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# Enhanced Routing Algorithm To Reduce Number of Transmission In Manet

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**ABSTRACT**

To develop a new efficient broadcasting algorithm using few multiple paths selected to finding minimum path, Non fading channel and trusted node are transmission. It aims at finding new efficient broadcasting technique that batter bandwidth utilizations; reduce the number of dropped packets on fading signal and improving the packet delivery in that channel path. **Methods/Analysis**: Signal strength measured to communication of neighbor node without affect the fading the signal to noise ratio and in that path also find the packet delivery ratio to be communicated in trusted system. **Findings**: Efficient broadcasting in MANET has been improved quality of service such as avoid redundant information, error in the channel and remove untrusted nodes. So that improve reliability and overall delay has been minimized. **Conclusion/Application**: We proposed n new efficient broadcasting path selection algorithm which involves bandwidth utilization, signal strength level analysis non fading channel and remove untrusted nodes.

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## INTRODUCTION

In (Broch, J. *et al*., 1998) Mobile ad hoc network is an autonomous system of mobile nodes connected by wireless link to form a temporary network. MANETS need not require any static infrastructure like base station. The nodes in MANTS communicate and cooperate with each other to achieve goal. These nodes are dynamically moved from one place to other. So they form self-organized, self-configuring and self administering.In MANETS routing protocol communication take place single hop and multi hop. The problem in MANTS multi hop transmission can be carried out through the flooding. The target reduces number of transmission deciding on the path to avoid redundant information, bandwidth utilization and delay. This is achieved by using mechanism such as reduce the number of dropped packets and improving the packet delivery in the channel path.

### *II.Related Works:*

In (Mahesh kumar yadav *et al*, 2011) proposed broadcasting in AODV Routing protocol of MANETS. Broadcasting technique using route request all neighbor node from the source, in that neighbor node route request to all in that neighbor node, it reaches up to destination node. If route can be reply only one path selected in the base path. But there still problem route request to broadcasting carried out through the flooding, redundant information, delay. In (Shalini Sharma, *et al*., 2013) proposed reducing packet loss in MANET. Synchronizing between nodes send the signal, if sender node send the message to receiving node, the receive node is receive the signal read the transmission of message otherwise wait for some time. But there still problem signal strength not finding to send message before it is transmission.

In (Rachelin Sujae, P. *et al*, 2014) proposed quality of service based routing in MANETS using route handoff. Routing technique used to measure of link stability and fading the channel of the path. But there still problem due to radio link fluctuation signal strength affect to the noise. In (GRIFFITHS, N., *et al*., 2008) proposed trust based ad hoc on demand routing protocol in MANET. Trust based technique using throughput and finding the malicious nodes can easily to makes an attack in the MAANET environment. But problem not find the error in channel and delay. In (Gade Srinivasa Reddy, B.S. Ms Malleswari *et al*., 2013) proposed hop level resilient multipath routing strategy for Mobile ad hoc network. Resilient routing technique single route discovery from source to the destination. Then each route should be cache for using it again, when the

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similar route is needed. But problem route discovery all multiple path selected instead of few multiple path, the path include faded channel and malicious nodes can easily to make attack to avoid.

### *III. Problm Identification:*

1. Node can broadcast a message to all other nodes in the network. Multi-hop message transmission can be carried out through the FLOODING.
2. Major drawbacks of packet flooding are Increase redundant information, Bandwidth utilization, Delay
3. During the transmission of the message, there may a path loss and multipath fading due to radio link fluctuation.
4. In the absence of the centralized administration, a Malicious nodes can easily makes an attack in the MANET Environment

### *IV. Proposed Work:*

- ✓ Reducing the number of transmission by multicasting message instead of broadcasting. There-by it reduces redundant information, bandwidth utilization and also delay.
- ✓ Few neighboring trusted nodes are selected for the transmission based on their behavior. Hence it eliminates the malicious nodes and guarantees the secure delivery of message.
- ✓ During the transmission of message through the neighbor nodes there is a chance for the radio fluctuation in the channel path. If there is a fading in that channel, then the channel path will be rejected otherwise selected for the transmission of the message. Hence it reduces path loss and Multipath fading.

### *4.1 Signal strength:*

Signal strength must be measure based on the coverage area, as the signal strength decrease proportionally to the square of the distance. In our proposed system signal strength can be assign some threshold value, this value greater then strength of signal then node can be communicated with in neighbor node.

