

ABSTRACT

Worldwide Interoperability for Microwave Access (WiMAX) is one of the development of technology for *wireless* data communications before, which provides *broadband* coverage in the *Metropolitan Area Network (MAN)* with a high-speed access. WiMAX technology that has been in accordance with standards issued by the Institute of Electrical and Electronics Engineering (IEEE) 802.16, using the two operating model, which is fixed (*fixed*) or nomadik, and *mobile* (the user who moved the place). Besides having a high-speed access, WiMAX technology has a distinctive feature compared with the wireless technology *broadband wireless access (BWA)* previously. So with the emergence of WiMAX is widely used for the BWA and the future now.

WiMAX technology has been developed that either *fixed* or *mobile*, without having to LOS (*Line Of Sight*) offers ease of access for internet users. With the operating frequency range of 2.5 GHz and 3.5 GHz for licensed frequency band, 5.8 GHz frequency band for the free licenses, WiMAX can handle data speeds up to 75 Mbps, as well as the coverage distance reached 50 km (depending on frequency of use). Or in other words, can be applied to WiMAX broadband connection '*last mile*' or *backhaul*.

The End of this Project will be discussed about the design of *mobile* WiMAX network for internet access service with a case study the Central Jakarta which is representative urban area. This design with the data that determines the service *coverage*, network capacity, traffic demand, and cell dimensioning, as well as *tools* to facilitate in the calculation of traffic and *link budget*. Therefore, the results of the Central Jakarta for this region, can be predicted traffic and *link budget* required.