ABSTRACT

Improved cellular technology that increases the number of users and demand for service quality. Large needs and areas needed to meet customer needs. Heterogeneous networks or often abbreviated as HetNet are solutions to overcome capacity and reach. However, using HetNet will cause interference. At HetNet the interferences that occur are Co-tier and Cross-tier disturbances. Coordination interference is needed to reduce interference to improve performance.

In this final project will be analyzed to reduce interference on HetNet using coordination interference with the Soft Frequency Reuse (SFR) method with the observer area on macro cell and femto cell that depend on one cell for the outdoor. In the simulation, subcarrier resources and power centers are allocated for the cell center and cell edge, while for femto cell use sharing resource sharing and use Pfemto power.

The results in this study obtained the value of SINR and throughput on the heterogenous network using the SFR method using an increase with the average value of the SINR obtained was 13,067 dB and for the throughput value had an average value of 17,951 Mbps. Compared to companies that do not use femto cell, they have a lower average value of 7,548 dB for SINR and 8,958 Mbps for throughput values. The use of SFR improves the quality of the reception signal which is located at the cell edge.

Keywords : *Heterogeneous Network, Interference coordination, Soft Frequency Reuse*