Abstract

This paper presents, a spectrum sharing strategy in cooperative cognitive radio network (CCRN). A multi-phase cooperation architecture is explained and studied with cooperation partner selection and spectrum sharing among secondary users (SUs). The data of primary users (PUs) forwarded to the cooperation partners who are selected from SUs, and then acquire the spectrum access opportunities for their own transmissions as a reward. The partner selection is modeled as an optimally weighted bipartite matching problem to maximize the total utility where energy efficiency is also considered just to increase the utility for the PU-SU cooperation pairs. By the partner SU further improvisation in the spectrum utilization is done by sharing the acquired spectrum with the surrounding SUs via cooperative network coding. At the end the simulation results provided, which shows that to the dynamic traffic loads in CCRN, the proposed partner selection and spectrum sharing approach adapts well.


10. “Spectrum Sharing Strategy using Bipartite Matching for Cooperative Cognitive Radio Networks” Yujie Tang, Yongkang Liu, Jon W. Mark and Xuemin (Sherman) Shen Centre for Wireless Communications, University of Waterloo, ON, Canada, N2L 3G1 Globecom 2013 - Cognitive Radio and Networks Symposium

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