

## ABSTRACT

In the implementation of mobile or fixed wireless networks, operators often face the problem of signal degradation is received at a mobile station in particular that happened metropolitan area. Received signal quality degradation is very affecting, especially the customer service side as a consumer. There are two common causes of decrease in received signal quality, the first is an object that is able to reduce the signal (buildings, hills, tunnels), and the second is an area that it is not already installed base stations, so that no signal BTS fair. In this final form, designed a simulation model that uses the cost model 231-walfish Ikegami to know or detect any decline in service area receive signal quality. Simulation model created by calculating the width of the street, the signal arrival angle, the BTS transmit power, and physical condition of the building that affect the received signal quality degradation in the mobile station. From the simulation results can be seen that by reducing the angle received (from the point of 500 to 300) and make changes in the BTS transmit power that is by increasing the transmit power (from 30 dBm to 40 dBm) will get a good received signal quality ( $\geq -110\text{dBm}$ ) , in addition to changes in angle on receive and transmit power of BTS changes distances between buildings (B and W) also affects the received signal quality Mobile Station.

**Keywords:** *CDMA 2000 1X, system komunikasi sellular, cost 231-walfish ikegami*