

## ABSTRACT

Development of *Mobile WiMAX* technology represent a solution to accommodate the requirement of multi traffic service for consumer of mobile broadband. In area of Bandung City has been made available about TELKOM's cellular tower. For that, in this final project has been planned a *Mobile WiMAX* access network by utilizing TELKOM'S cellular tower to serve *BWA* needs of Bandung city.

The result of identify indicate that there are as much 48 location of TELKOM's cellular tower which have been made available in Bandung City. The result of planning based on coverage analysis by using COST 231 empiric propagation model indicating that required as much 15 Base Station of *Mobile WiMAX* to cover the area of Bandung City.

The result of planning based on capacity analysis with estimate the capacities by reckoning overhead signalling indicate that every sector of *Mobile WiMAX* Base Station with bandwidth canal 5 Mhz able to accommodate the user simultan equal to 93 user/sector. Based on capacity analysis indicating that required as much 17 Base Station of *Mobile WiMAX* to serve the requirement of *Mobile WiMAX* trafik in Bandung City.

The Result of visualization using Atoll software indicate that, with the election as much 17 location of TELKOM'S cellular tower tower which have available to utilized of location *Mobile WiMAX* Base Station can cover the Bandung City equal to 140,4 Km<sup>2</sup> ( covered 83 % from total area of Bandung City ). The Result of visualization of focus zone indicate that there are 91.3 % from the total covered area in focus zone area. The result of visualization of adaptive modulation show that there are 59 % at 64 QAM modulation area, 31 % at 16 QAM modulation area, 9 % at QPSK modulation area.

**Key words: Atoll, Adaptive Modulation, COST 231, Mobile WiMAX, TELKOM**