### *4.2 Signal to noise ratio:*

Signal strength can be deviation in the transmitting air interface, there may be chance for occurred in any other obstacles it can't b penetrate the wall. So that strength of signal must be degrees or path loss. In our proposed system to measured signal to noise ratio that can be affect radio signal can pass through air

Interface from transmitting signal to the receiving signal. In that air interface deviation of the reduction affecting a signal over certain propagation media. Fading in the node rapid fluctuation of the amplitude, phase or multipath delay of a radio signal over short period.

S/N=20 log 10 (VS/VN)
Here S/N=signal to noise ratio.
VS=Signal strength (micro volts)
VN=Noise level (micro volts)

1. IF VS=VN then S/N=0, the noise can be affect signal unreadable.
2. If VS<VN then the signal is much weaker and noise can be affect then signal unreadable.
3. If VS>VN then the signal is much stronger then signal can be readable.

### *4.3 Detection of malicious node:*

Trusted nodes are selected for the transmission based on the past behavior. Hence it eliminates the malicious node and guarantees the secure delivery of message. In our proposed system past behavior of node measure packet delivery ratio. When Packet Delivery can be assign some other threshold value, node get to be greater than ratio value then it said to trust.

### *V.Algorithm For New Efficient Broadcasting For Slection Of Best Path:*

Step1: Assign threshold value the node signal strength and packet delivery ratio to be transmitted.

Step2: route can be discovery establish new efficient broadcasting to select the best path.

Step3: source select from the next hop neighbor node route request

3.1 if (node signal strength> threshold value)

Signal strength depends upon the signal to the noise ratio.

3.2 If (signal== weaker) it can be unreadable.

3.3If (signal==stronger) it can be readable.

Step4: After finding signal strength and it's also found that neighbor node in that past behavior.

If (packet delivery ratio> threshold value)

Threshold value= (∑number of packet send/∑number of packet receive)*100;

Select the neighbor node based on this condition, it reaches the path can be established at the destination place.

Step5: select this conduction path can be establish route discovery.

5.1 reduces the number of transmission by only few nodes instead of all node selected.

5.2 reduce redundant information, bandwidth utilization and also delay.

### *VI.Routing Protocol Vs. Efficient Broadcasting In Manets:*

#### *6.1 Routing Protocol:*

- ✓ All Multiple paths selected to finding minimum shortest path.
- ✓ Path include faded channel.
- ✓ Includes both trusted and untrusted nodes for transmission.

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***6.2 Efficient Broadcasting:***

- ✓ Few multiple paths selected to finding minimum path.
- ✓ No faded channel.
- ✓ Only trusted nodes for transmission

