Abstraction

The existing internet access that developed the most todays is DSL and WLAN technology. The access by DSL has distance limits while the numbers of WLAN has interference limits. To solve it, the new technology has appear called WiMAX.

Worldwide Interoperability for Microwave Access (WiMAX) is designed to fulfill the internet access demand based on high speed local access network. By using WiMAX we can access all variant multimedia application via local access network connection. The aim of WiMAX usage is to be applied in the Metropolitan Area Network (MAN) segmentation.

In this final project, the implementation of WiMAX will be located in Bandung Area. The WiMAX technology works up to 50 km distance even through obstacles, it is often called as OFDM technology (Orthogonal Frequency Division Multiplexing). The OFDM is a technology which is the devices work based on local access network are able to accept many reflected signal without causing its main connection distortion. Because, as we know, the local loop access network technology usually becomes susceptible to reflected signals that able to influence its main signal level. The number of bandwidth that is carried by WiMAX up to 280 Mbps per 1 base station, so it is fit to be used as distribution broadband device, assist the ADSL technology or leased line.

In the WiMAX technology planning in Bandung area, WiMAX's system with frequency 3,5 GHz are used. The bandwidth is 3.5 MHz while the type of its modulation is 64 QAM modulations, the value of FEC is ¾ and the value of Tg/Tb is 1/16. The result will finally take 12, 21 Mbps as the value of maximum bit rate.The antenna sectorisations are 60^{o} and 120, so there will be needed 131 BTS to cover and serve both urban and sub urban area