Abstract

With the improvement in wireless technology and services, unlicensed, Industrial, Medical and Scientific (ISM) band is getting overloaded, which leads to spectrum shortage problem. On the
other hand, several part of fixed allocated spectrum is underutilized. Cognitive Radio is new and intriguing technology that enables a more flexible and efficacious usage of the radio spectrum. Basically, this technology allows unlicensed users to use licensed spectrum, without interfering with the incumbent transmission. As Cognitive radio networks are wireless in nature, they suffer from all the classic threats present in traditional wireless networks. This paper focuses on an attack that poses a threat to spectrum sensing function of CR, known as Primary User Emulation Attack (PUEA). In this attack is a malicious secondary user mimics signal characteristics of a primary user to acquire channel resources without sharing with other secondary users, thus reducing spectrum usage probability and efficiency. The objective of this paper is to highlight various security issues related to dynamic spectrum access then discuss the PUEA with the existing countermeasures to mitigate it. In addition, future security challenges are addressed.

References

- Olga León, Juan Hernández-Serrano, Miguel Soriano, Cooperative detection of primary user emulation attacks in CRNs, Computer Networks, Volume 56, Issue 14, 28 September 2012.
Index Terms

Computer Science

Wireless
Keywords