

WiFi Ad-hoc Message Propagation over GPRS Networks

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Abstract

Mobile ad hoc networks (MANETs) are networks that can be created spontaneously with no prior set up. Arbitrary nodes can form such networks by intercommunicating directly in a peer-to-peer fashion using wireless communication technologies, such as IEEE 802.11 (or WiFi).

The number of WiFi-enabled handheld devices is escalating as the services they offer attract an increasing number of customers. These devices have the capability of creating MANETs regardless of any infrastructure. Such networks can be used to circulate data across the network at high rates.

However, MANETs are networks of very special nature. They feature delays of unexpected lengths, high retransmission rates (due to radio interference, obstacles, and packet collisions), and unpredictable node relocation. For these reasons, MANETs tend to have unstable topologies.

In this project, we present a solution for exchanging messages in MANETs formed by WiFi-enabled handheld devices. We implement the proposed solution using the network simulator ns2, and investigate its behaviour and performance under different network conditions.

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