

## ABSTRACT

Cellular system needs quality networks capacity and services because increasing load traffic. One way to increase quality of service is by reducing call blocking uses channel borrowing strategy. Channel borrowing might be done by reducing transmitted power to limit the interference of co-channel cells.

Phantom cell analysis is used to evaluate performance of BDCL strategy. Phantom cell analysis uses four-cell channel reuse pattern and then for its analysis uses Markov chains. In phantom cell analysis, to get call blocking probability at a cell, two phantom cells are used to represent its six neighboring cells. In the FCA strategy, when a call arrives at a cell and finds all nominal channels busy, the call will be blocked although another cell has idle channels.

From analysis can be summarized that, BDCL system have blocking probability more lower than FCA until a certain traffic limitation, and another condition blocking probability FCA more low than BDCL. It is because of very high traffic load BDCL availability to service nominal calls regular and borrowing channel is more limited. Many cell in system uninfluenced BDCL performance to total channel and traffic load limitation. At  $m=5$ ,  $N=16;25;36;49$ , and traffic increase 240-340 call/hour blocking probability relative constant at 0,022.

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