

ABSTRACT

High mobility needs as well as the number of activities carried out in the building on cellular communication systems require the presence of an adequate infrastructure so that customers can be served anywhere. The large number of activities and the high traffic in the building was also a challenge for the telecommunications industry. Indoor mobile communications system is a solution to overcome signal attenuation caused by the can not it serves throughout as well as due to the influence of damping on the inside of the building. It becomes a foundation so that the design of the indoor network at buildings with femtocell technology. Writing this research will do the design of the indoor network technology LTE femtocell on building Java Heritage Hotel Purwokerto area of 8,395,828 m² building on a floor of 1.2 and 3 based on the model of the propagation Cost 231 Multi wall simulated using Radiowave Propagation Simulator software (RPS). In this simulation is done 6 scanario differentiated based on the position design and method of FAP (Coverage and capacity). Link budget calculations needed to find out the number of FAP to be used, the result is 13, FAP FAP in Coverage and 7 in capacity. The results of the calculation of the Maximum Allowable Path Loss (MAPL) for uplink direction of 151.4245041 dB, whereas the downlink direction of 138.4245041 dB. The best result obtained was on placement scanario FAP into either Coverage or capacity.

Keywords: Indoor Cell uler, Femtocell , Capacity, Coverage, Radiowave Propagation Simulator