

ABSTRACT

Mobile technology has become a daily necessity that can not be abandoned. In the last decade, mobile technology has evolved from the technology that is expensive and for certain users, becoming a technology used by many people in the world. Currently mobile technology is being popularly used is technology Long Term Evolution (LTE). The number of LTE users each year continues to rise with the increasing number of smartphone that supports LTE services.

In a cellular network capacity will always form the issues that will not be never-ending. From generation to generation cellular technologies always bring new solutions to overcome the limitations of capacity. In the LTE-Advanced technology has been the introduce the heterogeneous network scheme which is expected to solve the problems of capacity.

In this research, will be done simulation and analysis of LTE-Advanced heterogeneous network based on pico cell. The frequency of the work that will be used is 1800 MHz and 2100 MHz. The scenario will be compared between before pico cell and after using pico cell. And will be done scenario with eICIC configure to reduce the interference that occurs.

From the simulation results, after the implementation of the pico cell obtained an increase in the number of parameters, such as signal level increased to 19.86 dBm, of the CINR level increased reaching 1.6 dB, from the user side connected an increase up to 56.5%, and in terms of throughput had increased 3.8 Mbps.

Keywords: LTE-Advanced, heterogeneous network, eICIC.