

# The design and development of Mobile Ad Hoc Networks

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## Abstract

Wireless (and hence mobile) communication networks have become an integral part of our society, significantly enhancing communication capabilities; mobile ad hoc networks (MANETs) extend this capability to any time/anywhere, providing connectivity without the need of an underlying infrastructure. This work aims to investigate the newcoming area of mobile ad hoc networks, focusing on research problems related to the design and development of routing protocols, both from a formal and technical point of view.

## Index Terms

wireless, mobile ad hoc network, protocol, routing.

## I. INTRODUCTION

THE most "distributed" computing environment known today is the Internet, with its spontaneous growing size, its open architecture, its being a generally available repository of unstructured information, and so on.

New research directions in theoretical computer science and in particular in protocol design make use of game-theory concepts and tools. From this "perspective", protocols are viewed as games with players represented by network nodes which "play" (participate in) the game; each node (agent) has its own utility function, such as network flow (to be maximized) or energy consumption (to be minimized): so this approach is a natural point-of-view of a distributed computing architecture, the most interesting paradigm in actual computer science theoretical studies (as detailed in next section).