New Technologies, Mobility and Security

Program of NTMS’2009 Conference and Workshops
AGENDA

PREFACE .......................................................................................................................... i
MESSAGE FROM THE GENERAL CHAIRS ..................................................................... ii
Message from the TPC Co-Chairs ................................................................................... iii
NTMS’2009 CONFERENCE COMMITTEE ........................................................................ v

Sunday, December 20 ........................................................................................................ 1
09:00 - 12:30
Tutorial: WSN electromagnetic wave propagation environments ................................ 1
10:30 - 11:00
Coffee Break ...................................................................................................................... 1
14:00 - 17:30
Tutorial : Post-IP Networks (knowledge, piloting, virtualization, security, etc.) ............. 1
15:30 - 16:00
Coffee Break ...................................................................................................................... 1

Monday, December 21 ....................................................................................................... 2
09:00 - 10:30
Opening Plenary ................................................................................................................. 2
Workshop: WSN ................................................................................................................ 2
10:30 - 11:00
Coffee Break ...................................................................................................................... 2
11:00 - 12:45
Mobility Analysis, simulation, measurement and performance evaluation .................... 2
Audio-Visual Applications ............................................................................................... 2
Secure Services .................................................................................................................. 3
12:45 - 14:00
Lunch ............................................................................................................................... 3
14:00 - 16:00
WiMAX ............................................................................................................................ 3
NGN Architectures ......................................................................................................... 4
Wireless Sensor Network Security .................................................................................. 4
16:00 - 16:20
Coffee Break ...................................................................................................................... 5
16:20 - 18:00
Multimedia Protocols / Applications .............................................................................. 5
Algorithms and Protocols for New Services ................................................................. 5
Biometric Security; Information Hiding .......................................................................... 6
Tuesday, December 22

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 - 10:30</td>
<td>Mobility services and management</td>
</tr>
<tr>
<td></td>
<td>Network and System Security</td>
</tr>
<tr>
<td>10:30 - 11:00</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>11:00 - 12:45</td>
<td>Home Networks</td>
</tr>
<tr>
<td></td>
<td>Cryptographic Hardware; Physical Layer Security Protocols</td>
</tr>
<tr>
<td>12:45 - 14:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30 - 15:30</td>
<td>Workshop: WSN</td>
</tr>
<tr>
<td>14:00 - 16:00</td>
<td>Routing/QoS for WSN and MANETS</td>
</tr>
<tr>
<td>15:30 - 18:00</td>
<td>Workshop: SCLP</td>
</tr>
<tr>
<td>16:00 - 16:20</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>16:20 - 18:00</td>
<td>NTMS Poster &amp; Demo 2009 workshop</td>
</tr>
<tr>
<td>19:00 - 22:00</td>
<td>Banquet</td>
</tr>
</tbody>
</table>

Wednesday, December 23

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 - 11:00</td>
<td>Data and Network Protocols</td>
</tr>
<tr>
<td>11:00 - 11:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>11:30 - 12:30</td>
<td>Keynote: Computing with Manycores and Heterogeneous Processors: The Productivity Challenges</td>
</tr>
<tr>
<td>12:30 - 14:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>14:00 - 16:00</td>
<td>Mobility management and Handover</td>
</tr>
</tbody>
</table>

WSN Program

SCLP Program
PREFACE

It is our great pleasure to welcome you to NTMS'2009, the Third International Conference on New Technologies, Mobility and Security, held on 20 to 23rd December 2009 in Cairo, Egypt, technically sponsored by IEEE COMSOC, IFIP TC6 WG and IEEE Egypt. The conference was organised by TELECOM ParisTECH, CNRS/LIMOS Laboratory, American University in Cairo, in cooperation with Ain Shams University and Orange Lab - Cairo.

NTMS 2009 offers the best tutorial, keynotes featuring technical paper presentations and demonstrations.

This year, submissions are processed under three tracks: New Technologies, Mobility and Security. The core of the technical program is the careful selection of interesting and novel research papers selected for presentation at the conference that you will find in this volume.

In response to the call for papers, 200 papers were submitted to the conference. These papers were evaluated on the basis of their significance, novelty, and technical quality. Each paper was reviewed by at least two members of the program committee and up to five reviews in case of disagreement. Of the papers submitted, 64 were selected as regular paper for presentation at the conference, giving an acceptance rate of about 32%. Further, we selected 9 short papers describing potentially interesting work but not yet mature as regular paper to be presented in two poster sessions.

We further feature two stimulating keynote speeches by Dr. Bertrand du Castel (Schlumberger Fellow) and by Dr. Tarek El-Ghazawi (George Washington University). In addition to the regular papers and poster sessions, we have a full schedule of Tutorials and Workshops. The Chairs of these events have selected 2 tutorials and 2 workshops.

There is a long list of people who volunteered their time and energy to put together the conference and who deserve acknowledgment. Thanks to all members of the Technical Program Committee, and the external reviewers, for their hard work in evaluating and discussing papers and last but not least their patience in supporting the nagging of TPC co-chairs.

We would like to thank the steering committee and the local organizer for their support. In particular, Dr. Ibrahim Hajjeh's prompt and helping hand was instrumental to the success of the conference. We are also very grateful to all other NTMS'2009 organizers whose work ensured a smooth organizational process. Thanks to Orange R&D in Cairo for their technical and financial support; in particular to Drs. Ayman Ibrahim and Ayman Hassan.

Our last but not least thanks go to all the authors who submitted papers and all the attendees. We hope you will enjoy the conference. See you at NTMS'2009.

Mohamad Badra – Dhofar University, Oman
On behalf of the Steering Committee
Message from the general Chairs

On behalf of the organization staff and the technical committee, we welcome you to the Third International Conference on New Technologies, Mobility and Security (NTMS 2009) in Cairo, Egypt.

