ABSTRACT

A Service on current Internet network is one of requirement. In this digital era, almost people need fast internet access and realtime. However, sometimes it is hampered by inadequate signal strength in certain places, especially indoors. This can happen because of uncovered signal by outdoor base stations so that the received power level signal is weak or overcapacity user at an event such as a concert at the Sasana Budaya Ganesha.

The purpose of this final task is to add and design a coverage area, capacity planning, looking for the required number of cells, cell coverage and cell radius at the indoor network at Sasana Budaya Ganesha by designing additional picocell inside the building. Designing additional picocell using software simulation on the RPS (Radio Propagation Simulator) and COST 231 method. Before doing network accsess planning, walktest to know the existing condition is needed. The result of walktest on Sasana Budaya Ganesha Building get some parameter as follow: RSCP at intermediate and good level (105 dBm> RSCP> -25 dBm), RSRP at good and poor level (-92 dbm> RSRP> -110 dBm), Ec / No at good and poor level (-9 db> Ec / No> -25 dB), and SNR at poor level (10 db> SNR> -100 dB).

This network access planning consists of 3 scenarios based on the number of the antenna with each scenario consists of 2 kinds based on the location of the antenna. Based on calculations and simulations, we get the value of RSL scenario 1a of -82.95 dBm, RSL scenario 1b of -82.25 dBm, RSL scenario 2a -60.45 dBm and SIR scenario 2a equal to 62.15 dB, RSL scenario 2b equal to -64,30 dBm and SIR scenario 2b equal to 36,60 dB, RSL scenario 3a equal to -55,28 dBm and SIR scenario 3a equal to 36,89 dB, RSL scenario 3b equal to -51,88 dBm and SIR scenario 3b equal to 36,89 dB. RSL scenario 3c equal to -57,15 dBm and SIR scenario 3c equal to 44,74 dB

Keywords : *Picocell*, *Capacity*, *Coverage*, *Link budget*