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A wireless cognitive radio network with a synchronized cooperative relaying

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This paper attempts to apply cooperative relay in an underlay wireless cognitive radio network, where all of the secondary user nodes draw their power from a primary user within a certain threshold level in order not to interfere with it. The network is divided into pairs, and each pair is assumed to have synchronized exchange-relay ability, i.e. performing data transmission and providing an alternative path to the direct link of the other pair. The simulation results prove that enabling relay technique gives significant enhancements to the system's performance through decreasing the outage probability. Furthermore, the efficiency has been improved by inviting all the nodes to participate in providing multiple paths to exchange data, which in turn gives a robust cognitive radio network.

Biography

Zaid A Shafeeq received his B.E. degree in Communications and Electronics Engineering from Isra University, Jordan in 2010, and his M.E. in Communications Engineering from Al Ahliyya Amman University, Jordan in 2015. His area of interest includes Fifth Generation of Mobile Communications, Long Term Evolution (LTE) technology, and Communications Networks.

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