ABSTRACT

WiMAX technology (Worldwide Interoperability for Microwave Access) technology is a Broadband Wireless Access (BWA) for broadband communications with high-speed access up to 75 Mbps as well as extensive coverage to a radius of 50 Km. The presence of WiMAX as an alternative access technologies of Broadband Wireless Access (BWA) solution providing hope to the development of telecommunication technologies and services today. With the presence of this WiMAX encourage various stakeholders to prepare its implementation scenarios. In the implementation of this wireless technology necessary telecommunications infrastructure sufficient in this case is the WiMAX base station as a signal transmitter and receiver. Planning System which explain include WiMAX base station locations planning in Bandung city using TelkomFlexi base station. WiMAX will be implemented in this region using 3.3 GHz for the frequency.

Geographic Information System is a system of hardware, software and procedures designed to separately obtain, process, manipulate, analyze, display and display spatial data separately solve the complex planning, process and examine other issues with computer-based information system that combines elements of the map (geographical) and information about the map (attribute data). Based on definition, GIS is suitable for supporting the WiMAX base station location planning using TelkomFlexi base station.

This research will discuss about the election TelkomFlexi base station that will be used as a WiMAX base station. The base station selection factor is the amount of data traffic or traffic packet density through the base station TelkomFlexi. Traffic packet from the calculation of each base station TelkomFlexi in Bandung it will tell the base station TelkomFlexi potential to be used as a WiMAX base station.

In this research will be also calculating the radius of the WiMAX base station if placed at the TelkomFlexi base station and visualization coverage area of each of the WiMAX base station. From these visualization it can be done WiMAX base station location planning is optimal to avoid the blank spots and to minimize an overlap. The final results obtained from the WiMAX base station location planning using this TelkomFlexi base station is produced 8 TelkomFlexi base stations selected to be used as a WiMAX base station based on base station which has a high traffic packet density and an additional 4 base station to cover an area which is still was not covered by the previous base station.

***Keywords**: WiMAX, TelkomFlexi base stations, base station location, coverage, traffic packet density TelkomFlexi.*