

Multimedia Encryption, Transmission and Authentication

Edited by

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INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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Chapter 27

ISSUES IN LOCATION-BASED MULTICAST ROUTING IN MANETS

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27.1. Introduction

Mobile Ad Hoc Networks (MANETs) are an autonomous system of a set of **mobile** nodes connected by shared wireless links, forming a temporary network without relying on any infrastructure. MANETs characteristics include self-organizing, self-configuring, multihop communication, continuous mobility and strict resource limitation. These characteristics coupled with the characteristics of the wireless communication medium make routing protocols one of the major issues to consider in MANETs.

Nowadays there is a pressing need for large-scale Ad hoc networks in order to support applications with large number of nodes. This claim is reasonable, due to the evolution in mobile communications. As a consequence scalable routing in MANETs has received significant attention over the recent years [1].

Since MANETs must operate in a physical geometric space, they naturally need to exploit location information. In our approach, we assume that mobile nodes can find their own locations using a Global Positioning System (GPS) or any GPS-free techniques. This requirement is quite realistic today since these receivers are available, small in size, inexpensive, low-power and can provide reasonable precision indoor and outdoor [2].

27.2 Location-based multicast routing in manets

Location-based multicast routing protocols are based on the availability of relative location information of the network nodes. The geographical information for each node is determined using GPS receivers or other positioning service. In location-based multicast