

Mobile Ad-hoc Network (MANET) owing to their very open characteristics are being very attractive and adaptive. With the openness comes security issues to be dealt. The most usual attack in mobile ad-hoc network is the black-hole attack. It advertises false path as shortest and newest to the destined node. On gathering packets containing data will drop them and does not send it to the destination. This paper proposes an algorithm to overcome such an attack under Ad-hoc On-demand Distance Vector (AODV) routing protocol in MANETs. The proposal aims to detect and avoid black-hole attack by using the parameters of AODV routing protocol in its enhanced form of route recovery. The proposed algorithm has two different scenarios, where first comes the detection then the avoidance. The simulation results are obtained from NS -2 to authenticate the effectiveness of proposed technique in comparison with the existing protocols in the existence of black-hole attack with respect to change in simulation end time and active number of attackers. The implementation is assessed based on delay, delivery ratio, drop, overhead, throughput and packet forwarding ratio. The results obtained from network simulator are mapped to form a dataset, which is then validated on a modelled fuzzy inference system using MatLab software.