After the huge success of 2007 and 2008 editions, NTMS continued this year to receive and produce high quality of research papers on new and mobile technologies and their security. This year, we received around 200 submissions. In average, each paper was distributed to three reviewers from the experts of the program committee.

The program features papers on leading edge topics, submitted by scholars from around the world. These papers, together, advance our knowledge of the conference topics. They provide insights into security for computerized non-computerized systems, examine the continually emerging roles of mobile technologies for society, and anticipate some new and exciting technological futures.

The conference covers all areas concerning mobility, new technologies and security. In parallel to regular sessions, the conference takes the option to organize three workshops dealing with very specific areas in relation with the conference topics. Those workshops are focusing on the following areas: electronic systems and applications, sensor networks, service computing and positioning, technology demonstration and vehicular technologies.

Two prior editions of NTMS were organized. The first edition, NTMS 2007, took place in Paris, France while the second edition, NTMS 2008, took place in Tangier, Morocco. The conference is organized through collaboration with many sponsors (IEEE, IFIP, Orange, Telecom ParisTech, CNRS, Ain Shams University and the American University in Cairo). We are grateful for their support to the conference organisation.

We want to thank the authors for their submissions. Also, we address our gratitude to the reviewers for their multiple reviews during the selection process. We give a special thank to Pascal Lorenz, Joel Rodrigues, Albert Levi, Roberto Di Pietro, Hassnaa Moustafa and Amr El-Kadi to co-chair the technical program committee and to their strong participation to the paper selection. We thank also Nicolas Sklavos, Ayman Ibrahim for the workshop organization; Bertrand du Castel and Ayman Hassan for the tutorial organization; James Hughes for chairing the keynote; Reem Bahghat, Mohamed Taher and Abou El-Alalaa Heussien for all the time that will spend during the conference to provide a perfect organization.

Finally, we have to thank Mohamed Badra for spending a huge amount of time to help in all the conference tasks.

See you in Cairo.

Khaldoun Al Agha and Gregory Newby
NTMS 2009 General co-chairs
Message from the TPC Co-Chairs

It is our great pleasure to welcome you to NTMS'2009, the Third International Conference on New Technologies, Mobility and Security, held on 20 to 23rd December 2009 in Cairo, Egypt, technically sponsored by IEEE COMSOC, IFIP TC6 WG and IEEE Egypt.

NTMS'2009 is an exciting event that provides a dynamic forum for researchers, students and professionals to present their state-of-the-art research and development in the areas of New Technologies, Wireless Networks, Mobile Computing, Ad hoc and Ambient Networks, QoS, Network Security and E-commerce, to mention a few. This year's program introduces high-quality research of both industrial and academic relevance, and offers an ideal forum for researchers from both the academia and the industry to meet, exchange ideas, and learn about the state-of-the-art in the fields of New Technologies, Mobility and Security.

This year submissions are processed under three tracks: New Technologies, Mobility and Security.

1. **New Technologies Track**: It aims to present and discuss the recent advances and novel aspects of technology, applications and services development to help create pathways for the development of common goals in convergent networks environments. In response to our call for paper, we received 50 papers submissions, of which 17 papers were selected for oral presentation, and 3 papers were selected for poster presentation. The paper selection process was a result of a thorough peer review process allowing an acceptance rate of 40%. Great thanks go to our program committee members for helping to assemble such a strong technical program and to NTMS 2009 Steering Committee who devoted an enormous amount of time in following the organisation of this track.

2. **Mobility Track**: The response to our call for papers for the Mobility Track was also strong. We received 77 submissions. All papers received at least two independent reviews, and some received as many as four reviews. Based on the reviews of the TPC members, we selected 28 papers for oral presentation and 3 papers for poster presentation. We would like to thank the authors for their submissions. We also address our gratitude to the reviewers for their multiple reviews during the selection process.

3. **Security Track**: The response to our call for papers for the Security Track was strong. We received 73 submissions from many countries around the globe—special mention must be made of the rising number of submissions from Europe and Asia, highlighting NTMS'2009 Security Track growing appeal to the international research and professional community. A rigorous review process was followed. All papers received
at least three independent reviews, and some received as many as five reviews if the
original three reviews were deemed inconsistent. Once the reviews were completed,
an email-based discussion phase ensued, where each paper was discussed by its
reviewers. The objective of the discussion phase was to try to reach a consensus
among the reviewers, and accordingly classify each paper. As a result of these
discussions, we selected 19 regular papers and 4 poster papers for the security track.
We are satisfied with the balance of the program, as it contains not only strong
papers on “established” topics such as applications of cryptography and cryptanalysis
in communications security, and authentication protocols and services authorization,
but also papers on “higher layer” like security modelling and protocol design, and
“systems” papers focusing on experimental and pilot studies related to security. With
so many papers to choose from, the job of the TPC was challenging and time
consuming. We are very thankful to all the TPC members of the security track, each
of whom reviewed an average of 6-7 papers, and who cooperated significantly in
maintaining the timeliness of our review process. We are also thankful to the external
reviewers. The dedicated help and hard work of the TPC members and the external
reviewers helped us put together a very strong technical program.

We would also like to thank the General Co-Chairs, Khaldoun Al Agha and Gregory B.
Newby, and the Steering Committee Azzedine Boukerche, Mohamad Badra, Pascal Urien,
Stamatios Kartalopoulos, Houda Labiod, whose help was outstanding during the planning
phase of the conference. We would also like to thank the other members of the organizing
committee for facilitating various aspects of our work. Last but certainly not least, we would
like to thank you, the participants, for attending the conference. We welcome you in Cairo,
and hope that you will enjoy the conference program. We also look forward to your continued
participation in future NTMS conferences.

Finally, we do hope that you will find the proceedings stimulating and a source of inspiration
for future research.

