Title: Clustering Approach for Radio Resource Management in High Density Wireless Local Area Networks

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Abstract*

From our fundamental study, we find that high density wireless LANs can introduce a high hidden node index, resulting in rapid reduction of the overall system performance. In this paper, we propose the clustering approach for radio resource management to alleviate the degradation of the overall system performance. The main objective of such algorithm is to reduce the hidden node index, therefore enhancing the performance of the system. We conduct two studies: experimental study by using wireless network test-bed and simulation study by using OPNET Modeler. The former is to measure the saturated throughput of the base system while the latter is to simulate the wireless network in high density scenarios.

The results show that the proposed algorithm outperforms the traditional approach at the high degree of network density (greater than 9.3). Therefore, the proposed algorithm is a better alternative in such settings.

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