2nd IEEE International Symposium on
Wireless Vehicular Communications

Final Program

21 - 22 September 2008

Telus Convention Center

Calgary, Canada

Welcome

It is our great pleasure to welcome attendees to the second edition of the IEEE International Symposium on Wireless Vehicular Communications (IEEE WiVeC2008).

After a very successful first WiVeC edition in Baltimore with over 130 registrants, the IEEE Vehicular Technology Society (VTS) has decided to continue its WiVeC symposium with a second edition co-located with the IEEE Vehicular Technology Conference Fall 2008 in Calgary (Canada). Following the trend established in the first edition, the second WiVeC edition aims to capture the current research and technological developments in the area of wireless vehicular communications. To this aim, the symposium will feature two keynote speakers from distinguished industrial and academic representatives, two industrial and academic panels, 3 oral sessions and a posters and demos session where colleagues will showcase their research activities.

We have accepted a total of 24 papers from 55 submitted papers with 15 papers being presented orally and 9 papers as poster presentations; there will also be 7 demonstrations co-located with the poster presentations. The papers cover the full range of wireless vehicular communications: physical layer area; protocol design area; and applications, systems and experiments area. We would like to express our gratitude to all authors who submitted their work to IEEE WiVec 2008. All submitted papers have been thoroughly and independently reviewed in accordance with standard blind reviewing practices. Each of the submitted papers was assigned to at least 3 reviewers. We would also like to take this opportunity to thank all TPC members and external reviewers for providing timely and high quality reviews.

Finally, we would like to take this opportunity to thank the work and dedication of all WiVeC2008 organizing and technical committee, and the support from the IEEE Vehicular Technology Society.

We hope you will have a fruitful technical conference while taking the opportunity to enjoy the beauty of Calgary and its surroundings.

IEEE WiVeC2008 Organizing and Technical Committees

Organising Committee

General Co-chairs:	*Javier Gozalvez*	University Miguel Hernandez
	Mario Gerla	UCLA.
Technical Program Co-chairs:	*Andreas Festag*	NEC
	Daniel Stancil	Carnegie Mellon University
Speakers Co-chairs:	*Fan Bai*	General Motors
	Mineo Takai	UCLA / Waseda University
Demos Chair:	*Jérôme Härri*	University of Karlsruhe
Finance Chair:	*James Irvine*	University of Strathclyde

Technical Program Committee

Co-Chairs

Andreas Festag	NEC
Daniel Stancil	Carnegie Mellon University

Members

Fan Bai, *General Motors*
Carlos Jesús Bernardos Cano, *Universidad Carlos III de Madrid (UC3M)*
Subir Biswas, *Michigan State University*
Kevin Borries, *Carnegie Mellon University*
Brahim Chaib-draa, *Laval University*
Wai Chen, *Telcordia Technologies*
Lin Cheng, *Carnegie Mellon University*

Soumaya Cherkaoui, *Université de Sherbrooke*
Thierry Ernst, *INRIA*
Fethi Filali, *Eurecom*
Matthias Gerlach, *Fraunhofer FOKUS*
Marco Gruteser, *Rutgers University*
Hannes Hartenstein, *Kalsruhe University*
Jose Herrero, *GMV*
Frank Kargl, *Ulm University*

Opening Plenary

Sunday 21 September 2008 13.00 – 14.00 MacLeod A1
DSRC: Wireless Invented for Safety. Why?
Raja Sengupta, University of California at Berkeley, USA

In 1999 the Federal Communications Commission allocated 75 MHz of spectrum for "DSRC based Intelligent Transporation Systems Applications" so as to "increase traveler safety, reduce fuel consumption and pollution, and continue to advance the nations economy." It is now a decade later. We will review the research and products targeting this spectrum. The aim is to evaluate the state of the art in the context of the great hope that underlay the allocation of such valuable spectrum.

