

ABSTRACT

Tourists visiting Kuta Mandalika often have difficulty connecting to cellular operator network services, due to the influence of user density and the condition of the area which is classified as open space. Especially after the construction of the Mandalika Circuit, located in Central Lombok Regency, Pujut District, Kuta Village, the density of internet network users in the area will increase. In this situation, the number of devices requiring network services in the Mandalika Circuit area will greatly increase. Therefore, in this final project, network planning is carried out in the Mandalika Circuit at a frequency of 1800 MHz.

To carry out network design in this Final Project, it is carried out by carrying out capacity planning, coverage planning and power configuration. Data for planning is obtained from audience data based on the capacity of the stands that can be accommodated by the Mandalika Circuit. Then, the data obtained is used for the calculation of coverage planning and capacity planning for the planned coverage area.

The results of the design that has been carried out, the sites needed to meet the service needs of users in the Mandalika Circuit area require 5 sites. The simulation uses Atoll based on two scenarios, namely capacity & coverage planning and power configuration. It can be seen that the signal quality from the design of scenario I based on coverage planning in the Mandalika Circuit area with a Tx power of 46 dBm, obtained an average SINR of 9.6 dB, an average RSRP of -88.25 with an average throughput of 32.269 Mbps. For Scenario II with Tx power of 43 dBm, 46 dBm, and 48 dBm, it was found that the increase in the RSRP parameter was from -91.25 dBm to -86.25 dBm or in percentage of 0.9% increase.

Keywords: *Capacity planning, Coverage planning, Power Configuration, Sirkuit Mandalika*