Abstract

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Mitigating the Impact of Malicious Behavior via Utilizing Multiple Routes in a Cooperative Sensing Cognitive Radio Network

Aiming at improving the utilization of the available spectrum in Cognitive Radio Networks without interrupting the Primary User’s (PU) access to its radio asset, is a primary issue in this topic. Cooperative sensing techniques have been put forward to alleviate the accuracy of the radio access decision compensating for the intrinsic sensing errors in the devices if each on their own were to be relied on their sensing reports solely. But collaborating Secondary Users (SU) might pose a potential security threat, since a malicious node among the SUs might modify the resulted sensing reports according to its personal benefit. In this paper, we are studying how multiple routes might mitigate the effect of the malicious node. The study contrasts the impact of the malicious node by applying multiple routes versus the regular one route for each source. Results have been harvested from simulating the network in ns-3.