

Cognitive Radio Using White TV Bands

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Abstract

The designation of the ISM band for use by unlicensed devices led to a wave of new wireless device production. While utilization of the ISM band is reaching saturation, spectrum use in other bands such as UHF/VHF (TV Bands) remains quite low. Some estimates claim that as much as 90% of the spectrum is unused (white bands) at any given time. New technological advancements in software defined radio (SDR), and spectrum management techniques can enable cognitive radios (CRs) to make use of these white TV bands, without creating interference to primary users. This paper will examine some of the key technologies enabling CRs to share TV spectrum, and explore how a shift in FCC policies could encourage CR growth similar to the ISM band. This paper concludes with a sampling of the present state of CR technologies making use of white TV signals.