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Next Hop Selection In Diplomat Path For Opportunistic Routing

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***Abstract:** The current availability of small, low power beneficiary and technique for finding comparative coordinates based on signal strength. It is a position based Opportunistic routing protocol in which several forwarding candidate supply the packet that has been acknowledged and if the best forwarder does not forward the packet in a particular time slots, then suboptimal candidate will take turn to forward the packet This paper addresses the problem of delivering data packets for highly dynamic mobile adhoc networks in a reliable and timely manner We propose a position based opportunistic routing with new forward ing technique . When a data packet is sent out some of the neighboring nodes that overhear the transmission will serve as forwarding candidate which ensure reliable data delivery have been proposed. We propose a next hop selection mechanism which takes the assorted environment and consideration. A minimum hop will be selected for selection list from each neighbor list to the destination. Through performance analysis we show that our energy efficient protocol will exist existing protocol.*

***Keywords:** Multihop routing, Mfr, forwarding technique, opportunistic routing, selection*

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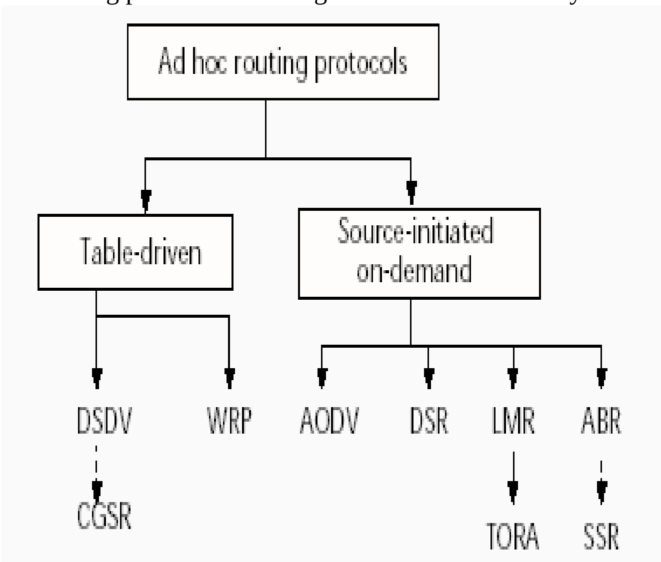
I. INTRODUCTION

A Mobile ad hoc network (MANET) is wireless mobile network whose nodes communicate with each other in the absence of a fixed infrastructure. Communication takes place over a wireless channel where each host has the aptitude to correspond with others in neighboring nodes. In Adhoc network a message sent by a node reaches all its neighboring nodes that are positioned at distance up to the transmission radius Because of the limited transmission, radius, and the routes between nodes are normally created through several hops. Two nodes A and B where R is the transmission radius that is equal for all nodes in the network dissimilarity of this model include unit graph with obstacles and mini power graph where each node has its own transmission radius and links are allowed only when bidirectional communication is possible. The distance between neighboring nodes can be estimated on the basis of incoming location of the nodes may be available directly by communication with a satellite Now a days network is a traditional dynamic topology Which is designed according to its requirements . We also have table driven and on demand routing protocols such as DSDV, AODV, DSR etc are quite susceptible to nod e Mobility. Here the route are predetermined in end to end routing while the network is changing faster it is very difficult to maintain deterministic route. Geographical routing uses location information to forward data packet in a hop by hop routing fashion. It selects next hop forwarder with largest positive progress towards destination. The concept of such multicast like routing strategy has already been demonstrated in opportunistic routing. Recently location based opportunistic routing protocol is proposed in which produces a new technique in forwarding candidates cache the packets that has been received using MAC interception. The scheduler goes in rounds. Forwarders transmit in order such that only one forwarder is allowed to transmit at any time. The other forwarders listen to the transmissions to learn which packets were overheard by each node. In fact due to the broadcast nature of the wireless medium a single

Packet transmission wii lead to multiple reception. If such transmission is used as backup the robustness of the routing protocol can be significantly enhanced.

