

ABSTRACT

The cellular communication industry in Indonesia has grown rapidly in this recent day. This situation has consequences to tighten the competition among cellular network providers. The continuous efforts to enhance the network quality is a key factor that have to be concerned carefully.

This Final Project researches the planning process of building a new PT Telkomsel's BTS on the site of Hotel Holiday Inn Bandung. This new BTS has first intended to give an indoor coverage in the hotel's building. But, by some considerations, this new BTS is then also projected to take over the function of an existing micro BTS that has been operated to cover the street area in front of the hotel. The planning process comprise the analyzing of capacity needed, choosing the location where the shelter of BTS will be placed, planning the cabling plot, analyzing the right place for indoor antenna placement, analyzing power link budget, and analyzing the interference. This planning process is performed for DCS-1800 system.

As the result of this planning process at the site of Hotel Holiday Inn Bandung only exist one single macro BTS to cover both indoor the hotel building and outdoor the street in front of the hotel. The signal quality predicted is above the threshold required by PT. Telkomsel of -80 dBm for both indoor and outdoor coverage. For outdoor coverage, the signal is predicted to be able to cover the street about 300 meters for each transmit direction using antenna with gain of 11 dBi. The carrier to co-channel interference level ratio predicted is much better than the GSM standard requirements of 12 dB.