Abstract

Wireless technology is now widely used, because wireless technology can be used for many things, one of which is to determine the positioning of the unknown node or target to be searched for. To be able to determine the position estimate of the unknown node, the estimated distance between Wi-Fi as an access point or anchor node and the unknown node must be calculated based on the RSSI value obtained. The approximate value of the distance will then be used as a reference to determine the position estimation of unknown nodes using the positioning system algorithm, where the algorithm that is often used is the trilateral algorithm. Trilateral algorithm uses 3 anchor nodes as a reference to determine the estimated position where it requires more cost in its application. Therefore in this study a simulation will be performed on matlab using a modified trilateral algorithm, where this algorithm only uses 2 anchor nodes as a reference in determining the estimated position of the unknown node. Based on the results of tests that have been carried out, it can be concluded that the trilateral algorithm is better in the accuracy of determining the estimation of unknown nodes with an average error position of 6.4m. However, the modified trilateral algorithm is better in terms of accuracy than the determination of unknown node estimates with the average distance between estimated nodes as far as x = 3.4m and y = 3.5m.

Keyword : *Wireless, Trilateral Algorithm, Trilateral Modified Algorithm, RSSI, Anchor Node, Unknown Node*