ABSTRACT

The development of 3GPP LTE technology supports a variety of data services that users can reliably communicate so that the number of service requests increases. Real time services and nonreal time services causes an inter-cellular traffic imbalance that can degrade LTE network performance. Traffic imbalances have an impact on higher call blocking in the cell. Most of the resources in the lowloaded cell is idle, inefficient resources. Therefore, we need a load balancing method to balance neighboring intercellular traffic as a network solution.

Load balancing plays a role in improving the user experience and network performance across cells. Mobility load balancing use handover to distribute several load of overloaded cell to its neighboring cell. MLB is did with adjust hysteresis area between source cell and target cell. Load balancing is done in a sequence of hysteresis areas between the source cell and the target cell. An overloaded cell performs load data from each of its neighboring cells to disassemble cell-targeted cells. The source cell performs user-level signal measurements that are eligible to handover and use the new hysteresis value. The origin cell provides information to the target cell about the decision handover request by reason of load balancing.

Application of MLB algorithm on the LTE network is able to move some users who are on the edge of the cell. Thus, the average network load could increase by 1.32%, increased throughput in 3.8909 Mbps network, 5% fairness index increase and unsatisfied user decrease of 5.17%. The output of this research is the excellent MLB algorithm for the LTE network so that it can provide the availability resources for users who will connect to the network.

Keyword: LTE, mobility load balancing, handover, hysteresis, performance