ABSTRACT

Position tracking on earth surface is an important requisites of technology. Therefore, there is a need for a system which has detection algorithm ability. Detection algorithm is an algorithm that could be used to find the user position based on some parameter as the references. One of position tracking algorithm is database position tracking algorithm which has been known as RSS (Received Signal Strength) signature, it is a position tracking technique using power signal and database system as the references. This system do not need to add hardware/software implementation at Mobile Station (MS) Handset.

This paper observe the performance of Mobile Station positioning using RSS signature which simulated by Matlab 7. K-Nearest Neighbour will be used for estimation of position. It can match the position estimation accurately based on radio-map in database.

The result shows that k value as the points sample which has the closest position to the real point is optimal at 43 points of k. Position tracking performance without AWGN channel accuracy has error rate RMS = 2,3774 m. The adding of noise in channel will increase the error rate value RMS = 135,6m for SNR = 20dB. And error rate increase when SNR values decrease. This position location system is not accurate at rayleigh fading which has error rate value RMS above 500m. Hence, it requires the other techniques to solve the fading effect.