**New Technologies Track Co-Chairs**

Hassnaa Moustafa  
Amr El-Kadi

**Mobility Track Co-Chairs**

Pascal Lorenz  
Joel Rodrigues

**Security Track Co-Chairs**

Roberto Di Pietro  
Albert Levi
NTMS’2009 CONFERENCE COMMITTEE

Conference co-chairs
Khaldoun Al Agha – University of Paris XI, France
Gregory B. Newby – University of Alaska Fairbanks, USA

Steering Board
Mohamad Badra – Dhofar University, Oman
Azzedine Boukerche - University of Ottawa, Canada
Stamatios Kartalopoulos - University of Oklahoma, USA
Pascal Urien - TELECOM ParisTech, France
Houda Labiod – Telecom ParisTech, France

TRACKS & TRACK CHAIRS

Mobility Program co-chairs
Pascal Lorenz – University of Haute Alsace, France
Joel Rodrigues – Institute of Telecommunications, University of Beira Interior, Portugal

Security Program co-chairs
Albert Levi – Sabanci University, Turkey
Roberto Di Pietro – University of Roma Tre, Italy

New Technologies & services Program co-chairs
Hassnaa Moustafa – France Telecom (R&D), Orange Labs, France
Amr El-Kadi – AUC, Egypt

Tutorials chair
Bertrand du Castel – Schlumberger, USA
Ayman Hassan – Orange Labs, Egypt

Workshop chair
Nicolas Sklavos – Technological Educational Institute of Patras, Greece
Ayman Ibrahim – Orange Labs, Egypt

Financial chair
Ibrahim Hajjeh - Ineovation, France
Sunday, December 20

09:00 - 12:30

Tutorial: WSN electromagnetic wave propagation environments

By Prof. Walter Grote
Room: Eugenie Salon

In Wireless Sensor Networks (WSN), data is collected from sensors to be transmitted using wireless technology. Important aspects for wireless communications are large and small scale propagation characterization, such as signal fading, channel coherence time and bandwidth, the Rician K factor and power delay profile. Many WSN applications are in open field environments, like in agriculture, on roads, on vehicles, etc. In these cases, propagation models for free space, line of sight, reflection, diffraction and scattering, shadowing and Doppler effects may apply. Home or office environments are also feasible, where the before mentioned effects are effective, but also propagation through wall or window panels may take place. Mining is another field of interest, either if it is underground or in open pits. Modern mining procedures aim to replace human resources directly involved in the mineral extraction process by automatic or remote control systems. Also, human health security issues in mines call for the use of wireless telecommunication systems. A new and exciting application field is the use of Underwater WSN (UWSN) where signal propagation becomes a major issue due to increased attenuations and delays.

WSN designers attending this tutorial will deepen their understanding of the design tradeoffs that will make it feasible to extend the networks lifetime. Since the propagation environment is also used by other technologies using wireless communications, people working in this area may also benefit from this tutorial. In this tutorial, emphasis will be on deriving boundary conditions for propagation conditions based on fundamentals, so that non-specialists in electromagnetic wave propagation issues may get a good grasp of the problems involved and their solutions.

10:30 - 11:00
Coffee Break

12:30 - 14:00
Lunch

14:00 - 17:30

Tutorial: Post-IP Networks (knowledge, piloting, virtualization, security, etc.).

By Prof. Guy Pujolle
Room: Eugenie Salon

Abstract: this presentation deals with important paradigms for the future post-IP generation: Knowledge and piloting planes, network virtualization and strong closed authentication. In this talk, we describe these four paradigms and finally we can deduce what could be the future post-IP generation.

So, first, we describe a complete environment based on Autonomic Networking, associated with a knowledge plane and a piloting plane, to control the Quality of Service (QoS) in IP networks and consequently responds to users’ requirements. Then we will describe network virtualization that can provide a powerful way to run multiple networks, each customized to a specific purpose, at the same time over a shared substrate. Finally, we introduce a high security scheme that can be deduced from a strong closed authentication where the customers can get a perfect privacy. We will compare the current TPM (Trusted Platform Module) solution with the future TEAPM (Trusted EAP Module) solution.

15:30 - 16:00
Coffee Break
Monday, December 21

09:00 - 10:30

Opening Plenary

Keynote: Maslow's Pyramid: Cloud Computing and the Ascent of Computer Needs
By Bertrand Du Castel

Room: Eugenie Salon

Workshop: WSN

Room: The View

10:30 - 11:00

Coffee Break

11:00 - 12:45

1st Session: Mobility Analysis, simulation, measurement and performance evaluation

Room: Eugenie Salon
Chair: Khaldoun Al Agha (University of Paris XI, France)

- Radio Communication Model for Underwater WSN
  Walter Grote (UTFSM, Chile); Carlos Uribe (Universidad Técnica Federico Santa María, Chile)

- Characterization of geographic Distribution of Sensor Data by Opportunistic Network
  Yasutaka Nishimura (KDDI R&D Laboratories Inc., Japan); Shinji Motegi (KDDI R&D Laboratories Inc., Japan); Kiyohito Yoshihara (KDDI R&D Laboratories Inc., Japan)

- Distributed Delay: Improving Network Throughput by Reducing Redundant Broadcasts
  Doug E Lundquist (University of Illinois at Chicago, USA); Aris Ouksel (University of Illinois at Chicago, USA)

2nd Session: Audio-Visual Applications

Room: Salon Vert
Chair: Guy Pujolle (University of Paris 6, France)

- Video over MANETs: The Impact of Obstacles, Node Mobility and Background Traffic on The Perceived Video Quality
  Hasan Al Khazaali (University of Wassit, Iraq); Christos Papageorgiou (University of Patras, Greece); Ilias Politis (University of Patras, Greece); Tasos Dagiuklas (Technological Educational Institute of Mesolonghi, Greece); Nasser Khamiss Alani (Alnahrain University, Iraq)