In order to acquire the inter node loss rates periods network wide measurement is required. One of the main reason is due to that predetermination of an end to end route before dta transmission. Owing to the chsnging topology in network maintain a different topology. Simply, routing is to make a decision for forwarding a packet from source to destination & the need of routing can be clear with the help of following example. In the case where only two hosts, within the transmission range, are involved in the ad hoc network, no real routing protocol or routing decisions are necessary.



II. RELATED WORK

In [1], Zhong et al. proposed a new metric—expected any-path transmission (EAX)—that generalizes ETX to an OR framework and proposed a candidate selection and prioritization scheme based on the new metric. They analyzed the efficacy of OR by using this metric and did a comparison using the link-level measurement trace of MIT Roofnet [2]. In a distributed algorithm for computing minimum cost opportunistic routes, which is a generalization of the well-known Bellman–Ford algorithm, is presented. The authors also alert about the risk of using too many relay candidates. In [3] Li et al. introduced a new metric—Successful Transmission Rate (STR)—for choosing the forwarder list. They considered multi-links contribution instead of one best link information used in [4]. They proposed a fair OR (FORLC) protocol that used STR as a metric to select the forwarder list. In [5] the key problem of how to optimally select the forwarder list is addressed, and an optimal algorithm that minimizes the expected total number of transmissions is developed.

Z. Ye, S. Krishnamurthy, and S. Tripathi [5] have described the Location services are used in mobile ad hoc and hybrid networks either to locate the geographic position of a given node in the network or for locating a data item. One of the main usages of position location services is in location based routing algorithms. In particular, geographic routing protocols can route messages more efficiently to their destinations based on the destination node's geographical position, which is provided by a location service. A content location service provides to the requesting node either the requested data itself or the identifier of the node that stores this data. Sometimes the position of the node that stores the data is also provided Stojmenovic address an problem of designing location update to provide accurate Destination information and enable efficient routing in mobile adhoc network appears to be more difficult than routing itself.

III. OPPORTUNISTIC ROUTING

To enhance the efficiency of successful data transmission in adhoc network location based multihop forwarding using a mathematical model has been proposed. It is composed of two steps the next hop node forwarding and the

Selecting next hop transmission.

- ✓ Next hop node forwarding step data transmission either through direct delivery path or multihop path is decided.
- ✓ On the basis of energy, mobility, density and bandwidth nodes are selected for next hop forwarding

NEXT HOP FORWARDING

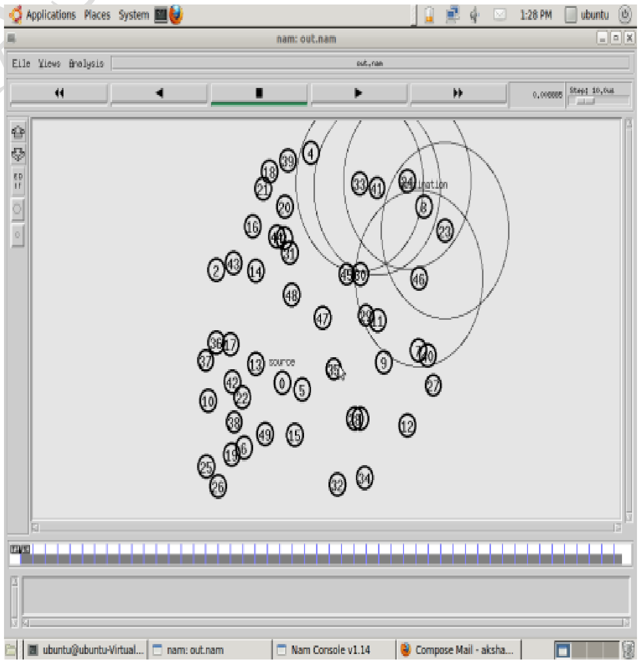


Figure 1: Node is forwarding a packet to a remote destination with a chosen forwarding candidate set at some transmission rate

The basic module of opportunistic routing is shown in Fig. 1. Assume node is forwarding a packet to a sink/destination. We denote the set of nodes within the effective transmission range of node as the neighboring node set of node. Note that, for different transmission rates, the corresponding effective transmission ranges are different, then we have different neighboring node sets of node, and the PRR on the same link may be different at different rates. We define

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the set Fi := hni1 , ni2 ...nir i shown in Fig. 1, as forwarding candidate set, which is a subset of Ci and includes all the nodes selected to be involved in the local opportunistic forwarding based on a particular selection strategy. Fi is an ordered set, where the order of the elements corresponds to their priority in relaying a received packet.

