Abstract

The channel assignment problem is a complex problem where a minimum number of channels have to be assigned, under several constraints, to the calls requested in the cellular system. Several approaches have been proposed to solve the dynamic channel assignment (DCA). In this paper, DCA has been modeled as a combinatorial optimization problem. Genetic Algorithm (GA) is a simple tool that can be used to solve such optimization problems in a fast and effective manner. It selects the best option from all the possible solutions, thus making it very different from all the other existing approaches. Several constraints like cochannel and adjacent channel interferences have been considered while solving the channel assignment problem. The performance of the proposed GA-DCA model has been evaluated by a computer simulation tool under the effective of varying cellular capacity.
- Sajal K. Dasa, Osman Koyuncu, Dynamic multichannel assignment using network flows in wireless data networks, Elsevier: Microprocessors and Microsystems, 2004
- Kshirasagar Naik, David S.L. Wei, Stephan Olariu, Utilizing the synchrony among base stations for better performance of channel assignment algorithms, Elsevier: Computer Communications, 2008
- Sancho Salcedo-Sanz, Jose A., Emilio G., Angel M., Christopher Thraves, Optimal switch location in mobile communication networks using hybrid genetic algorithms, Elsevier: Applied soft computing, 2008

**Index Terms**

Computer Science  
Image Processing

**Key words**

Cellular communication
Dynamic channel assignment
Genetic algorithm

interference constraints