- Control Services for The HTTP Session Mobility Service
Michael O. Adeyeye (University of Cape Town, South Africa); Neco Ventura (University of Cape Town, South Africa); David Humphrey (Seneca College, Canada)

**Optimization of File Allocation for Video Sharing Servers**
Emad Abd Elrahman (Telecom SudParis (ex. INT), France); Hossam Afifi (Institut Telecom, France)

**A Cost-effective Service Delivery Platform to Support Mobility and Roaming in Pay-TV Systems**
Hamidreza Shirazi (Self-employed, United Kingdom); John Cosmas (Brunel University, United Kingdom)

### 3rd Session: Secure Services

**Room:** Salon Royal  
**Chair:** Albert Levi (Sabanci Univ., Turkey)

**A Comprehensive Reference Architecture for Trustworthy Long-Term Archiving of Sensitive Data**
Detlef Huehnlein (Secunet, Germany); Ulrike Korte (BSI, Germany); Lucie Langer (TU Darmstadt, Germany); Alexander Wiesmaier (Technische Universität Darmstadt - CDC, Germany)

**Mutual Authentication Scheme for EPC Tags-Readers in the Supply Chain**
Saleem Wehbe (American University of Beirut, Lebanon); Ayman Kayssi (American University of Beirut, Lebanon); Ali Chehab (American University of Beirut, Lebanon); Imad H Elhajj (American University of Beirut, Lebanon)

**Analysis of ECDSA Authentication Processing in VANETs**
Jonathan Petit (IRIT - Paul Sabatier University, France)

**Simple Dynamic Key Management in SQL Randomization**
Serguei A. Mokhov (Concordia University, Canada); Jian Li (Concordia University, Canada); Lingyu Wang (Concordia University, Canada)

**12:45 - 14:00**

**Lunch**

**14:00 - 16:00**

### 4th Session: WiMAX

**Room:** Eugenie Salon  
**Chair:** Walter Grote (UTFSM, Chile)

**A Two-Stage Frequency-Offset Estimation Scheme for OFDMA System**
Mohammed Mostafa (El Shrouk academy, Egypt)

**Enhanced Fractional Frequency Reuse to Increase Capacity of OFDMA Systems**
Zheng Xie (RWTH Aachen University, Germany); Bernhard Walke (RWTH Aachen University, Germany)

**Methodology for Calculating Path Loss Upper and Lower Bounds for WiMAX**
Mohamed Mohamed Abou El-Dahab (Arab Academy for Science and Technology, Egypt); Hossam Kamel (Arab Academy for Science and Technology and Maritime Transport, Egypt)

Adjusting Holdoff Time of the IEEE 802.16 in Mesh Mode
Cecília Cesar (Instituto Tecnológico de Aeronáutica, Brazil); Nelson L. S. da Fonseca (State University of Campinas, Brazil); Solon Carvalho (Instituto Nacional de Pesquisas Espaciais, Brazil)

5th Session: NGN Architectures

Room: Salon Vert
Chair: Tarek El-Ghazawi (The George Washington University, USA)

Email Messaging over Heterogenous Networks and Interfaces
Juho Määttä (Helsinki University of Technology, Finland); Risto Järvinen (Helsinki University of Technology, Finland); Riku Luostarinen (Helsinki University of Technology, Finland); Jukka M J Manner (Helsinki University of Technology, Finland)

A Novel Lookup Service Enabler for Presence-based Applications and its Architecture in the 3GPP IP Multimedia Subsystem
Zhongwen Zhu (Ericsson Canada, Canada); Fatna Belqasmi (Ericsson Canada, Canada); Chunyan Fu (Ericsson Canada, Canada); Roch Glitho (Concordia University, Canada)

Distributed Systems Ontology
João H. S. Pereira (Universidade de Sao Paulo, Brazil); Pedro Rosa (Universidade Federal de Uberlândia, Brazil)

Horizontal Address Ontology in Internet Architecture
João H. S. Pereira (Universidade de Sao Paulo, Brazil); Pedro Rosa (Universidade Federal de Uberlândia, Brazil)

CellNet: A Bottom-Up Approach to Network Design
Hoda M. Hassan (Virginia Tech, Egypt); Mohamed Eltoweissy (Virginia Tech, USA); Moustafa Youssef (Nile University, Egypt)


Room: Salon Royal
Chair: Bertrand Du castel (SLB, USA)

Secure and Efficient Data Storage in Unattended Wireless Sensor Networks
Yi Ren (University of Agder, Norway); Vladimir Oleshchuk (University of Agder, Norway); Frank Y. Li (University of Agder, Norway)

Fast Recovery from Node Compromise in Wireless Sensor Networks
Bai Li (Deakin University, Australia); Robin Doss (Deakin University, Australia); Lynn M Batten (Deakin University, Australia); Wolfgang Schott (IBM Zurich Research Laboratory, Switzerland)

A Lightweight Key Establishment Scheme for Wireless Sensor Networks
Seyed Hossein Nikounia (Sharif University of Technology, Iran); Farshad Amin (Sharif University of Technology, Iran); Amir Hossein Jahangir (Sharif University of Technology, Iran)
Data-Centric Dempster-Shafer Theory-Based Selfishness Thwarting via Trust Evaluation in MANETs and WSNs
Jerzy Konorski (Gdansk University of Technology, Poland); Rafal Orlikowski (R&D Marine Technology Centre S.A., Poland)

16:00 - 16:20
Coffee Break
16:20 - 18:00

7th Session: Multimedia Protocols / Applications
Room: Salon Vert
Chair: Amr A El-Kadi (The American University in Cairo, Egypt)

Noha Ossama El-Ganainy (Alexandria Institute of engineering and technology, Alexandria, Egypt); Said E. El-Khamy (Alexandria University, Egypt); Mohamed Amr Mokhtar (Alexandria University, Egypt); Ahmed AboulSeoud (University of Alexandria, Faculty of Engineering, Egypt)