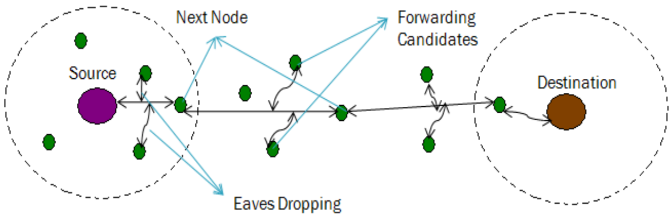
To forward all the selected nodes let us take a scheme with a formula which selects only the nodes directly focusing the designation so that number of nodes will be Reduced and the delay time will be reduced. Message successive rate will also be increased,

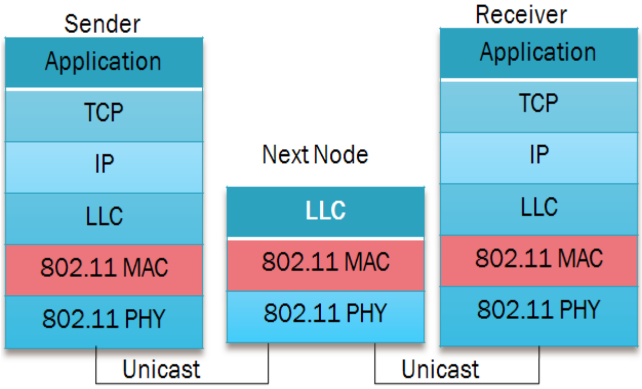
IV. SELECTING NEXT NODE TRANSMISSION

We propose an energy-efficient geographic opportunistic routing framework which is based on opportunistic routing but more judiciously selects a subset of the available next-hop neighbors as the forwarding candidates to strike a good balance between the packet advancement and energy if it receives an acknowledgement packet from the destination. st. As the proposed method forwards a data in broadcast transmission, no transmission control is employed so data can be distributed in all direction by every neighboring node. The process of generating a forwarders list for the source node is explained here. The source can receive the location information of the destination In order to make a forwarders list the source also calculates between each one hop Neighboring node. Each intermediate node in the transmission path also uses the same method to selects the next intermediate forwarder towards destination. The node with lesser distance is choosen as the next forwarder towards destination. This mechanism can be deployed without complex modification to MAC protocol. The concept of in-the-air backup significantly enhances the robustness of the routing protocol and reduces the latency and duplicate forwarding caused by local route repair.

V. ARCHITECTURE OF POSITION BASED OPPORTUNISTIC ROUTING

The following figure shows the Architecture of the Position Based Opportunistic routing (POR) system. In the Position Based Opportunistic routing (POR) system, the source uses GPS to find the exact location of the destination. In order to find a route towards the destination, the source uses greedy algorithm (B. Karp and H.T. Kung 2000) (Guoliang Xing et al., 2006) which finds the farthest node in the positive progress towards the destination in the coverage area of the sending node and forwards the data packet by using the MAC unicast. For the purpose of back-up in case of the packet drop and retransmission of data the greedy node elects 2 forwarding candidates which can overhear the data transmitted to the greedy node (B. Karp and H.T. Kung 2000) (Guoliang Xing et al., 2006). In our Position Based Opportunistic routing (POR) system only the source and the greedy node maintains the forwarding table which reduces the network traffic.





In case a communication In the Position Based Opportunistic routing (POR) protocol (POR), the throughput of sending bits increases linearly with the increase in the end-to-end delay. This shows that the end-to-end delay is not a problem in case of POR and so, if a node moves out of the coverage area then an efficient VDVH mechanism is followed by POR, to route the packets safely to the destination.

