

# Spectrum Monitoring during Reception in Dynamic Spectrum Access Cognitive Radio Networks

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If a frequency band has primary and secondary users, then the cognitive radios of the secondary users must monitor the band and cease to transmit if a primary user's radio begins to transmit. Traditional methods require the secondary users to not transmit while they monitor for the emergence of primary user signals. This article proposes and analyzes techniques by which the secondary radios can continue transmitting during monitoring.

Then, if a primary user appears to be present during monitoring using this article's method, traditional methods are used by the secondary user to verify that the primary user is present and stop transmission. This technique reduces the average time between the start of a primary user's transmission and the stopping of the secondary user's transmission and increases the communication efficiency of the secondary radio, thus improving the overall performance of cognitive radio systems.

For an overview on cognitive radios, see an article by Joseph Mitola III and Gerald Q. Maguire, Jr. ([http://ieeexplore.ieee.org/xpl/freeabs\\_all.jsp?arnumber=788210](http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=788210)).

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