CHAPTER 7

CONCLUSION AND FUTURE WORK

Dynamic topology property of MANET has broken routing paths frequently. It may degrade the packet delivery ratio and performance of the network. MANET needs efficient algorithm for improving the performance of the network in the term of connectivity of network organization, link scheduling, and routing. The efficiency of the routing protocol is used to identify the optimal path based on metrics like route computation, shortest path between the source and destination for all static networks. In MANET, optimal path identification is not as much an easy process like static networks. MANET routing protocol will consider so many parameters like extended power, quality of wireless links, path losses, fading, interference, and topological changes. These are considered for finding optimal path for developing new routing algorithms. However, multipath selection is a great challenging task to improve the network lifetime.

7.1 CONCLUSION

The detailed literature survey reveals the advancement in the field of increasing reliability of data transmission by providing load-balancing among the nodes. Hence, the study is focused on the various multipath routing protocols of MANET along with Swarm Intelligence. Swarm Intelligence techniques that give a solution for compound optimization problems that are not very easily handled by other methods. Particle Swarm Optimization method takes advantage of the common intelligence and information
involvement capability of swarms. PSO develops the model of collective communication for the specified solutions of solid and optimization problems. The research gap is identified in Chapter 2 and the objective of the study is established.

In Mobile Ad-hoc Networks, all operations in the Network Routing will be done using disjoint nodes. Error Tolerability will be reduced by using the Node Disjoint Concept. The path discovery procedure of the proposed algorithm has been superior in a way that neither it needs some uniform directional device antennas to aware disjoint paths to send investigation packets during the path discovery process to find the number of active neighbours. Fault-Tolerant Disjoint Multipath Routing Algorithm will increase the Network Capacity by reducing end-to-end delay within the disjoint nodes. Disjoint multipath routing algorithm is discussed in Chapter 3.

Chapter 4 discussed Link Failure Recovery Algorithm, Best Forwarder Selection Opportunistic Routing protocol is designed to achieve maximum reliability in a mobile ad hoc network by attractive packet delivery ratio. In the network model, the nodes are placed in random waypoint model with dynamic topology. The routing protocol calculates the distance and link metrics to enable best forwarder selection. On delivery a forwarding failure signal, a Trustworthy Link Failure Routing Algorithm is used for the link failure between source and the destination nodes dynamically. The multipath is identified between the source and destination for finding optimal path. When a probable forwarder is created, the normal Best Forwarder Selection Opportunistic Routing algorithm is invoked. The Polynomial time for the Forwarded selection has been reduced by using the Trustworthy Link Failure Recovery Algorithm. It also reduces the Number of Link Failures.
In Chapter 5 the prime objective of the EMPSO scheme is discussed briefly. EMPSO is used to develop an Energy-aware multipath routing based on Particle swarm optimization in Mobile Adhoc Networks. Development of reliable routing with the use of PSO is conversed. PSO mechanism is helpful to reveal the optimal route to minimize the routing overhead and ensure the reliability in MANET. CRNN is used to find multipath among nodes using reliability measure such as transmission cost, energy factor and optimal traffic ratio. A packet can be forwarded through a selected optimal path. This is a novel way to enhance reliability in routing among nodes. It emphasizes ensuring reliable routing during data transmission when it follows the PSO mechanism. Simulation results show that the proposed EMPSO scheme reveals good results compared with related schemes.

In Chapter 6 the Fuzzy Enabled EABA Algorithm is used to find the best broadcasting methods, which is compared with the other algorithms with the use of various parameters like Reachability, Jitter, Packet Delivery Ratio, node rebroadcasting and packet overhead. Experimental results confirm Fuzzy Enabled EABA Algorithm performed better than the existing algorithms.

7.2 FUTURE SCOPE

Advanced multipath routing algorithm can be developed or merger with some optimization techniques like ant colony, artificial Bee Colony can be optimized the path and packet delivery ratio. Further the broadcasting method combined with PSO multipath routing for MANET, so that energy, packet delivery, and QOS parameter will be considers for best path for the entire MANET multi path network environment.
Any future study may take into account incorporating the following suggestions for improvement:

Integration of multipath routing into the current single path routing paradigm, the synchronization of the packets among the multiple paths and the interfaces of multipath routing protocols to other layers of protocol in the network stack.

The energy based extensions can contribute in supporting a robust routing protocol by reducing the energy consumption of mobile nodes for improved network survivability. Also analyse the energy conservation of nodes under scalable conditions and for different traffic patterns.

A comparison among the existing solution based on attribute may improve the multipath routing main element.

Finding braided multipath are a viable alternative for energy efficient recovery from isolated and patterned failures. Thus improve disjoint multipath routing.

Development of a new algorithm is used to discover the distinct path between source and destination nodes by using Omni-directional antennas, to send information through these simultaneously. This proposed algorithm creates a significant improvement in energy efficiency and reducing end-to-end delay.

Load balancing is of special importance in MANETs because of limited bandwidth between the nodes.