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VI. PERFORMANCE EVALUATION

This section the performance of the proposed method in adhoc network through simulation experiments using ns-2. It demonstrates the basic communication performance of the proposed Location based multihop forwarding Method and contention based geographical forwarding technique explains the performance for average number the neighbouring against LMHF and CGF methods. To make a communication with destination the source must first obtain the location information of the destination. In this paper it is assumed that the source obtains the locations information of the destination by broadcast AODV message. After obtaining the location information of the destination the source calculates the distance to the destination. In order to make a forwarder list, the source node also calculates the distance between each one hop neighboring hop. Each intermediate node in the transmission path also uses lesser distance is choosen as the next intermediate forwarder and identified node is updated in the forwarder list. In this way data reach the destination .if more neighboring node is selected this will increase the network load, but the proposed method restrict the number of neighboring nodes. This result is measured in ns2, it demonstrates the basic communication performance of the proposed forwarding techniques. Simulation study is done by ns2 with several mobile nodes placed randomly

parameters	Value
Number of Nodes	200
Transmission range	225m
speed	10,20,50,100
Network Topology	800X800
Transmission signal power	0.28w
Propagation model	Two ray ground
Simulation time	200 sec

Table 1: Simulation Parameters

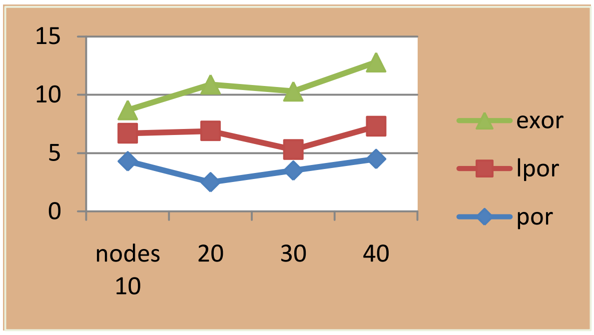

Figure 3: Delay Throughputand Average Neighbours

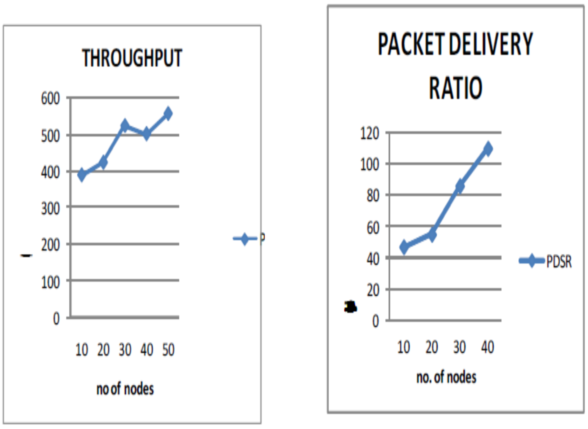

Figure 4: Comparison graph

As the number of nodes increases the delay and average neighbors also increases. The main reasons is that the last hop progress where a packet is delivered to a destination, is often less than the progress in the previous hops, where a packet is greedily forwarded. As a summary Por outperforms AOMDV and GPSR in packet delivery ratio, end to end delivery. Thus we can minimize the energy level By using a forwarding technique. When one next hop nodes are established the reliability of packet delivery will improve the cost of more resources.

VII. CONCLUSION

In this paper a new mathematical based forwarding technique is evaluated to enhance reliable communication is studied in adhoc network. The proposed method first employs next hop node forwarding to identify whether to transmit directly or through multiple hops. In addition the proposed method uses the location information and transmission probility of its own intermediate nodes to efficiently delivery packets to the destination. In this method all the intermediate nodes update itself with the location information periodically and update in the forwarders list. Thus the proposed method can deliver data without having to share the communication quality of each node over the entire network. The communication performance is also simulated through set of experiments.

The nodes of highest power of reception is chosen as the best forwarder. These noes are selected to be nodes that lie closer to the best forwarder for the better eavesdropping. Hence future work can be done with reducing the hop count that ensure a lower end to end delay.

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