

Dynamic Spectrum Sharing Optimization and Post-Optimization Analysis With Multiple Operators in Cellular Networks

ABSTRACT

Dynamic spectrum sharing aims to provide flexible spectrum usage and improve spectrum efficiency for cellular and noncellular networks. We propose two optimization models using stochastic optimization algorithms in which the secondary operator: 1) spends the minimal cost to achieve the target grade of service (GoS) assuming unrestricted budget or 2) gains the maximal profit to achieve the target GoS assuming restricted budget. We mathematically model the sharing agreement scenario and derive the closed-form solution of blocking probabilities for each operator. Results show how the secondary operator performs in terms of blocking probability under various offered loads and sharing capacity.

EXISTING SYSTEM

- Spectrum sharing between operators often results in a considerable improvement of GoS, although it would incur additional costs to the operators.
- Since network operators often operate with a limited budget, the borrowing decisions of a network operator could be affected.
- Consequently, the operators would need to make dynamic, on-demand and correct choices of borrowing additional bandwidths from other operators.

PROPOSED SYSTEM

- In proposed system, a novel purchase approach for dynamic spectrum sharing (DSS) network is proposed in the presence of multiple secondary and primary network operators.
- Thus there is a obvious need for further bands categorization prior to spectrum trading, which takes heterogeneity of cells into account.
- The objective is to maximize the overall operating cost or to maximize the revenue for an SNO as well as to maximize utility to end user.

SYSTEM REQUIREMENTS

HARDWARE REQUIREMENTS

- Processor - Intel core i3
- RAM - 2B
- Hard Disk - 20 GB

SOFTWARE REQUIREMENTS

- Operating System : LINUX
- Tool : Network Simulator-2
- Front End : OTCL (Object Oriented Tool Command Language)

REFERENCE

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