

In this paper we consider a cognitive wireless mesh network where unlicensed users (secondary users, SUs) can use the unused licensed spectrum allocated to primary users (PUs). Wireless mesh networks (WMNs) have emerged recently to improve internet access and other networking services. WMNs routers provide network access to the clients and other networking functions such as routing, and packet forwarding. Spectrum scarcity is the main challenge that limits the performance of WMNs. Although considerable research has been conducted on spectrum allocation, spectrum assignment is still considered an important open problem. This problem can be solved using cognitive radio technology that allows radios to intelligently locate free frequencies and assign them to users. In addition to consider quality of service (QoS) of users, our scheme uses several heuristics for allocating channels. These heuristics include channel error rate, PUs activities, channel capacity and channel switching time. Performance evaluation of the proposed scheme shows that the scheme is able to allocate the unused spectrum for SUs efficiently.