A Study on a Dynamic Traffic Control System for Multimedia Communications
Masayuki Yabe (Nippon Institute of Technology, Japan)

CAC for VoIP Traffic over Wireless Systems with Voice Activity Detection and Background Noise Transmission
Yakim Mihov (Technical University of Sofia, Bulgaria); Kiril Kassev (Technical University of Sofia, Bulgaria); Adriana Kalaidzhieva (Technical University of Sofia, Bulgaria); Boris Tsankov (Technical University-Sofia, Bulgaria)

CHEFC: Cluster Head Election with Full Coverage in Wireless Sensor Networks
Mohammad Mehdi Shirmohammadi (Islamic Azad University hamedan branch, Iran); Mostafa Chhardoli (Islamic Azad University hamedan branch, Iran)

8th Session: Algorithms and Protocols for New Services
Room: Eugenie Salon
Chair: Sherif Aly (American University in Cairo, Egypt)

Web Services for Quality of Service Monitoring
Evelina Pencheva (Technical University of Sofia, Bulgaria); Ivaylo Atanasov (Technical University of Sofia, Bulgaria)

Integrated Control Platform with Load Balancing Algorithm in the Hybrid Optical Wireless Networks
Ying Yan (Technical University of Denmark, Denmark); Lars Dittmann (Technical University of Denmark, Denmark); Shing-Wa Wong (Stanford University, USA); Leonid Kazovsky (Stanford University, USA)

Performance Analysis of IPv4 and IPv6 on Windows Vista and Windows XP over Fast Ethernet in Peer-Peer LAN
Samad S. Kolahi (Unitec Institute of Technology, New Zealand); Burjiz Soorty (Unitec New Zealand, New Zealand); Zhang Qu (Unitec New Zealand, New Zealand); Navneet Chand (Unitec New Zealand, New Zealand)

Utilizing Network Coding for File Dessimination in Peer-to-Peer Systems
Maryam Hosseini Sohei (Sharif University of Technology, Iran); Najmeh Sadat Bathaee (Sharif University of Technology, Iran); Ali Movaghar (Sharif University of Technology, Iran)

9th Session:  Biometric Security; Information Hiding

Room: Salon Royal
Chair: Alexander Wiesmaier (Technische Universität Darmstadt - CDC & Center for Advanced Security Research Darmstadt, Germany)

An Expression Invariant 3D Face Recognition Algorithm
Aditya Budhwar (Harcourt Butler Technological Institute, India); Rahul Agrawal (HBTI, India); Anuj Dubey (HBTI, India); Shrauddha Gupta (HBTI, India); Vandana Kaushik (Harcourt Butler Technological Institute, India); Vinay Pathak (Harcourt Butler Technological Institute, India); Phalguni Gupta (Indian institute of technology Kanpur, India)

Improving E-Banking Security with Biometrics: Modelling user attitudes and acceptance
Rana Tassabehji (University of Bradford, United Kingdom); Mumtaz Kamala (University of Bradford, United Kingdom)

A New Approach of Mesh Watermarking Based on Maximally Stable Meshes Detection
Ezzeddine Zagrouba (URSIIVA, Tunisia); Saoussen Ben Jabra (Sciences University of Tunis, Tunisia)

Improving Security of Pixel Value Differencing Steganographic Method
Nazanin Zaker (Shiraz University, Iran); Ali Hamzeh (Shiraz University, Iran); Shadrokh Samavi (McMaster University, Canada); S. D. Katebi (Shiraz University, Shiraz, Iran, Iran)
Tuesday, December 22

09:00 - 10:30

10th Session: Mobility services and management

Room: Eugenie Salon
Chair: Kun Mean Hou (LIMOS, France)

Analysis of a Device-free Passive Tracking System in Typical Wireless Environments
Ahmed Kosba (Alexandria University, Egypt); Ahmed Abdelkader (Alexandria University, Egypt); Moustafa Youssef (Nile University, Egypt)

Congestion game models for Dynamic Spectrum sharing
Yenumula B Reddy (Grambling State University, USA)

Reduced Computational Complexity Beamspace Beamforming Design For MIMO Multicast Systems
Nikolay Petrov (Technical University of Sofia, Bulgaria); Vladimir Poulkov (Technical University of Sofia, Bulgaria); Georgi Iliev (Technical University of Sofia, Bulgaria)

11th Session: Network and System Security

Room: The View
Chair: Albert Levi (Sabanci Univ., Turkey)

Mixing Concrete and Symbolic Execution to Improve the Performance of Dynamic Test Generation
Gen Li (National University of Defense Technology, P.R. China); Kai Lu (School of Computer, National University of Defence Technology, P.R. China); Ying Zhang (National University of Defense Technology, P.R. China); Xicheng Lu (School of Computer, National University of Defence Technology, P.R. China); Wei Zhang (School of Computer, National University of Defence Technology, P.R. China)

A Visualization Framework for Traffic Data exploration and Scan Detection
Mai El-Shehaly (Suez Canal University, Egypt); Denis Gracanin (Virginia Tech, USA); Ayman A. Abdel-Hamid (Arab Academy For Science, Technology, and Maritime Transport, Egypt); Kresimir Matkovic (VRVis Research Center, Austria)

Q-ESP: a QoS-compliant Security Protocol to enrich IPSec Framework
Mahmoud M Mostafa (Université de Toulouse - IRIT - ENSEEIHT - INPT, France); Anas Abou El Kalam (Université de Toulouse - IRIT - ENSEEIHT - INPT, France); Christian Fraboul (ENSEEIHT, France)

10:30 - 11:00

Coffee Break
11:00 - 12:45

12th Session: Home Networks

Room: Eugenie Salon
Chair: Wen Huang (University of Hong Kong, Hong Kong)

