ABSTRACT

The network plays an important role in the performance of the Networked Control System (NCS). The problem with the Networked Control System is that there are random delays and dropouts that will have an impact on the stability of the NCS. Researchers analyzed network performance to get the 4G LTE network delay and dropout time and determine the network feasibility of the NCS. The test method is done by observing two data packets sent from PC A to PC B and vice versa in a stationary state. Two PCs were connected using LogMeIn Hamachi software, each PC made a data package using the UDP Test Tool software. The data package that has been created is copied using the Wireshark software, then forwarded by the Packet Builder software which serves to channel data packets in two directions between PC A to PC B and vice versa at certain time intervals. Data packet transmission traffic will be monitored by Wireshark software. Processing data from the results of Wireshark software monitoring will result in delay and dropout times. In this study, delay and dropout were analyzed as a large function of data packages and Tranmission Time Interval (TTI). Delay and dropout are affected by the speed provided by the provider. The result of network performance analysis is time delay (average = 0.18 s) and dropout (<3%), indicating that the network is stable and can be implemented on NCS.

Keyword : delay, dropout, 4G LTE, networked control system