

## ABSTRACT

Mobile communication technology has been growing fastly. This is based on the high demand of human mobility for communication and information technology that has fast and reliable quality. The high demand for communication services in urban areas that currently require services with fast and reliable communication network. The urban people at this time began to live in the apartment has problems with network quality. One of them is in Newton's Apartment on Jalan Terusan Buah Batu Bandung which is a new residential apartment which has 3 buildings. In the Cyprus building there are 29 floors. The high apartment building becomes a problem in the service of the quality of cellular technology already available, so it needs to be optimized in order to get better service quality.

This research is conducted indoor building coverage planning (IBC) with two scenario calculation to get the required number of antenna, that is by capacity and coverage. Before the scenario calculation, walktest will be done first to get the quality of network performance. IBC planning will use the Hybrid Orthogonal Passive DAS system that becomes the distribution system of the antenna. The design of IBC Cyprus Building Newton Apartments will be planned on floor 20 to floor 29. For the simulation will be used software RPS (Radio Program Simulator)

After calculation and analysis, it can be determined the number of antenna and recapitulation of simulation result according to observed parameters of RSRP, and SIR. From the calculation of capacity as much as 1 antenna each floor, and the calculation of coverage obtained the number of antennas required as much as 2 pieces of antenna on each floor. The number of antennas used is based on the coverage calculation. Based on the simulation results, the average value for RSRP is -68.79 dBm to -77.14 dBm and for SIR value with an average of 12.44 to 13.13 where it suitable to the criteria of RF parameter value.

**Keywords LTE; Coverage; Capacity; Walktest**