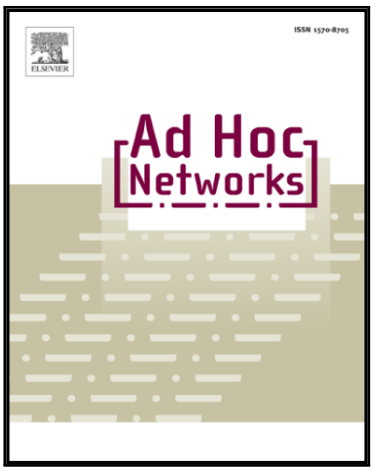

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Securing Multi-channel Selection using Distributed Trust in Cognitive Radio Ad hoc Networks[☆]

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Abstract

Cognitive radio ad hoc networks (CRAHNs) which are independent with infrastructure and fixed spectrum allocation policy, have been developed rapidly in the environment of scarce spectrum resources. However, the nature of multi-channel makes CRAHNs offers opportunities for malicious SUs. Cooperative spectrum sensing (CSS) is the key function of CRAHNs to identify the idle spectrum as the available channel by aggregating sensing data. Malicious SUs can launch spectrum sensing data falsification (SSDF) attack against CSS, and thus causing the disturbance of finding multi-channel. Recently, a lot of efforts with trust schemes have been paid to combating SSDF attack in central cognitive radio environments, but little attention to the distributed environments. In this paper, we propose a distributed trust evaluation (DTE) scheme from the perspective of direct experience and neighbor help to counter SSDF attack, which can be implemented at each SU in CRAHNs rather than a central authority. To secure multi-channel selection fully, it is very important to avoid the conflict among

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