ABSTRACT

FTM (Fine Time Measurement) is a protocol that provides precise time measurement for WI-FI RTT because it calculates the distance between two devices by measuring the time it takes packets to get the time back and forth between devices and multiplying that time by the speed of light. The device making the request does not need to be connected to the access point to measure the distance with Wi-Fi RTT. For security, only the connected device can know the position distance to the access point. IEEE 802.11 continues to develop technology to be able to meet these needs, namely with the emergence of the latest IEEE 802.11mc standard. This standard is used to provide access point distance efficiency. The IEEE 802.11mc standard is a standard that can determine a more accurate position. This research is to find a solution how to get good measurement results in the use of distance on WiFi RTT inside and to determine network performance with the specified model.

The method used in 802.11mc uses the Trilateration algorithm to estimate the distance position of the device that best fits these measurements and another method used is indoor wifi positioning technology using the fingerprinting method. From the comparison method, the difference between the estimated position and the initial position in the trilateration method is 1.17 meters, while using the fingerprint method the difference is 0.08 meters, in this study using six access points. That one of the factors that affect the positioning results is the number of access points where the more access points are used to obtain the Received Signal Strengths (RSS) value, the positioning accuracy tends to be better.

Keywords : WiFi RTT, Trilateration, Fingerprint.