***VII.Block Diagrams Of New Efficent Routing Algorithm:***

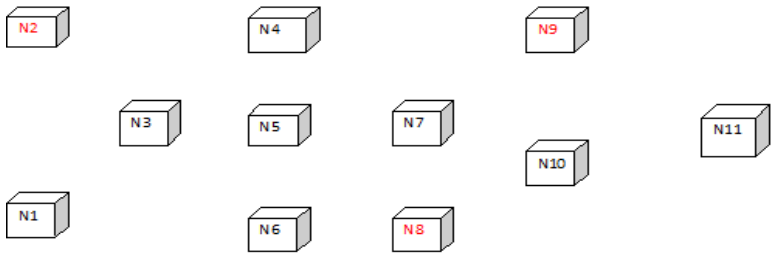


**Fig.1:** Finding all neighboring nodes from source n3.

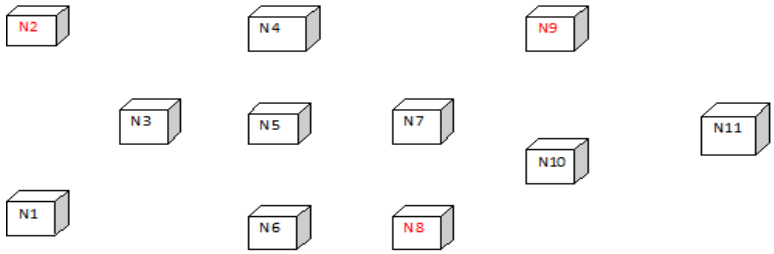


**Fig. 2:** Finding the malicious node in the path.

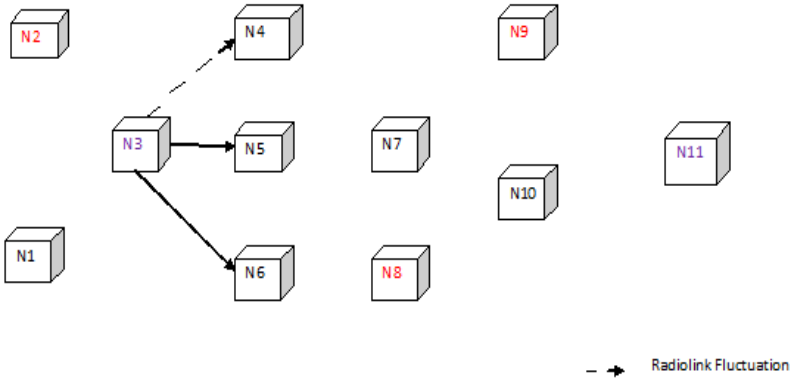


**Fig. 3:** Finding radio link fluctuation from Source node N3 in the channel path.

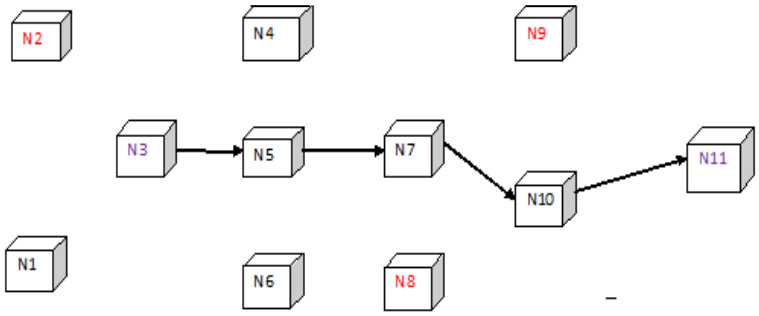


**Fig. 4:** Path Establishment using Efficient broadcasting algorithm

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## *VIII.Simulation Results:*

### *8.1 Simulation model and parameters*

Ns-2 (Network Simulator,http://www.isi.edu/nsnam/ns) is used to simulate efficient broadcasting algorithm to reduce the number of transmission in MANETS. In the simulation, the connection pattern random and connection type constant bit rate. The simulation and parameters are summarized in Table1.

**Table 1:** Simulation parameters

| | |
|---|---|
| Network type | Mobile |
| Connection pattern | Variable |
| Packet size | 300 bytes |
| Duration | 150 s |
| Connection type | CBR/UDP |
| Simulation area | 150,300,450,600,750 |
| Number of nodes | 5,10,15,20,25,30 |
| Pause time | 0s,20s,50s,90s,120s,160s |

### *8.2. Performance metrics:*

1. Compare our efficient broadcasting algorithm with the routing protocol. A number of nodes vs Route Request in MANTS Nodes are can be increased the route request also increased. So that Increase redundant information. But efficient broadcasting reduces number of transmission based on the condition to reduce route request and also efficient bandwidth utilization.