**New Role of Policy-based Management in Home Area Networks – Concepts, Constraints and Challenges**
Annie Ibrahim Rana (Waterford Institute of Technology, Ireland); Micheál Ó Foghlú (Waterford Institute of Technology, Ireland)

**A Bi-objective Power Aware Routing Algorithm for Personal Networks**
Javad Vazifehdan (Delft University of Technology, The Netherlands); R Venkatesha Prasad (TUDelft -- Delft University of Technology, The Netherlands); Ramin Hekmat (Delft University of Technology, The Netherlands); Ignas Niemegeers (TU Delft, The Netherlands)

**hBox – Connecting Homes**
Matti Siekkinen (Helsinki University of Technology, Finland); Jukka M J Manner (Helsinki University of Technology, Finland); Sasu Tarkoma (Helsinki University of Technology, Finland); Antti Ylää-Jääski (Helsinki University of Technology, Finland)

**Policy-based Network Management in Home Area Networks: Interim Test Results**
Annie Ibrahim Rana (Waterford Institute of Technology, Ireland); Micheál Ó Foghlú (Waterford Institute of Technology, Ireland)

13th Session: Cryptographic Hardware; Physical Layer Security Protocols

Room: The View
Chair: Robin Doss (Deakin University, Australia)

**Low area Scalable Hardware/Software Co-design for Elliptic Curve cryptography**
Mohamed Hassan (University of Sheffield, United Kingdom); Mohammed Benaissa (University of Sheffield, United Kingdom)

**Hidden Anchor: Providing Physical Layer Location Privacy in Hybrid Wireless Sensor Networks**
Rania El-Badry (Nile University, Egypt); Moustafa Youssef (Nile University, Egypt); Mohamed Eltoweissy (Virginia Tech, USA)

**An Adaptive Quantization Algorithm for Secret Key Generation using Radio Channel Measurements**
Sana Tmar - Ben Hamida (CEA, Leti, Minatec, France); Jean-Benoît Pierrot (CEA-Leti, France); Claude Castelluccia (INRIA, France)

12:45 - 14:00

Lunch
13:30 - 15:30

**Workshop: WSN**

Room: The View

14:00 - 16:00

**14th Session: Routing/QoS for WSN and MANETS**

Room: Eugenie Salon

Chair: Nikolaos G. Bardis (University of Military Education - Hellenic Army Academy & N.C.S.R. Demokritos, Institute of Informatics & Telecommunications, Net Media Lab, Greece)

*Enhanced Blocking Expanding Ring Search in Mobile Ad Hoc Networks*
Ida M Pu (Goldsmiths, University of London, United Kingdom); Yuji Shen (University of Birmingham, United Kingdom)

*Functional Enhancements of Proactive Routing in Mobile Ad Hoc Networks*
Mohamed Amine Abid (University of Manouba 2010, Tunisia); Abdelfettah Belghith (University of Manouba, Tunisia)

*Throughput-Optimized Opportunistic Scheduling for Rate-Guaranteed and Best-Effort Users in Wireless Networks*
Wen Huang (University of Hong Kong, Hong Kong); Kwan Yeung (University of Hong Kong, Hong Kong)

*Localized QoS Routing Algorithms Based on Residual Bandwidth*
Turki Al Ghamdi (University of Bradford, United Kingdom)

*A Flexible Routing Architecture to Support Diversified Application-level Data Types in MANETs*
Kitisak Osathanunkul (University of Manchester, United Kingdom); Ning Zhang (University of Manchester, United Kingdom)

15:30 - 18:00

**Workshop: SCLP**

Room: The View

16:00 - 16:20

**Coffee Break**

16:20 - 18:00

**15th Session: NTMS Poster & Demo 2009 Session**

Room: Eugenie Salon

*A Compact Routing Scheme with Lower Stretch*
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay and Bandwidth constrained Routing with Throughput optimization in TDMA-based MANETs</td>
<td>Huaiyuan Ma (Norwegian University of Science and Technology, Norway); Bjarne E. Helvik (Norwegian University of Science and Technology, Norway); Otto J Wittner (UNINETT, Norway)</td>
</tr>
<tr>
<td>A Generic Metadata Framework for the Indexation and the Management of Distributed Multimedia Contents</td>
<td>David Espes (Paul Sabatier University, France); Zoubir Mammeri (Paul Sabatier University, France)</td>
</tr>
<tr>
<td>Secure Workflow Execution in Grid Environments</td>
<td>Alexandru-Lucian Petrescu (Politehnica University of Bucharest, Romania); Catalin Leordeanu (University Politehnica of Bucharest, Romania); Valentin Cristea (University Politehnica of Bucharest, Romania)</td>
</tr>
<tr>
<td>Dynamic Scheduling of Virtual Machines Running HPC Workloads in Scientific Grids</td>
<td>Omer Khalid (CERN, Switzerland); Ivo Maljevic (Soma Networks, Canada); Richard John Anthony (University of Greenwich, United Kingdom); Miltos Petridis (University of Greenwich, United Kingdom); Kevin Parrott (University of Greenwich, United Kingdom); Markus Schulz (CERN, Switzerland)</td>
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<tr>
<td>Context-aware Dynamic Security Configuration for Mobile Communication Device</td>
<td>Gaeil An (ETRI, Korea); Geuntae Bae (KAIST, Korea); KiYoung Kim (ETRI, Korea); Dong Il Seo (ETRI, Korea)</td>
</tr>
<tr>
<td>Towards Semantic Event-Driven Systems</td>
<td>Kia Teymourian (Free University Berlin, Germany); Rehab Alnemr (Hasso Plattner Institute, Potsdam University, Germany); Olga Streibel (Free University Berlin, Germany); Adrian Paschke (Free University Berlin, Germany); Christoph Meinel (Hasso Plattner Institute, University of Potsdam, Germany)</td>
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<tr>
<td>Secure VoIP Using A Bare PC</td>
<td>Gholam H Khaksari (Penn State University, USA); Alexander L Wijesinha (Towson University, USA); Ramesh Karne (Towson University, USA)</td>
</tr>
<tr>
<td>The Impact of Security on the Performance of IPv4 and IPv6 Using 802.11n WLAN</td>
<td>Samad S. Kolahi (Unitec Institute of Technology, New Zealand); Zhang Qu (Unitec New Zealand, New Zealand); Burjiz Soorty (Unitec New Zealand, New Zealand); Navneet Chand (Unitec New Zealand, New Zealand)</td>
</tr>
<tr>
<td>GNSS Synchronization in Vanets</td>
<td>Riccardo Scopigno (Istituto Superiore Mario Boella - University of Pavia, Italy); Hector Agustin Cozzetti (Istituto Superiore Mario Boella, Italy)</td>
</tr>
<tr>
<td>How to build web self-service by functional profiles?</td>
<td>Benjamin Chevallereau, Ecole Centrale de Nantes, France; and Alain Bernard, Ecole Centrale de Nantes, France</td>
</tr>
</tbody>
</table>
A Network Simulator for Autonomic Context-Aware Architecture
Maïssa MBAYE, LaBRI - Laboratoire Bordelais de Recherche en Informatique, France; and Francine KRIEF, LaBRI - Laboratoire Bordelais de Recherche en Informatique, France

