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# Review of Channel Assignment Approaches in Multi-radio Multi-channel Wireless Mesh Network

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## Abstract

The Channel Assignment (CA) is an efficient tool to exploit multiple non-overlapping channels to minimize interference and enhance the capacity of the wireless mesh network. Even though the CA can minimize the total network interference, its result may cause some design issues which influence the network performance. First, the CA alters the network topology which in turn may produce unconnected logical topology. Second, the interaction between the CA and routing protocol where the effective capacity of each link depends on the routing decision and the result of CA. In this article we focus on multi-radio, multi-channel wireless mesh network. First, we defined the channel assignment (CA) design issues. Second, we classified the CA approaches based on the main design issues. For each CA approach, its advantages and limitations are highlighted. Third, the overall comparison for the classification is given in details. Finally, we discussed the future research direction for channel assignment.

*Keywords:* Wireless mesh network; Multi-radio; Multi-channel; Channel allocation; Channel assignment;

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