ABSTRACT

Technology of telecommunication grows rapidly in recent time. People trend to use this technology personally, due to its mobility and its role as a multimedia device (broadband). WiMAX (Worldwide Interopability for Microwave Access), which is able to send the data up to 75 Mbps for each base station can be a solution to fulfill the necessity. However, WiMAX network planning needs geographical costumers mapping and measurement of bandwidth necessity and transmission parameters on Radio Frequency (RF) link.

This final project describes WiMAX network planning and some aspects related to it, such as location mapping, the determination of backhaul topology, propagation modeling, link budget, user needs analysis, network capacity planning, calculation of the radius and the number of cells, and determining the location of Base Station (BS) .

The result of this final project is Sragen City which has total area of 941.55 km^2 needs 70 cells with using 3 sectors antenna, and a radius of each cell is 2.63 Km, and at the same time in each cell consists of one Base Station (BS), and 11 Base Station (BS) used as a backhaul.

Key words : WiMAX, mobility, broadband, bandwidth, propagation