Raja Sengupta is currently Associate Professor in the CEE: Systems Engineering program at the University of California at Berkeley. He received his PhD from the EECS department of the University of Michigan, at Ann Arbor. He is Director of the PATH Wireless Laboratory and Deputy Director of the Center for Collaborative Control of Unmanned Vehicles. His current research interests are in Dedicated Short Range Communications (DSRC), networked estimation and control, vision based control of unmanned air vehicles, and collaborative behavior in robotic systems. He is Associate Editor of the IEEE Control Systems magazine and of the Journal of Intelligent Transportation Systems. He was Program Chair of the IEEE Conference on Autonomous Intelligent Networked Systems 2003 and Co-General Chair of the first ACM MOBICOM Workshop on Vehicular Ad-hoc Networks held in 2004. He was Co-Chair of the Program Committee for the second ACM MOBICOM Workshop on Vehicular Ad-hoc Networks in 2005.

Vehicle Safety Communications - Research to Deployment
Roger Berg, Vice President of Wireless Technologies, DENSO International America

Research work on the feasibility of using wireless communications as an extension to autonomous automotive safety and information systems has continued for a number of years. Many of the academic and industry groups are now looking towards viability of an effective deployment scenario to ensure that V2V

and V2I systems can satisfy the requirements of the many intended users. Recently, work has been completed in the EU and US towards deployable systems and components for connected vehicles. This presentation is intended to provide ideas for how to best transition today's early stage research into producible, deployable, but extensible cooperative safety products while continuing additional R&D towards future global technology evolution.

Roger Berg is currently Vice President of Wireless Technologies for DENSO International America, Incorporated's North America Research Laboratory. His organization is involved in the analysis and development of future intelligent transportation components and systems. He has been with DENSO in this capacity since late 2000. Prior to his current position, he had several senior management and executive positions with Motorola and Sony Electronics leading wireless and consumer electronics product development and manufacturing.

He is primary or co-inventor on eight US patents, and holds a BSEE from the University of Illinois and an MSEE from Illinois Institute of Technology. He is a member of SAE

Panel Sessions

Sunday, 21 September, 17.30 – 16.45 MacLeod A1
Validating VANET Research: Simulation, Emulation and Testbed

Chair:	**Peter Steenkiste**	*Carnegie Mellon University*
Panelists:	**Ivan Seskar**	*WINLAB, Rutgers University*
	Giovanni Pau	*UCLA*
	Felix Schmidt-Eisenlohr	*University of Karlsruhe*

The flourish of large-scale network applications across various types of wireless networks, including vehicular wireless networks, has raised a challenge to network modeling and validation community: A flexible evaluation and validation framework should support experimentation and analysis of close interactions between real applications and realistic network dynamics in wireless environment.

The research conducted in the past few years has proven that this topic is an extremely difficult research question. Hardware-based experimentation testbeds provide realism, but are tightly coupled to the physical environment and circumstances under which experiments are carried out; on the other end, simulation is able to validate the designed systems with more controllability but suffers from a challenge of faithfully modeling the environments; wireless emulator is an alternative approach to overcome the stark tradeoff between the realism of experimentation testbed and the repeatability of simulation-based experimentation, but might need further improvement of scalability.

This panel will take a look at this topic and discuss the pros and cons of each major approach. Among others, questions about the tradeoff of requirements, the current development and future evolution, the research challenges will be discussed.

Peter Steenkiste is a Professor of Computer Science and of Electrical and Computer Engineering at Carnegie Mellon University. He received the degree of Electrical Engineer from the University of Gent in Belgium in 1982, and the MS and PhD degrees in Electrical Engineering from Stanford University in 1983 and 1987, respectively.

Peter Steenkiste's research interests are in the areas of networking and distributed computing. While at CMU, Peter Steenkiste worked on Nectar, the first workstation clusters built around a high-performance, switch-based local area network. He contributed both to the optimization of the communication subsystem and to the development of programming tools for workstation clusters. The optimization of application-level communication performance over commodity networks was further explored in the Gigabit Nectar and Credit Net projects. All these projects developed prototype systems that were used by a wide range of application groups, allowing a realistic evaluation of the research.

