World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:8, No:02, 2014

# A New Reliability based Channel Allocation Model in Mobile Networks

**Authors :** Anujendra, Parag Kumar Guha Thakurta

**Abstract :** The data transmission between mobile hosts and base stations (BSs) in Mobile networks are often vulnerable to failure. Thus, efficient link connectivity, in terms of the services of both base stations and communication channels of the network, is required in wireless mobile networks to achieve highly reliable data transmission. In addition, it is observed that the number of blocked hosts is increased due to insufficient number of channels during heavy load in the network. Under such scenario, the channels are allocated accordingly to offer a reliable communication at any given time. Therefore, a reliability-based channel allocation model with acceptable system performance is proposed as a MOO problem in this paper. Two conflicting parameters known as Resource Reuse factor (RRF) and the number of blocked calls are optimized under reliability constraint in this problem. The solution to such MOO problem is obtained through NSGA-II (Non-dominated Sorting Genetic Algorithm). The effectiveness of the proposed model in this work is shown with a set of experimental results.

**Keywords :** base station, channel, GA, pareto-optimal, reliability
**Conference Title :** ICCSE 2014 : International Conference on Computer Science and Engineering
**Conference Location :** Kuala Lumpur, Malaysia
**Conference Dates :** February 13-14, 2014