An Optimized Sensing and Detection of Cognitive Radio Network using Monte Carlo Simulation

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 162
Number 4

Year of Publication: 2017

Authors:
Abhinav Shukla, Puran Gour

10.5120/ijca2017913258

Abstract

The Cognitive Radio Network is an intelligent network, which has the capability to efficiently utilize the available spectrum using various spectrum-sensing techniques, in addition with the intelligent energy consumption and bandwidth allocation. In this paper we are simulating the cognitive radio network using Monte-Carlo simulation model. The proposed system is tested under Additive White Gaussian noise (AWGN) channel and Rayleigh Fading Channel environment. During simulation the probability of detection (Pd) is calculated for given signal to noise ratio (SNR) and false alarm rate (Pf). To enhance the system performance median filter is implemented which significantly enhances the performance of detection probability for given SNR and Pf.

References


Index Terms

Computer Science Networks

Keywords

Probability of Detection (Pd), False Alarm Rate (Pf), SNR, Monte-Carlo Simulation and Median Filtering.