

DYNAMIC SPECTRUM SHARING IN COGNITIVE RADIO USING FUZZY LOGIC SYSTEM

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ABSTRACT

Dynamic Spectrum Allocation is a solution to the problem of spectrum underutilization to harness the unused spectrum potentially and opportunistically. In this scheme a group of four quality parameters i.e. efficiency of spectrum use by unlicensed or secondary user, its mobility, its distance from primary (licensed) user and its signal strength have been used to make the spectrum allocation decision. The four parameters have three membership functions each which are based on the linguistic knowledge. Therefore, there are a total of 81 rules which govern the output of the fuzzy inference system. The output of this system gives the possibility of accessing the spectrum for secondary users. Obviously the user with highest possibility will be assigned the available spectrum band.

KEYWORDS: Cognitive Radio, Fuzzy Logic System, Opportunistic Spectrum Access, Knowledge-Based Spectrum Access Scheme