19:00 - 22:00

Banquet
Wednesday, December 23

09:00 - 11:00

16th Session: Data and Network Protocols

Room: Eugenie Salon
Chair: Khaldoun Al Agha (University of Paris XI, France)

**Performance Analysis of Slotted CSMA/CA IEEE 802.15.4 with Heterogeneous No-Acknowledged Uplink Traffic**
Walter Grote (UTFSM, Chile); Gustavo Sarmiento (Universidad Técnica Federico Santa Maria, Chile); Khaldoun Al Agha (University of Paris XI, France)

**Title: Energy Conserving Transmission Scheduling using a dynamic p-persistent scheme**
Jong-Hoon Youn (University of Nebraska, Omaha, USA); Nam Pham (University of Nebraska at Omaha, USA); Hesham H. Ali (University of Nebraska at Omaha, USA)

**Performance Increase of Error Control Operation on Data Transmission**
Nikolaos G. Bardis (University of Military Education - Hellenic Army Academy, Greece); Athanasios S Drigas (National Centre for Scientific Research "Demokritos", DTE/YE, Greece); Oleksandr P. Markovskyi (National Technical University of Ukraine, (Polytechnic Institute of Kiev), Ukraine)

**Access-Points Deployment for Vehicular Networks Based on Group Centrality**
Amine Kchiche (University of Manouba, Tunisia); Farouk Kamoun (CRISTAL, Tunisia)

11:00 - 11:30

Coffee Break

11:30 - 12:30

Keynote: Computing with Manycores and Heterogeneous Processors: The Productivity Challenges

Room: Eugenie Salon

12:30 - 14:00

Lunch

14:00 - 16:00

17th Session: Mobility management and Handover

Room: Eugenie Salon
Chair: Walter Grote (UTFSM, Chile)
**Mobility Analyzer: A Framework for Analysis and Recognition of Mobility Traces in Mobile Ad-Hoc Networks**
Mojgan Khaleedi (Sharif University of Technology, Iran); Alimohammad Afshin Hemmatyar (Sharif University of Technology, Iran); Hamid Reza Rabiee (Sharif University of Technology, Iran); Seyed Morteza Mousavi (Sharif University of Technology, Iran); Mehrdad Khaleedi (Sharif university of technology, Iran)

**An Autonomic Piloting Plane for the Handover Decision Optimization**
Meriem Abid (Paris Universitas, France); Ilhem Fejjari (Paris Universitas, France); Guy Pujolle (Laboratoire d'Informatique de Paris 6, France)

**State of Host-Centric Multihoming in IP networks**
Gabor Fekete (University of Jyväskylä, Finland); Timo Hämäläinen (University of Jyväskylä, Finland)

**RFID-assisted Movement Detection Improvement in IP Mobility**
Apostolia Papapostolou (Telecom Sudparis, France); Hakima Chaouchi (Telecom Sud Paris, France)

**Efficient Micro-Mobility with Congestion Avoiding in Two-Nodes Mobile IP Network Architecture**
Yacine Benallouche (Université de Versailles Saint-Quentin, France); Dominique Barth (University of Versailles-St Quentin, France); Mohammed Salah Karouia (Université de versailles Saint Quentin, France); Marc-Antoine Weisser (Supélec, France)
Wireless Sensor Networks - theory and practice

WSN Program

Monday, December 21

8:00 AM – 6:00 PM
Registration
9:00 AM - 09:25 AM
Opening ceremony
Room: The View
9:25 AM - 10:40 AM
Session: Routing Protocols
Room: The View
Chair: Prof. Xiaozong Yang (Harbin Institute of Technology, China)

Modeling the Topology for Cluster-based Wireless Sensor Networks
Li-jun Chen (Nanjing University, P.R. China); Qingfeng Pan (Nanjing University, P.R. China); Daoxu Chen (Nanjing University, P.R. China); Li Xie (Dept of Computer Science and Technology, Nanjing University, P.R. China)

Performance Study of Node Placement for Congestion Control in Wireless Sensor Networks
Vasos Vassiliou (University of Cyprus, Cyprus); Charalambos Sergiou (University of Cyprus, Cyprus)

Flash Mob Organization in Heterogeneous Wireless Sensor Networks
Tobias Baumgartner (Braunschweig University of Technology, Germany); Sándor P. Fekete (Braunschweig University of Technology, Germany); Winfried Hellmann (Braunschweig University of Technology, Germany); Alexander Kröller (Braunschweig University of Technology, Germany)

