

ANTI-PUE BASED DEFENSIVE TECHNIQUE IN COGNITIVE RADIO

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Abstract

Cognitive Radio (CR) is a technology that provides variety of application e.g. broadband fixed wireless access, mobile access etc. Cognitive Radio can minimize the spectrum shortage problem by allowing unlicensed users equipped with CRs to operate in licensed band on non-interference condition to the licensed user. There are various functions of CR that increases the efficiency of spectrum usage. One of the key part of CRs is Spectrum sensing. However, little attention is given to the security of spectrum sensing. One of the threats to spectrum sensing is the primary user emulation (PUE) attack. In this attack, attacker mimics the characteristic of the primary user so that secondary user cannot identify which is the primary user and which is the attacker. Various techniques are given to thwart this PUE attack. In this paper, review of defensive techniques of anti-PUE attack has been taken. It includes the Transmitter Verification Scheme, verification technologies of Distance Ratio Test (DRT) and Distance Difference Test (DDT).

Keywords ; Cognitive Radio, Communication system security, Primary User Emulation Attack, Localization, Wireless Sensor Network.