

## ABSTRACT

Mobile Ad Hoc Networks (MANETs) are the collection of mobile nodes which can form randomly and dynamically without need preexisting network infrastructure that nodes can be arbitrary located and can move freely. The challenges research in MANETs routing is topology changes continuously. Its caused paths which initially efficient can quickly become inefficient or even infeasible.

AODV and DSDV routing protocols have weaknesses for mobility network, which is often happens to drop a link. It caused source node should build routing again from scratch. So, for conditions simultant delivery of data will caused decreased dropped packets values, and resulting throughput values down. Some weakness in AODV and DSDV routing protocol, can be assisted to take advantage of the characteristics of the ant collony optimization.

In this thesis, make a comparing AODV and DSDV fairness and performance using Ant Colony Optimazation in MANETs base on prevoius research. In our simulation result shown modification conventional routing protocols AODV and DSDV with the added Antnet Algorithm can affected to better performance. The throughput values increased about 6,367% - 13,02% for AODV and about 0,68% - 5,47% for DSDV. But mke a change delay time worst about 5.23% - 6,02% for AODV and 60.88% - 65.82% for DSDV. AODV routing protocols performance is still better than DSDV routing protocols even added Antnet Algorithm to them.

Index Fairness AODV more fair then DSDV even added Antnet Algorithm. It shown at Index Fairness graphic, distributed Index Fairness about 1.00 for AODV which added Antnet Algorithms.

**Keyword** : mobile ad-hoc networks (MANETs); throughput; delay time; routing overhead; Index Fairness