COGNITIVE RADIO: AN APPROACH TO WIRELESS COMMUNICATION USING SDR

Sayali Pandit[1] , Dr (Mrs.) Soni Chaturvedi[2]

ABSTRACT

Wireless communication has been in application since a long time but the exponential increase in the various applications has given rise to problem in the efficient use of available spectrum. Due to the conventional static allocation of the available spectrum much of the spectrum is wasted and the efficiency cannot be established. To have a better utilization of the available and the wasted spectrum the concept of Cognitive Radio is used and has a better impact on both the spectrum allocation and the hardware needed. Cognitive radio has an upper hand in maintaining a good response towards spectrum sensing. Software Defined Radio is the backbone of CR (Cognitive Radio) where software coding is used to get desired results by varying the parameters of each component. Reconfiguration of parameters plays the major part in SDR. GNU Radio tool being a free and open source platform for SDR plays a major role in understanding this concept deeply. Thus cognitive radio is the base concept that helps in dynamic allocation of available spectrum efficiently.

Keywords: Cognitive Radio (CR), Conventional Radio, Software Defined Radio (SDR), GNU Radio, Spectrum Allocation.