# Performance Evaluation of AODV and DSR on the Basis of Different Transmission Powers

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### Abstract

A MANET Is Defined As A Collection of Wireless Mobile Nodes That Are Capable Of Communicating With Each Other Without The Use Of A Network Infrastructure Or Any Centralized Administration. Nodes Are Connected By A Wireless Channel. There Are Need Of Routing Protocols For Communication In Such Networks. The Work Of Routing Protocol Is Efficient And Timely Delivery of Message. MANET Offers Versatility for Certain Environments and Certain Applications. In This Paper The Comparison of AODV And DSR Has Analyzed At Different Transmission Power.

Keywords: AODV, DSR, MANET, Qualnet

### 1. Introduction

MANET Are Composed Distributed System Without Any Fixed Infrastructure Or Centralized Administration. In These Systems Nodes Can Be Freely And Dynamically Into Arbitrary And Temporary Ad-hoc Networks Topologies Node Communicate With Each Other Directly Or By Intermediate Nodes .Relaying Packets To The Neighboring Nodes Along With The Path Source Node To The Destination Node Is Done By Intermediate Nodes. MANET Have Many Applications Such As Emergency Operations And Military Battlefield Applications, Data Acquisition Operations In Hostile Terrain. MANET Are Featured By Limited Bandwidth, CPU And Battery Resources. These Features Put Special Challenges Routing Protocol Design For Manets. Routing Is The Act Of Transferring Information From Source Node To Destination Node. Routing Basically Involves Two Activities; Determining Optimal Path And Transferring The Packets. Depending On The Network Structure Routing Protocols Are Classified As Flat Routing, Hierarchical Routing, Geographic Position Assisted Routings. Here AODV And DSR Routing Protocols Are Compared. AODV Is An Improvement Of DSDV To On Demand Scheme. It Minimizes The Broadcast Packet By Creating Route. Each Node Should Maintain Route Information Table And Participate In Routing Table Exchange. Whereas DSR Has One Of The Important Features That Is Using Source Routing. Each Packet To Be Routed Carrying In Its Header The Complete Ordered List Of Nodes Through Which The Packet Must Pass. The Properties Of Dynamic Source Routing And Destination Sequenced Distance Vectoring Are Combined into Ad-hoc On Demand Distance Vector. Since mobile node in MANET depend on limited energy resources. A major change of MANET routing protocol is to faces these resources constrains. To transmit packets needs specific transmission energy on the other hand to receive packets needs another specific amount of energy which is consumed even when the packet is discarded. Mobile node also need limited energy while listening when no message are being transmitted and they need a smaller energy when the communication is not possible and node is not capable in detecting the signals.

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## 2. Simulation and Result

No. of nodes	50
Speed	Fixed(10m/s)
Simulation time	150s
Mobility	Random waypoint
Item to sent	100
Item size	512
Terrain size	1500x1500
Routing protocol	Aodv, dsr

Simu	lation	data:
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Comparative analysis of AODV and DSR at different power is done on the basis of throughput, average end to end delay, and jitter.

THROUGHPUT:- it is the average rate of successful packet delivery per unit time.



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AVERAGE END TO END DELAY:- It is the average delay time when data packet are sent from source to the destination.



AVG. JITTER: - variation in the time between packet arriving caused by network congestion ,timing drift or route changes.

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By observing the graphs it is clear that throughput at 10dbm power is not as stable as at 16 dbm power for both AODV as well as for DSR. Therefore packet transmission at low power is not much efficient. hence we can not reduce the power much because at low transmission power large number of packets drop where as at the transmission of 16 dbm we observe that less packets drop for aodv where as large packet drop for dsr.

### 3. Conclusion

it is concluded that if aodv and dsr routing protocol are used for packet transmission at different transmission power than aodv is better to use as low packets drop in the aodv . in our future there is more work in the field of efficient power transmission in mobile adhoc network.

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