ABSTRACT

At the transport layer, there are two protocols, namely TCP and UDP. TCP protocol ensures that the transmitted data reaches its destination within both wireless and wired networks. The TCP protocol employs congestion control mechanisms to regulate data flow within the network, preventing congestion. TCP protocol is essential for addressing congestion issues in wireless networks, utilizing algorithms such as TCP Tahoe and TCP New Reno, which are improvements over TCP Reno. In this study, the analyzed parameters include Congestion Window, Throughput, Round Trip Time (RTT), and Delay. The simulation application used is Riverbed Modeler version 17.5 with an Ad-Hoc network topology. Ad-Hoc topology is dynamic in nature, capable of sending and receiving information, as well as transferring data across multiple nodes. The study comprises four distinct scenarios with varying data sizes: 100 MB, 200 MB, 300 MB, and 400 MB. Each scenario employs the File Transfer Protocol (FTP) as the application service. The results of this study indicate that the TCP New Reno algorithm performs better in terms of the congestion window parameter, with a maximum value of 61,126 Bytes, and an average delay of 8.7411 ms. The average RTT values for both algorithms are still suboptimal, namely 1086.27 ms for TCP New Reno and 964.6 ms for TCP Tahoe. TCP Tahoe demonstrates superior performance in the throughput parameter with a maximum value of 640 bits/sec.

***Keyword**: Congestion, TCP New Reno, TCP Tahoe, FTP.*