission speeds and ranges, effective node density, type of sources (whether UDP or TCP) and data packet size were treated as system and workload parameters. These will clearly have an impact on the overall energy utilization and they must be considered in a future study.