Spectrum Sensing Techniques in Cognitive Radio Networks: A Review

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ABSTRACT

With the advancements in wireless communication, the world of communication is facing spectrum scarcity. It is problematic that demand for multimedia streaming via wireless networks has grown so dramatically.by a lack of spectrum. Due to the rising demand for wireless applications, the usage of the radio spectrum, a limited and important resource, has been severely restricted. However, a fixed spectrum assignment has led to underutilization of spectrum since a significant portion of licensed spectrums are not appropriately exploite.It has been noted that some frequency bands in the spectrum see heavy utilization, while others go unused. Radio spectrum shortage has a remedy in the form of cognitive radio. As we all know, cognitive radio is a type of wireless communication in which a radio transceiver can discern between spectrums that are open and those that are not. Following that, it uses the vacant spectrum while avoiding the crowded one. The electromagnetic spectrum can be used effectively thanks to cognitive radio technology. The ability to perceive spectrum and identify spectrum gaps is provided by the physical layer of cognitive radio. A fresh technique to increase the effective use of the electromagnetic spectrum is offered by the promising technology known as cognitive radio. High spectral resolution is made possible through spectrum sensing, which aids in the detection of the spectrum holes (underused portions of the spectrum).In this research, we describe all spectrum sensing methods and come to the conclusion that for main user (PU) signals with low SNR values, cooperative sensing is superior to non-cooperative sensing.

Keywords: Cognitive Radio, Spectrum Sensing, Electromagnetic Spectrum