10:40 AM - 11:00 AM
Coffee Break
11:00 AM - 12:45 PM
Session: Energy Efficient Communication
Room: The View
Chair: Alexander Kröller (Braunschweig University of Technology, Germany)

Potential Game Model to Detect Holes in Sensor Networks
Yenumula B Reddy (Grambling State University, USA)

Characterizing the Traffic Load Distribution in Dense Sensor Networks
Qinghua Wang (Mid Sweden University, Sweden); Tingting Zhang (Mid Sweden University, Sweden)

Impact of Duty Cycle Variation on WSNs
Sithu Sudarsan (University of Arkansas at Little Rock, USA); Vimalathithan Subramanian (University of Arkansas at Little Rock, USA); Kenji Yoshigoe (University of Arkansas at Little Rock, USA)
A new energy-efficient, scalable and robust architecture for Wireless Sensor Networks
Juan-Vicente Capella-Hernández (Technical University of Valencia, Spain); Alberto Bonastre (Technical University of Valencia, Spain); Rafael Ors (Technical University of Valencia, Spain); Salvador Climent (Technical University of Valencia, Spain)

12:45 PM - 2:00 PM
Lunch
2:00 PM - 4:00 PM
Session: Localization
Room: The View
Chair: Hong Sun (Wuhan University, P.R. China)

Localized and Integrated Topology Maintenance for Wireless Sensor Networks
Yu Zhang (Orange Labs - Beijing, P.R. China); Nannan Zhao (Beijing University of Posts and Telecommunications, P.R. China)

Robust Cooperative Localization Technique For Wireless Sensor Networks
Mohamed Youssf (University of Calgary, Canada); Naser El-Sheimy (University of Calgary, Canada)

Minimizing Cost of Scalable Distributed Least Squares Localization
Ralf Behnke (University of Rostock, Germany); Jakob Salzmann (University of Rostock, Germany); Dirk Timmermann (University of Rostock, Germany)

Towards an Efficient Positioning of Mobile Sinks in Wireless Sensor Networks inside Buildings
Leila Ben Saad (LIP UMR 5668 of CNRS-ENS-INRIA-Université Lyon1, France); Bernard Tourancheau (UMR LIP from CNRS, ENS, INRIA and University Lyon1, France)

Node Localization Algorithm Based on Matrix Pencil for Wireless Sensor Network
Chang Liu (Jilin University, P.R. China); Hong Jiang (Jilin University, P.R. China); Defa Wang (Jilin University, P.R. China)

4:00 PM - 4:30 PM
Coffee Break
4:30 PM - 6:00 PM
Session: Demonstrations
Room: The View
Chair: Alexander Kröller (Braunschweig University of Technology, Germany)

LIMOS-Cemagref, Kun-Mean Hou & Jean-Pierre Chanet
Tuesday, December 22

8:00 AM – 6:00 PM

Registration
12:15 PM - 1:30 PM
Lunch
1:30 PM - 3:30 PM

Session: Applications
Room: The View
Chair: Dr. Jean-Pierre Chanet (Cemagref, France)

**Toward a low cost and single chip HOLTER: SoC-HOLTER**
Hao Ding (LIMOS, Université Blaise Pascal, France)

**A Practical Scheme to Improve User Satisfaction with Reduced Power in Wireless Networks**
Dong Cheul Jang (Sogang University, Korea); Ju Wook Jang (Sogang university, Korea)

**Analytical Model for Energy Consumption Analysis in Grid Based Wireless Sensor Networks**
Zeeshan Ali Khan (CNRS-LEAT, Université de Nice-Sophia Antipolis, France); Cécile Belleudy (CNRS-LEAT, Université de Nice-Sophia Antipolis, France); Michel Auguin (CNRS-LEAT, Université de Nice-Sophia Antipolis, France)

**WSN Architectures for Intelligent Transportation Systems**
Mounib Khanafer (University of Ottawa, Canada); Mouhcine Guennoun (University of Ottawa, Canada); Hussein Mouftah (University of Ottawa, Canada)

**Fabrication of Passive Wireless Sensor by Pulsed Laser Scribing of Indium Tin Oxide**
Oguzhan Balki (Old Dominion University, USA); Hani Elsayed-Ali (Old Dominion University, USA)
2nd International Workshop on Service computing, Context-aware, Location-aware and Positioning techniques

SCLP Program

Tuesday, December 22nd

3:30 PM - 4:05 PM

Welcome
Room: The View

Position-based Routing Protocols For Mobile Ad Hoc Networks
Invited speaker: Mohamed Bakhouya,
Université de Technologie de Belfort Montbéliard,
Belfort, France

4:05 PM - 4:20 PM

Short break

4:20 PM - 6:15 PM
Room: The View

Real-Time Motion Tracking Using the CELL BE
Hoda El-Sayed and Lubomir Riha
Department of Computer Science
Bowie State University,
Bowie, MD 20715, USA

Verification of Real-Time Systems: Application to the Transport Domain
Ahmed Hammad and Hassan Mountassir,
University de Franche-comte, Laboratoire Informatique de l'Université de Franche-Comté,
Besançon, France

TransportML: a middleware for Location-Based Services collaboration
Ana Roxin, Christophe Dumez, Nathanael Cottin, Jaafar. Gaber, Maxime Wack
Université de Technologie de Belfort Montbéliard,
Belfort, France

sDLSnd - Scalable Distributed Least Squares Localization with reduced Complexity
Ralf Behnke, Jakob Salzmann, Dirk Timmermann
Institute of Applied Microelectronics and Computer Engineering
University of Rostock
Rostock, Germany

Evaluating Geographic Routing Protocols for Vehicular Ad-hoc Networks
Kashif Dar, Mohamed Bakhouya, Jaafar Gaber, Maxime Wack
Université de Technologie de Belfort Montbéliard,
Belfort, France