

ABSTRACT

Increasing the number of users of mobile technology, complexity of networks, and the varied parameters in the future require a strategy to manage it. Self-Organizing Network (SON) is one of the main technology has to offered. The purpose of this technology among others could save on operational costs, increase performance and dynamic processing on a networks. One of the features from SON is Self-Optimisation that can make networks can automatically adjust its configuration after the process of collecting data from User Equipments and Base Station. For the parameters that will experience the most significant changes in the Self-Optimisation is one of them is the coverage and capacity of a cells. Currently one of the candidates that will be used for Self-Optimisation technology is Adaptive Antenna Systems that have a parameter that can change dynamically.

Analysis at this final project is the use of Adaptive Antenna Systems combined with a heuristic algorithm as a candidate on the Self-Optimisation of 3G UMTS by type RadioPropagation Channel are urban, suburban, and rural. The resulting parameters are uniform pilot power and tilting configuration. The results in this final project is expressed in the comparison of pilot power allocation of radio propagation in different environments. In addition performance is measured SINR and throughput.

In this research a pilot power that is able to decrease in any impairment of tilting. In addition heuristic algorithm capable of adjusting its value based on propagation radio environments. Pilot power that generated for urban areas can be smaller than for rural areas. At the optimum configuration for the number of cells 12 pieces SINR value increased 40% to 150% and throughput increased by about 20%.

Key words: Adaptive Antenna Systems, heuristic algorithm, Self-Organizing Network, Self-Optimization, WCDMA, RadioPropagation Channel.