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Medium Access Control protocols for ad hoc wireless networks: A survey

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Abstract

Studies of ad hoc wireless networks are a relatively new field gaining more popularity for various new applications. In these networks, the Medium Access Control (MAC) protocols are responsible for coordinating the access from active nodes. These protocols are of significant importance since the wireless communication channel is inherently prone to errors and unique problems such as the hidden-terminal problem, the exposed-terminal problem, and signal fading effects. Although a lot of research has been conducted on MAC protocols, the various issues involved have mostly been presented in isolation of each other. We therefore make an attempt to present a comprehensive survey of major schemes, integrating various related issues and challenges with a view to providing a big-picture outlook to this vast area. We present a classification of MAC protocols and their brief description, based on their operating principles and underlying features. In conclusion, we present a brief summary of key ideas and a general direction

for future work.

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Keywords

Ad hoc networks; Wireless networks; MAC; Medium Access Control; Quality of Service (QoS); MANET

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