A Safe Cognitive Radio Spectrum Handoff Method Using Coordinating Cognitive User

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Abstract: A new cognitive user emulation attack (CUEA) in a cognitive radio network (CRN), which could be utilized by intruders during spectrum handoff is introduced. The need for more efficient spectrum utilization in an increasingly digitalized society is becoming more important. This has given rise to the variety of new security threats. A safe handoff mechanism that could successfully counter such an attack by introducing a coordinating cognitive user that computes the level of trust of each cognitive user based on its behavioral characteristics is proposed. Malicious users could be effectively identified by the coordinating cognitive user by looking up the trust values. The activity of the proposed mechanism is validated using MATLAB simulation. The simulation executed describes the utilization of the proposed mechanism by correctly identifying the probability of false detection, detection rate, incorrect detection shown as it decreases the data transmission time or increases the transmission rates of primary user's signals.

Keywords: Cognitive User Emulation Attack

REFERENCES


