ABSTRACT

MANET is a temporary network consisting of a collection of mobile devices (mobile nodes) that exchange information and are connected by a wireless network. Nodes in MANET function as senders, receivers, and also as routers. MANET networks can be built quickly to support emergency needs such as natural disasters, search and rescue victims, or as implementation in other research. Video streaming application is a multimedia application that has accurate visualization so that it can help emergency needs and provide the information needed to describe a situation. The use of video streaming applications also requires a wide bandwidth and minimum delay to transmit. The mobility of nodes in MANET causes rapid network changes and can affect data transmission between nodes, thus requiring a special routing mechanism because each node acts as a router. This research was tested using AODV (Ad-hoc On-demand Distance Vector) and DSR (Dynamic Source Routing) routing protocols on MANET using a video streaming application. The test uses a scenario of increasing the number of nodes and the speed of moving node with Network Simulator 2 (NS-2) software. Based on the results obtained in this research, in both scenario, the DSR protocol is better to the delay parameter with an average value of 105.395 ms and the packet loss parameter with an average value of 0.173 %. The AODV protocol is better in throughput parameters with an average value of 13.878 Kbps. In the jitter parameter, the two protocols have an average difference of 5.2305 ms. The DSR protocol has a better performance than AODV on the parameters of delay, jitter, and packet loss for the addition of the number of nodes and the speed of moving node.

Keywords: ad-hoc, MANET, AODV, DSR, video streaming, NS-2.