CHAPTER 8
CONCLUSION AND SCOPE FOR FUTURE RESEARCH

8.1 CONCLUSION

After a logical analysis and extensive simulation of the BBPER algorithm under different scenarios, it can be concluded that BBPER offers a robust scheme to afford security for mobile ad hoc networks and performs better than the trust-based protocols from which it was compared. Due to the absence of the need of promiscuous mode in the mobile nodes, the network has to bear a lot less overhead as compared to other secure routing schemes. This provides an inherent security to the network and the malicious nodes are easily exposed. This on the other hand reduces overheads and hence reduces the chances of unsecured routing through faulty nodes. Due to these challenges, the BBPER protocol works much better and provides more security than the other multipath routing protocols.

The VANET is widely used in many applications and at the same time it is vulnerable to several attacks. So, a new technique called as Dynamic Endorsement Scheme is proposed in this research work. This proposed scheme uses the authentication code to provide privacy of exchanged information in the network. That code is changed dynamically as the vehicle moves from one region to another.

In this research, a localized broadcast protocol RBDP is presented for VANET. It implicitly uses the store-carry-forward paradigm distinctive of delay-tolerant networks. The algorithm provides the position information of the one-hop neighborhood, as well as the latest received broadcast messages acknowledgments, to improve the protocol efficiency and reliability. The Simulation results obtained from NS2 shows that the proposed method outperforms in terms of packet delivery rate, packet loss rate and delay time. Thus, in the proposed method, the adversary cannot access the confidential information but at the same time safety messages can be received by all nodes without authentication.
8.2 SCOPE FOR FUTURE RESEARCH

In future, the research can extend to find the routing mechanism to send data packets with reliability. In VANETs, reliability is becoming a major issue with the increasing scales of the network. When the network size increases, the data has to travel long distances through other intermediate nodes when there is a need for such communication. In this case, there is a question of whether data would reliably reach the destination within the required time. To ensure reliable data transmission, link statistics, available best routes and connectivity checks can be evaluated in future works.

Although, in this research work, some of the security issues have been addressed, further anonymity protection to source and destination location could be provided to render security against timing attack and to counter intersection attack.

Energy expenditure and conservation is becoming a major concern, especially with the increase in the consumption of natural resources. Since almost all nodes present in Pervasive Networks are battery equipped, there has to be a consideration for conserving battery energy to prolong the lifetime of the network. Vehicular ad hoc networks use vehicular batteries that use resources like electricity, petrol and diesel for their functioning. Due to the increasing demands in the production of non-renewable energy resources, energy needs to be conserved while performing routing operations in the network. Future works can be extended to considering energy while routing along with the current solutions provided.

The future scope of this research work and the further suggestions to this research work may aim to ensure the rise of current technology standards, to help make this world a better place to live.