

ABSTRACT

Recently, wireless technology that have been studied and developed by PT TELKOM is broadband wireless access technology with IEEE 802.16d standard, or well-known as WIMAX. It is an evolution of prior broadband wireless technology, Wi-Fi. The technology is designed to provide non-LOS condition and use adaptive modulation technique such as QPSK, BPSK, 16QAM, and 64QAM. IEEE 802.16d standard can possibly make internet wireless connection reach out for 75 Mbps speed or 35 times faster than copper wire line (ADSL). To support dynamic and good modulation scheme, IEEE 806.16d adopts the technology which able to increase coverage use mesh topology and smart antenna technology. With good scheme modulation, IEEE 802.16d affords large throughput in long distance and high spectra efficiency level.

This final project will analyze broadband wireless access technology with IEEE 802.16d standard. Performance parameters used are link budget estimation (RSL), signal quality (SNR), calculation of delay, and throughput. The results are: smallest SNR 6.5 dB in RisTi Widyaloka 1 building, highest SNR 33.3 dB measured in Mr. Mahyar's house. Measurements of RSL higher than receiver sensitivity are: smallest RSL -97.5 dBm in RisTi Widyaloka 1 building, and the highest -66.08 dBm in Mr. Mahyar's house. Average RTT delay SSs to BS is 25 ms. Percentage downlink throughput is higher than uplink throughput. Downlink throughput is 9.43 Mbps (84.68% from theoretical throughput value), and uplink throughput is 4.17 Mbps (42.44% from theoretical throughput value).