Multimedia Encryption, Transmission and Authentication

Edited by

Othman Omran Khalifa, B.Sc. ,M.Sc., Ph.D
International Islamic University Malaysia

Aisha-Hassan Abdulla, B.Sc., M.Sc., Ph.D.,
International Islamic University Malaysia

Teddy Surya Gunawan, B.Sc., M.Sc., Ph.D.,
International Islamic University Malaysia

IIUM PRESS

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

Multimedia Encryption, Transmission and Authentication

Edited by

Othman Omran Khalifa, B.Sc. ,M.Sc., Ph.D
International Islamic University Malaysia

Aisha-Hassan Abdulla, B.Sc., M.Sc., Ph.D.,
International Islamic University Malaysia

Teddy Surya Gunawan, B.Sc., M.Sc., Ph.D.,
International Islamic University Malaysia

IIUM Press

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011

Cataloguing-in-Publication Data Perpustakaan Negara Malaysia

ISBN: 978-967-418-160-4

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :
IIUM PRINTING SDN. BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan

Contents

Chapter 27

ISSUES IN LOCATION-BASED MULTICAST ROUTING IN MANETS

MOHAMMAD QABAJEH[1], AISHA-HASSAN A. HASHIM[2], OTHMAN KHALIF[3] AND LIANA QABAJEH[4]

ECE Dept, Fac. of Eng., International Islamic Univ. Malaysia (IIUM), Jalan Gombak, 53100 Kuala Lumpur, Malaysia.

m_qabajeh@yahoo.com[1], aisha@iiu.edu.my[2], Khalifa@iiu.edu.my[3], liana_tamimi@ppu.edu[4]

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