

# **2009 First International Conference on Communications and Networking**

**(ComNet 2009)**

**Hammamet, Tunisia  
3 – 6 November 2009**



**IEEE Catalog Number: CFP0908I-PRT  
ISBN: 978-1-4244-5134-0**

# TABLE OF CONTENTS

## **SESSION 1: WIRELESS NETWORKS**

<b>Performance Estimation and Power Minimizing Scheme for a Mobile Adhoc Networking Node</b> .....	1
<i>Jihane Ben-Abderrazak, Yukikuni Nishida, Hiroaki Nishikawa</i>	
<b>Overlay Routing Efficiency During Internet Outages</b> .....	7
<i>Simon Delamare, Michel Riguidel</i>	

## **SESSION 2: OFDM/CDMA**

<b>Fading Effect on the Dynamic Performance Evaluation of OFDMA Cellular Networks</b> .....	14
<i>Bartłomiej Blaszczyzyn, Mohamed Kadhem Karray</i>	
<b>Comparison of AF and DF Relaying for Uplink CDMA Communications Subject to Constant Multiple Access Interference Cost</b> .....	22
<i>Naoufel Debbabi, Sami Chtourou, Ines Kammoun, Mohamed Siala</i>	

## **SESSION 3: DISTRIBUTED NETWORKS AND SERVICES**

<b>Collaborative Strategy Learning for Distributed Network Self-Configuring</b> .....	28
<i>Maïssa Mbaye, Francine Krief, Henry Soldano</i>	

## **SESSION 4: IP NETWORKS**

<b>Analytical Jitter Model for IP Network Planning and Design</b> .....	36
<i>H. Dahmouni, A. Girard, B. Sansò</i>	
<b>Achieving Broadcasting Efficiency in V2X Networks with a Distance-based Protocol</b> .....	43
<i>Fatma Hrizi, Fethi Filali</i>	

## **SESSION 5: ALLOCATION MECHANISMS**

<b>Control and Data Channels Allocation for Large-Scale UWB-based WSNs</b> .....	51
<i>Jamila Ben-Slimane, Ye-Qiong Song, Anis Koubâa</i>	
<b>Efficient Backward Compatible Allocation Mechanism for Multi-User CSMA/CA Schemes</b> .....	59
<i>Mohamed Kamoun, Laurent Mazet, Sophie Gault</i>	

## **SESSION 6: SECURITY & RESOURCE SAVING**

<b>SeGCom: A Secure Group Communication Mechanism in Cluster-Tree Wireless Sensor Networks</b> .....	65
<i>Olfa Gaddour, Anis Koubâa, Mohamed Abid</i>	
<b>S-Promela: An Executable Specification Security Policies Language</b> .....	72
<i>Ryma Abbassi, Sihem Guemara El-Fatmi</i>	
<b>Resource Saving Logical Topology Design for Reconfigurable Next Generation Internet Backbones</b> .....	80
<i>Nihed Bahria El-Asghar, Mounir Frikha, Sami Tabbane</i>	

## **SESSION 7: MULTI-CHANNEL ACCESS**

<b>Proposition and Analysis of Multi-Channel Cognitive MAC Protocols with Parallel Transmission of Traffic and UWB Control Information</b> .....	86
<i>Inès Aïssa, Mounir Frikha, Sami Tabbane</i>	

<b>Multi-Radio Multi-Channel Routing Metrics in IEEE 802.11s-based Wireless Mesh Networks - And the Winner Is .....</b>	95
<i>Sana Ghannay, Sonia Mettali Gammar, Fethi Filali, Farouk Kamoun</i>	

### **SESSION 8: SENSOR NETWORKS**

<b>A Prioritized Multi-Channel Multi-Timeslot MAC Protocol for Large-Scale Wireless Sensor Networks.....</b>	103
<i>Jamila Ben-Slimane, Ye-Qiong Song, Anis Koubâa</i>	
<b>WCDS-Induced Routing for Data-Aggregation in Wireless Sensor Networks.....</b>	111
<i>Nesrine Chakchouk, Bechir Hamdaoui, Mounir Frikha</i>	

### **SESSION 9: SECURITY**

<b>Link Analysis Approach to Improve Detection of Fragmentation Attacks in Misuse IDS.....</b>	117
<i>Olfa Ben-Ahmed, Zied Choukair</i>	
<b>A Generic Model for Delegation in Security Policies.....</b>	125
<i>Ryma Abbassi, Sihem Guemara El-Fatmi</i>	

### **SESSION 10: AVAILABILITY AND PORTABILITY**

<b>High Availability in IMS Virtualized Network .....</b>	133
<i>Malek Fakhfakh, Inen Limam-Bedhiaf, Omar Cherkaoui, Mounir Frikha</i>	
<b>An Adaptive Control Algorithm in Intelligent Home Networks.....</b>	139
<i>Kaouthar Sethom Ben-Reguiga, Nadjib Aitsaadi, Guy Pujolle</i>	

### **SESSION 11: CODING**

<b>Asynchronous DS-UWB Communication Using Spatiotemporal Chaotic Waveforms and Sequences.....</b>	146
<i>Ali Kotti, Soumaya Meherzi, Sylvie Marcos, Safya Belghith</i>	
<b>Improving 3-Dimensional Turbo Codes Using 3GPP2 Interleavers.....</b>	151
<i>D. Kbaier Ben-Ismaïl, C. Douillard, S. Kerouédan</i>	

### **SESSION 12: WIRELESS NETWORKS**

<b>Vertical Handover Based on IEEE 802.21 and Mobile IPv6 in UMTS/WLAN Networks.....</b>	158
<i>Sarra Benoubira, Mounir Frikha, Sami Tabbane, Khobeib Ayadi</i>	
<b>Performance Analysis of SCTP Protocol in WiFi Network.....</b>	164
<i>Sinda Boussen, Nabil Tabbane, Sami Tabbane</i>	

**Author Index**