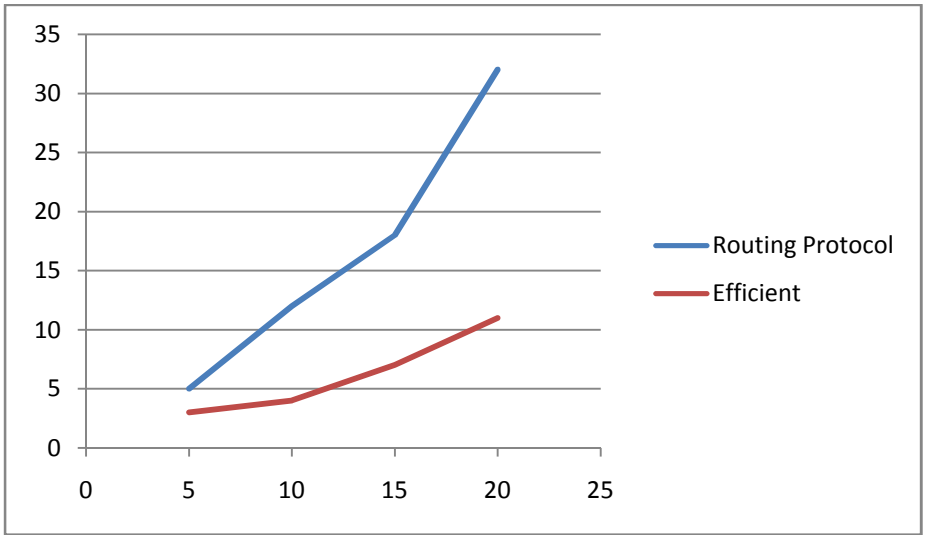


**Fig. 5:** Number of nodes vs. route request

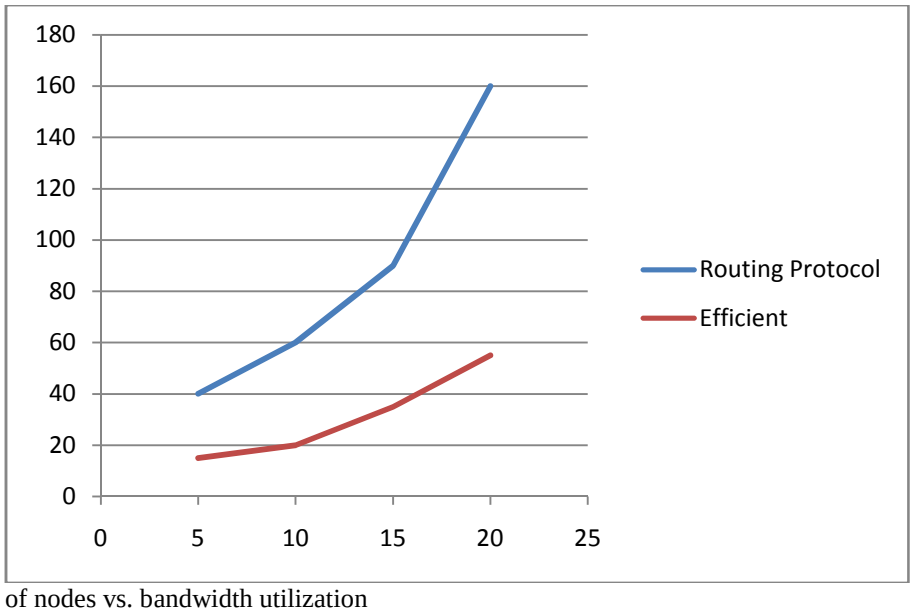


**Fig. 6:** Number of nodes vs. bandwidth utilization

2. Packet delivery ratio increase efficient broadcasting algorithm because before transmission each neighbor node must be check signal strength, fading of error channel and trusted node to delivery path established. So that all the kinds of node must be check it can easily to delivery in the MANET.

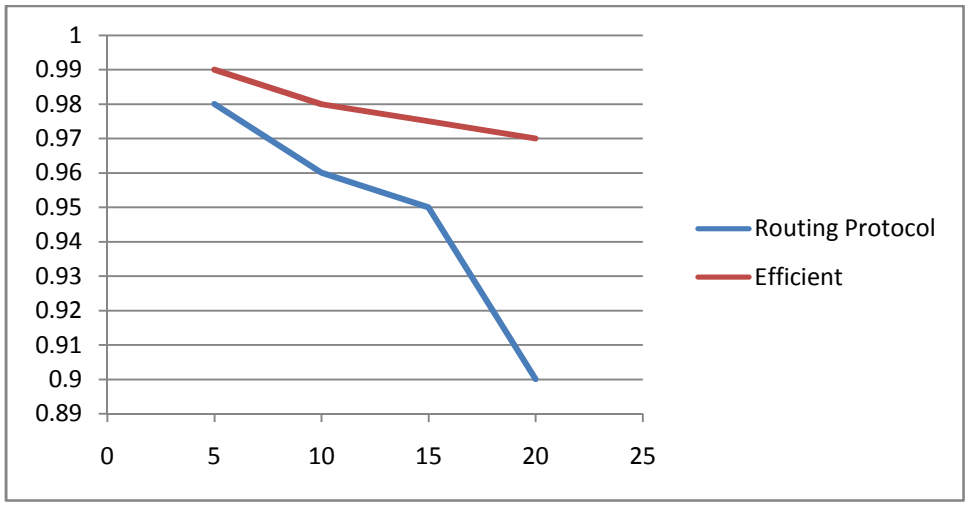


**Fig. 7:** Number of nodes vs. Packet delivery

***IX. Conclusion And Future Enhancement:***

In this paper, we proposed an efficient broadcasting algorithm for the selection of best path. The selection of path includes the criteria like signal strength, non fading channel and trusted node. So that it will provides reduced number of transmission by multicasting instead of broadcasting. This broadcasting algorithm reduces redundant information, bandwidth utilization and improves the reliability. This proposed algorithm focuses on finding efficient broadcasting algorithm only for the single path. This research helps to extend from single path to the multiple paths in future. Additionally can apply various load balancing techniques to improve the quality of entire path.

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