Abstract

Cognitive Radio (CR) is a comparatively new technology in which problems like underutilization of spectrum and spectrum scarcity is solved based on the revolutionary ideas. Cognitive Radio allows group of users to identify and access to available spectrum resources for their optimum use. Recent studies show that most of the assigned spectrum is underutilized. On the other hand, the increasing number of wireless multimedia applications leads to a spectrum scarcity. Cognitive Radio is proposed as a promising technology to solve the imbalance between spectrum scarcity and spectrum underutilization. In Cognitive Radio, spectrum sensing is done in order to locate the unused spectrum segments. This paper show the strength and capabilities of Cognitive Radio processes and what makes it more powerful over the other competitive radio. Main focus is given on Present State of Research, Architecture and Future Scope for CR. Stress is given on Application areas, where Cognitive Radio techniques can be implemented and proved out to have upper-hand than the available Intelligence and adapting Radios.

- Amna Saad Kamil and Ibrahim Khider, Open Research issues in Cognitive Radio.
- Cognitive Radio for Smart Phones Available online: http://research.nokia.com/cognitive_radio


Index Terms

Computer Science

Wireless

Keywords

Cognitive Radio  Software Defined Radio  Cognitive Cycle  Spectrum Sensing
Dynamic Spectrum Management
Spectrum Sharing
Spectrum Mobility
Primary User
Secondary User
Cognitive User