

# *Cognitive Ultra Wideband Radio*

**Soodeh Amiri**

**M.S student of the communication engineering**

**The Electrical & Computer Department of Isfahan University of Technology, IUT**

**E-Mail : [s.amiridoomari@ec.iut.ac.ir](mailto:s.amiridoomari@ec.iut.ac.ir)**

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**Abstract**-This paper introduce the concept of cognitive UWB radio, a wireless system based on UWB transmission able to self adapt to the characteristics of the surrounding environment. UWB is an promising underlying method for coexistence among different systems. However, the performance may not be as good as expected due to the changing spectrum environment. Thus, cognitive UWB radio is proposed by taking the advantage of cognition, which enables the radio to learn the spectrum environment by itself. Cognitive radio techniques enable flexible, efficient and reliable spectrum use.

**Key words:** Cognitive radio (CR); ultra wideband (UWB); spectrum sensing; spectrum sharing; primary user; secondary users.