

ABSTRACT

WiMAX (Worldwide Interoperability for Microwave access) is a new technology that provides broadband information services such as Wi-Fi technology and a solution to limited access to these technologies. This technology can provide high-speed data services up to 120 Mbps within a maximum radius of 40-50 km. In the process of signal transmission from the transmitter to the receiver experiencing power fluctuations due to signal power change due to the influence of barrier objects called fading. Obstacle objects can be grouped into three sections namely: reflection (reflections), dispersal (scattering), and refraction (diffractions).

At this final task (TA) is the data about the influence of fading on the uplink channel at the WiMAX IEEE 802.16d obtained through measurements taken at four locations namely: Mayapada, Ciung Wanara, HDTE, and Soreang. The parameters measured include: throughput, SNR, RSSI / RSL, and jitter. From the results of field measurements obtained, the best TCP throughput values obtained in the SS Ciung Wanara Kbps 5400 value, and the best UDP throughput values obtained in three locations namely Ciung Wanara SS, HDTE SS, and SS Soreang 5600 Kbps value. SNR measurements have the highest value in the value of SS Mayapada 27 dB. Parameters measured RSSI / RSL highest value found in the SS Mayapada -50 dBm value. Jitter parameters measurements performed only on the UDP with the highest values found in the SS with a value Mayapada 0.320 ms.

In the uplink direction of the ship (P_{TX}) for each measurement point is different. This is because of different measurement range and logic BS that want each SS signal as good as possible within a given threshold the user to the BS. If the distance measurement even further with the value of 14.52 Km, so P_{TX} value increased to 24 dBm.

The results of observation and analysis has been done it was found that the influence of fading on the uplink channel at the WiMAX IEEE 802.16d cause fluctuations in the average received power at the receiver of 24.44 dBm.

Keyword: fading, jitter, RSSI/RSL, SNR, throughput, uplink, WiMAX.