

ABSTRACT

Signal strength in building Braga City Walk was too low because macro BTS could not handle those area anymore. Whereas the building is a public area that has a huge traffic potential. To overcome the problem an indoor network need to be built.

This final project discussed about indoor cellular network planning process in Braga City Walk. The discussion focused on distribution antenna system (DAS), pathloss model calculation and determination, network configuration, simulation and evaluation toward design result. The simulation design was made in 3D form using RPS (Radio Propagation Simulator) 5.3 student version. The result have to fulfill clauses of KPI define by operator (P.T. Indosat)

Planning process was done in several steps, which are 1) initial measurement (drive test before), 2) distribution antenna system planning, 3) consulting the design with operator and building owner, 4) installation process, 5) final measurement to find out whether the design meet the requirements.

The final measurement (drive test after) was done in idle mode and connected mode using a laptop equipped with TEMS Light software connected to mobile station. Rx_level value ≥ -80 dBm (idle mode measurement) obtained 99.95% (target $\geq 95\%$). Rx_Quality value 0 - 4 (connected mode measurement) obtained 98.96% (target $\geq 85\%$). Rx_Quality value 5 (connected mode measurement) obtained 1% (target $\leq 10\%$). Rx_Quality value 6 - 7 (connected mode measurement) obtained 0% (target $\leq 5\%$). SQI (Speech Quality Index) average value 29.96 (target 26). The result shows that the indoor network can serve all indoor customers and complies the KPI prerequisite by operator.