

## ABSTRACT

Telecommunication system in Indonesia has been in the fifth generation of mobile telephone that not only voice communication but also data access (internet mobile) and multimedia. This needs a telecommunication system network which can provide a good voice communication and high rate data. Therefore, it needs an optimization process to increase quality of a good network.

This final task explain a quality optimization of UMTS network. Optimization is a process where all of information about hardware configuration, hardware problem, antenna configuration (azimuth height, tilting), setting parameter, network topology, and activity information that relates to network topology. Simulation process is used software optimization recommendation Atoll 3.2.1. The parameter that is used for optimization process is RSCP( Receive Signal Code Power), Ec/No, Throughput and KPI (Key Performance Indicator).

An expected result after doing this optimization process is the increasing of the quality UMTS network in alun alun simpang lima area of Semarang. Based on the results obtained UMTS network quality measurement standards of success parameter values RSCP, Ec / No, and Throughput respectively 75% for the value of RSCP  $>-102$  dBm, 91 % for the value of Ec/No  $>-12$  dBm and 59 % for the value of throughput  $>512$  kbps . Meanwhile, after the simulation optimization recommendations increased the value of the parameter RSCP , and Ec / No respectively for 97.28 % for the value of RSCP  $>-102$  dBm, and 99.74% for the value of Ec/No  $>-12$  dBm.

Keywords: Optimization, RSCP, Ec/No, Throughput and KPI.