Abstract

In wireless mobile communication systems, proper channel allocation scheme is required. Due to the limitation of available frequency spectrum, channels must be reused as much as possible to increase system capacity. Complication arises in channel allocation, when more than one cell become "hot-spot" in the network of one BSC. The cells become "hot-spot" when bandwidth resources currently available in those cells are not sufficient to sustain any more call. In hybrid channel allocation, cells send a multilevel hot-spot notification to the dynamic pool of BSC on each channel request that cannot be satisfied locally at the base station. Proportional to the current hot-spot level of the cell, this hot-spot notification will request more than one channel to assign to the requesting cell. Severe complication arises, when not even one channel available in the dynamic pool of BSC in order to assign to requesting cells. This is the situation, when call starts dropping or blocking. This paper presents a new scheme in which BSC will fetch those ideal channels, which are borrowed to requesting cell from the dynamic pool in the time of hot spot but become ideal in the temporary pool of BTS for some period of time. BTS make use of these channels in order to sustain new incoming call. The proposed algorithm in this paper will reduce the call dropping probability comparatively more than the simple hybrid channel allocation algorithm.
- Günther Reise and Gerald Matz, "Optimal transmit power allocation in wireless sensor networks performing field reconstruction," 978-1-4673-0046-9/12/$26.00 ©2012 IEEE
- Prof. Dr. -Ing. Jochen Schiller, http://www.jochenschiller.de/ MC SS05, "Mobile Communications Chapter 2: Wireless Transmission"
- Ashish Raniwala, Kartik Gopalan and Tzi-cker Chiueh, "Centralized Channel Assignment and Routing Algorithms for Multi-Channel Wireless Mesh Networks," Mobile Computing and Communications Review, Volume 8, Number 2
- J Joshi, G Mundada, "A hybrid channel allocation algorithm to reduce call blocking probability using hot-spot notification," Information and Automation for sustainability, 2010 - ieeexplore.ieee.org
Networks, June 24-27, 2002, Las Vegas, USA
- Wei Wang and Xin Liu, "List-coloring Based Channel Allocation for Open-Spectrum Wireless Networks", University of California, Davis Davis, CA 95616, U. S. A.
- Ray-Guang Cheng & phone Lin, "OVSF Code Channel Assignment For IMT-2000" 0-7803-5718-3/00$10. 00 2000 IEEE.

Index Terms

Computer Science Mobile Communication

Keywords

hybrid channel allocation  hot-spot  blocking probability  handover