

ABSTRACT

The latest technology, namely Femtocell, with a smaller coverage area and higher spectrum efficiency, is specifically implemented for indoor network access. This network is installed ad hoc without proper planning by the Femtocell owner or without intervention from the operator. In the deployment of Femtocells, power control techniques are needed to overcome the ad hoc nature of Femtocells and provide quality service for Femtocell users. With this in mind, the importance of due diligence is closely related to the implementation of Femtocell, which deals with interference between users and the optimal use of power for transmitting so as to save power. The power control feasibility study conducted in this study is focused on a centralized Femtocell network with a different number of multi-channel users. The research method is based on the use of a viable solution algorithm by observing the output of the power vector which must be a non-negative number. A non-negative number indicates that power can be applied well. From the test results on a single channel, it is found that all users can meet the target SINR. When a channel is used by 5 users, a non-negative power vector value is obtained with a target SINR of 13 dB. However, when it increased to 10 users, the SINR was only 9.5 dB. In channel group testing, the more users use the channel for data transmission, the better SINR is obtained.

Keywords: *Femtocell, ad hoc, power control*