Abstract

Transmit power minimization is one of the major research challenges in Relay-Assisted Cognitive Radio Networks. In this process, the transmit power of each individual relay is adjusted in such a way that the overall transmit power consumption at the relay network is minimized while satisfying the minimum Quality-of-Service (QoS) requirements of primary and secondary networks. In this paper, a similar constrained optimization problem is focused in which a secondary source-destination pair is assisted by a potential relay network having Cognitive Radio capabilities. A Fuzzy Rule Based System (FRBS) is proposed for intelligent relay selection such that total transmit power at the relay network is minimized while achieving the desired signal-to-noise ratio (SNR) at the destination and keeping the primary communication undisturbed. The effectiveness of the proposed scheme is highlighted through simulation results.


Index Terms
Keywords