

ABSTRACT

Mobile ad-hoc network is a connection between mobile nodes that uses wireless media. This network does not have an administrative center so that each node on the network in addition to functioning as a sender and receiver of data information also functions as a router that will look for route information from the sender to the receiver. The topology of an ad-hoc network is always changing because the nodes move dynamically. The topology changes resulted in the repetition of route information searches. The process of finding route information requires a routing protocol. The routing protocol-enabled nodes must maintain the energy usage in the route-finding mechanism. Choosing the right routing protocol can be a solution to make energy use by nodes more efficient, especially in ad-hoc networks. In this study, a routing protocol in the reactive category is used, namely DSR (Dynamic Source Routing). This study aims to determine the performance of energy consumption, remaining energy, and PDR with scenarios of increasing node movement speed and network area. Based on the research results, it is known that the DSR routing protocol can handle changes in the speed of node movement and network area related to energy consumption and remaining energy. This is evidenced by the results of research showing that with faster node movements and wider areas, less energy is required. Meanwhile, regarding the success of packet delivery, the DSR routing protocol cannot handle changes in the speed of node movement and network area. This is evidenced by the results of the packet delivery ratio measurement which shows that with faster node movements and wider areas, many packets are not successfully received.

Keywords: MANET, reactive routing protocol, DSR, energy consumption, Network Simulator 2.