

## ABSTRACT

In wireless communication system, there are so many complicated problems that needs decent handling. Some of the issues are blank spot at indoor locations, and "heaping" of users in one sector/cell (specially at public location), which increase the blocking probability. Many methods has been used to handle blank spot; increasing the base station transmit power, repeater installment, and implementing picco cell in buildings are some of the examples. The advantage of picco cell implementation is that picco cell adds cell's capacity, besides handling blank spot at indoor locations. PT.Telkom, as operator of CDMA 2000-1x Telkom*Flexi*, often use repeater to handle blank spot. This method has proved effectively handles blank spot, but lack of capacity will still be problem.

This final paper studied about picco cell planning, at Ministry of Justice's office building. Picco cell implemented by installing an indoor base station, and distributing it's transmit power to all location at the building. By using the concept of "cell within a cell", picco cell expected to give extra capacity, to handle users inside the building, besides handling blank spot. Analysis about how many cell(s) needed, power distribution of the indoor base station, link budget calculation, and PN Offset planning as the cell's identity, are covered in this final paper.

The result of picco cell planning shows that one picco cell, with maximum capacity of 29 channels, are sufficient to handle users inside the building, which needs 15 channels. Thus, the loading factor ( $\rho$ ) inside the building are 0,52. The implementation of picco cell itself needs one indoor base station, nine indoor omni-directional antennas, one 3-way splitters, six tapper-7s, eleven 10 dB attenuators, and 365 meters of 5/4" coaxial cable. The identity of the picco cell is PN Offset with number 152.