

Notice of Removal: Cooperative Spectrum Prescience for Advanced Performance of Cognitive Radio Networks (CRNs)(RETRACTED)

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Abstract

In this paper, the spectrum and energy efficiency (EE) of cooperative spectrum prescience (CSP) in cognitive radio networks (CRNs) are investigated. In integration, the performance of CSP is evaluated utilizing hidden Markov model (HMM) and a multilayer perceptron (MLP) neural network. The cooperation between secondary users in presaging the next channel status employs AND, OR and majority rule fusion schemes. Simulation results show a paramount rule in the spectrum efficiency utilizing CSP with the majority rule at the cost of a diminutive degradation in energy efficiency compared to single spectrum prescience (SSP) and traditional spectrum sensing (TSS). The HMM prognosticator provides better performance than the MLP presage. Moreover, the total probability of prescience error with the majority rule provides the best performance compared to SSP and the other fusion rules. On the other hand, the AND and OR rules have the worst performance in the high and low traffic cases, respectively. The majority rule provides a good tradeoff between diligent and redundant state prescience errors compared with the AND and OR rules and SSP. Further, a reduction in the diligent state prescience error increases the spectrum efficiency (SE) more compared to a reduction in the redundant state prescience error. © 2018 IEEE.

Author keywords

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