CALL FOR CHAPTERS

Proposals Submission Deadline: 7/15/2009
Full Chapters Due: 9/15/2009
Emerging Technologies in Wireless Ad-hoc Networks:
Applications and Future Development
A book edited by Raúl Aquino Santos, Arthur Edwards (University of Colima),
and Victor Rangel Licea (National Autonomous University of Mexico)

Introduction

Historically, wireless ad-hoc networks have primarily been used for tactical network-related applications to improve battlefield communications and survivability. The dynamic nature of military applications means it is not always possible to rely on access to a fixed pre-placed communication infrastructure on the battlefield. The Packet Radio Network (PRNET), under the sponsorship of the Defense Advanced Research Project Agency (DARPA), is considered the precursor of mobile wireless ad-hoc networks (MANET).

PRNET was the first implementation of wireless ad-hoc networks with mobile nodes. This was primarily inspired by the efficiency of packet switching technology, such as bandwidth sharing and store-and-forward routing and its possible applications in mobile wireless environments. Survivable Radio Networks (SURANs) were deployed by DARPA in 1983 to address open issues in PRNET in the areas of network scalability, security, processing capability, and energy management. The main objectives of this effort were to develop network algorithms to support networks that can scale to tens of thousands of nodes and can resist security attacks, as well as use small, low cost, low-power radio that could support more sophisticated packet radio protocols. This effort resulted in the design of Low-cost Packet Radio (LPR) technology in 1987, which featured a digitally controlled Direct Sequence (DS) spread spectrum radio with an integrated Intel 8086 microprocessor-based packet switch.

Although early MANET application and deployments were military oriented, non-military applications have grown substantially since then and have become the main focus today. This has been particularly true the last few years due to rapid advances in mobile ad-hoc network research. Mobile ad-hoc networks have attracted considerable attention and interest from the commercial sector as well as the standards community. The introduction of new standards such as IEEE 802.15.3, IEEE 802.15.4, IEEE 802.11g, and IEEE 802.16e greatly facilitate the deployment of wireless ad-hoc technology outside the military domain. As a result, many new ad-hoc networking applications have since been conceived to help enable new commercial and personal communication beyond the domain of tactical networks, including personal area networking, home networking, law enforcement operations, search and rescue operations, commercial and educational applications, sensor networks, and so on.

Objective of the Book

The objective of this book is to provide the rationale, state-of-the-art studies and practical applications, proof-of-concepts, experimental studies, and future development on the use of emerging technologies in wireless ad-hoc networks.

In addition, the book will explore emerging wireless ad hoc technologies based on communication coverage areas: body sensor networks, personal area networks, local area networks, and metropolitan area networks and their applications in critical sectors, for example, agriculture, environment, public health and public transportation.

Target Audience
The target audience of this book will be composed of professionals and researchers working in the fields of electronics, communications, and computer science, as well as students, teachers, instructors, and academics from other related areas.

Recommended Topics
This book will include (but will not be limited to) the following topics on the use of emerging technologies in wireless ad-hoc networks, including present applications and future development.

- Body sensor networks,
- Personal area networks,
- Local area networks,
- Metropolitan area networks and its applications in:
- Agriculture,
- Environmental,
- Transportation,
- Public health,
- Education.

The book will include a suitable balance of electronic, communications and computer science.

The book seeks to include works from the following computing areas:

- Electronics
- Communications
- Computer Networks
- Computer Security
- Digital Forensics
- Software Engineering
- Human-computer Interaction
- Mobile and Ubiquitous Computing
- Social Computing
- Artificial Intelligence
- Information Technology
- Informatics
- Telematics
- Computer Electronics

Submission Procedure

Researchers and practitioners are invited to submit a 2-3 page chapter proposal (Word document) on or before **July 15 , 2009,** clearly explaining the mission and concerns of their proposed chapter. Authors of submitted proposals will be notified by **July 30, 2009** about the status of their proposals. Accepted proposals will receive chapter guidelines upon notification. Full chapters are expected to be submitted by **September 30, 2009**. All submitted chapters will be reviewed on a double-blind review basis.

Publisher
This book is scheduled to be published by IGI Global (formerly Idea Group Inc.), publisher of the "Information Science Reference" (formerly Idea Group Reference), "Medical Information Science Reference" and "IGI Publishing"imprints. For additional information regarding the publisher, please visit www.igi-global.com. This publication is anticipated to be released in late 2010.

Important Dates

July 15, 2009: *Proposal Submission Deadline*
July 30, 2009: *Notification of Acceptance*
September 30, 2009: *Full Chapter Submission*
November 30, 2009: *Review Results Returned*
March 31, 2010: *Final Chapter Submission*

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