

## ABSTRACT

*is a Home Node B technology, the Node B access point into the room, with a low power level and using the official frequency of the cellular network, it connects to the service provider's network via broadband. increase the data rate of a cellular network when the user is in the where access would otherwise be limited or unavailable. The use of s have problems, 's ability is to serve up to 8 users, for a large room, it needs some other neighboring, that leads to intercell –interference, that effects to data rate, which is not sufficient for all users and also the ineffective use of spectrum reuse. This research aimed to analyze the performance of the algorithm is able to solve the problem.*

*This research's method is simulated the resource allocation algorithm by using computer programming language. First, analyze the relationship between the performance of the network, user's location and the data rate required, it appears that the performance in a particular location and the data rate is not balanced. Finally, we formulate this subchannel reuse criterion and simulated a corresponding simple resource allocation scheme, performed both at the central node-level and the coordinated base stations (FBSs)-level. Then analyze the relationship between data - rate requirement and the percentage of guaranteed user, the data - rate requirement and SSR, the number of users and percentage of guaranteed user, and the relationship between the number of users and SSR.*

*The simulation results show that in the data-rate range from 1 to 3.5 Mbps, the percentage of guaranteed user obtained between 60-85 % and SSR in the range 0.4-0.8 it decreased along the increasing of data-rate value. At the number of user 2-8, the results show the percentage of the user guaranteed 35-68 %, decrease along the increasing of user and SSR values obtained from 0.15 -0.6, it shows the value of SSR increased along the increasing number of users. The result shows that this scheme is able to increase the percentage of guaranteed user and maximize the ability of SSR.*

**Keywords:** , Resource allocation, Spectrum spatial reuse, OFDMA