

ISSN: 1913-3715 Volume 10, Number 9, September 2017



# International Journal of Communications, Network and System Sciences



[www.scirp.org/journal/ijcns](http://www.scirp.org/journal/ijcns)

# JOURNAL EDITORIAL BOARD

ISSN 1913-3715 (Print) ISSN 1913-3723 (Online)  
<http://www.scirp.org/journal/ijcns>

## Editor-in-Chief

Prof. Boris S. Verkhovsky

New Jersey Institute of Technology, USA

## Editorial Board

Dr. Hamid Ali Abed Al-Asadi

Basra University, Iraq

Prof. Sabri Arik

Istanbul University, Turkey

Prof. Jalel Ben-Othman

Université de Paris, France

Prof. Zhenmin Chen

Florida International University, USA

Prof. Ko Chi Chung

National University of Singapore, Singapore

Prof. Daniel B. da Costa

Federal University of Ceará, Brazil

Dr. Franca Delmastro

National Research Council, Italy

Dr. Qiang Duan

Pennsylvania State University Abington College, USA

Prof. Md. B. El-Mashade

Al-Azhar University, Egypt

Prof. Kurt J. Engemann

Iona College, USA

Prof. Morteza Esmaeili

Isfahan University of Technology, Iran

Prof. George Ghinea

Brunel University, UK

Prof. William A. Gruver

Simon Fraser University, Canada

Dr. Zhiyi Huang

University of Otago, New Zealand

Prof. Anca Daniela Ionita

University Politehnica of Bucharest, Romania

Prof. Hiroaki Ishii

Kwansei Gakuin University, Japan

Dr. Chris Joslin

Carleton University, Canada

Prof. Jozef Kelemen

Silesian University, Czech Republic

Prof. Alexander M. Korsunsky

Oxford University, UK

Prof. Felipe Lara-Rosano

National Autonomous University of Mexico, Mexico

Prof. Shahram Latifi

University of Nevada, USA

Dr. Nicola Mastronardi

National Research Council, Italy

Dr. Yuriy Polyakov

New Jersey Institute of Technology, USA

Prof. Jianbin Qiu

Harbin Institute of Technology, China

Prof. Kosai Raouf

Joseph Fourier University, France

Prof. Gerhard Ritter

University of Florida, USA

Dr. Ashok N. Rudrapatna

Bell Labs, Alcatel-Lucent, USA

Dr. Arif Sari

Girne American University, Cyprus

Prof. Innokentiy V. Semushin

Ulyanovsk State University, Russia

Prof. Sergei Silvestrov

Mälardalen University, Sweden

Dr. Maolin Tang

Queensland University of Technology, Australia

Prof. Zahir Tari

RMIT University, Australia

Prof. Hrishikesh Venkataraman

Dublin City University, Ireland

Prof. Lotfi A. Zadeh

University of California, USA

# Table of Contents

**Volume 10    Number 9**

**September 2017**

## **Evaluation of Broadband Network Performance in Nigeria**

B. M. Kuboye.....199

# International Journal of Communications, Network and System Sciences (IJCNS)

## Journal Information

### SUBSCRIPTIONS

The *International Journal of Communications, Network and System Sciences* (Online at Scientific Research Publishing, [www.SciRP.org](http://www.SciRP.org)) is published monthly by Scientific Research Publishing, Inc., USA.

#### Subscription rates:

Print: \$89 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### SERVICES

#### Advertisements

Advertisement Sales Department, E-mail: [service@scirp.org](mailto:service@scirp.org)

#### Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### COPYRIGHT

#### Copyright and reuse rights for the front matter of the journal:

Copyright © 2017 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

#### Copyright for individual papers of the journal:

Copyright © 2017 by author(s) and Scientific Research Publishing Inc.

#### Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

#### Disclaimer of liability

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

### SPONSOR

International School of Software, Wuhan University ([iss.whu.edu.cn](http://iss.whu.edu.cn)).

### PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: [ijcns@scirp.org](mailto:ijcns@scirp.org)



## International Journal of Communications, Network and System Sciences (IJCNS)

ISSN 1913-3715 (Print) ISSN 1913-3723 (Online)  
<http://www.scirp.org/journal/ijcns>

**IJCNS** is an international refereed journal dedicated to the latest advancement of communications and network technologies. The goal of this journal is to keep a record of the state-of-the-art research and promote the research work in these fast moving areas.

### Editor-in-Chief

**Prof. Boris S. Verkhovsky**

New Jersey Institute of Technology, USA

### Subject Coverage

This journal invites original research and review papers that address the following issues in wireless communications and networks. Topics of interest include, but are not limited to:

Ad Hoc and Mesh Networks	Network Protocol, QoS and Congestion Control
Coding, Detection and Modulation	Network Survivability
Cognitive Radio	Next Generation Network Architectures
Communication Networks Architecture Design	Reconfigurable Networks
Communication Reliability and Privacy	Resource Management
Communication Security and Information Assurance	Satellite Communication
Cooperative Communications	Sensor Networks
Embedded Distributed Systems	Simulation and Optimization Tools
Global Networks	UWB Technologies
Heterogeneous Networking	Wave Propagation and Antenna Design
Microprocessor	Wireless Personal Communications
MIMO and OFDM Technologies	

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the IJCNS.

### Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

### Website and E-Mail

<http://www.scirp.org/journal/ijcns>

E-Mail: [ijcns@scirp.org](mailto:ijcns@scirp.org)

## ***What is SCIRP?***

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

## ***What is Open Access?***

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



**Scientific  
Research  
Publishing**

**Website: <http://www.scirp.org>**

**Subscription: [sub@scirp.org](mailto:sub@scirp.org)**

**Advertisement: [service@scirp.org](mailto:service@scirp.org)**