Peter Steenkiste is a member of the ACM and a senior member of the IEEE. He has been on many program committees and he was co-chair for the OPENSIG'99 workshop and the "Eight International Workshop on Quality of Service (IWQOS'00)". He was also program chair for HPDC2000 and general co-chair for ACM SIGCOMM'02. More recently, he was program co-chair for MobiCom 2008. He has been an associated editor for IEEE Transactions on Parallel and Distributed Systems (1998-1999), IEEE/ACM Transactions on Networking (2000-2003), and Cluster Computing (2000-2004), and he is currently on the editorial board of the "Journal of Grid Computing".

Ivan Seskar is Associate Director of WINLAB (Wireless Information Network Laboratory) at Rutgers University, where he has overall responsibility for the center's experimental research programs. He is one the co-PIs and a lead project engineer for the NSF-funded "ORBIT" open-access wireless networking testbed at Rutgers. In this role, he led a team of engineers and graduate students who developed the 400-node ORBIT radio grid which was successfully deployed in 2005 and for which the team received 2008 Alexander Schwarzkopf Prize for Technological Innovation. Mr. Seskar's research group at WINLAB developed one of the first software define radio (SDR) prototypes in the mid-1990's, and is currently

working on another WINLAB project aimed at development of a novel network-centric cognitive radio platform. Ivan Seskar obtained his B.S. degree in electrical engineering and computer science from University of Novi Sad and M.S. degree in electrical engineering from Rutgers University. His technical interests include experimental protocol evaluation, radio technology, vehicular networking and wireless systems in general. He is a Senior Member of the IEEE and co-founder of Upside Wireless Inc.

Giovanni Pau is a research scientist in Computer Science at the University of California, Los Angeles. He received the "laurea doctorate" in Computer Science and the PhD in Computer Engineering, from the University of Bologna in 1998 and 2002, respectively.

Giovanni Pau's research interests lie in the areas of Networks and Systems with focus on Wireless Vehicular Networks. Vehicular Networks have been in the limelight for their potential in road safety, transportation management, homeland security, and pervasive sensing applications. Giovanni Pau is involved in vehicular projects in a number of areas including resource discovery, routing, and urban sensing, and transportation safety.

Dr. Pau is leading the C-VeT initiative at UCLA directed at building a campus wide vehicular testbed in support of the community effort on vehicular network. In particular the C-VeT testbed will allow researchers to design implement and evaluate their algorithms and protocols in an actual V2V and V2I system.

Giovanni Pau is a member of ACM and IEEE; he is serving the community in the technical program committee of several IEEE and ACM conferences, as well as associate editor for the Elsevier International Journal of Ad Hoc Networks, and the Springer International Journal on P2P Systems.

Felix Schmidt-Eisenlohr is a researcher at the Institute of Telematics at University of Karlsruhe, Germany. His research interest is on understanding and optimizing wireless communication mechanisms and behaviour in vehicular networks, and on methodologies that allow a realistic simulation of vehicle-to-vehicle communication. He was and is heavily involved in design and implementation of the overhaul of the IEEE 802.11 module of NS-2 working together with researchers from Mercedes Benz Research & Development North America. He was also actively contributing performance evaluations to the German Network on Wheels projects.

Monday, 22 September, 15.30 – 17.00 MacLeod A3
The Challenges and Solutions: Commercialization Process of Vehicular Wireless Communication Technology
Chair: **Ravi Puvvala**   *Savari Network, Inc*
Panelists: **Susan Dickey**   *California PATH*
           Justin McNew   *Kapsch TrafficCom Inc*

Recent developments in the automotive industry -- including standardization efforts such as the IEEE 802.11p (Wireless Access for Vehicular Environments, WAVE) and the IEEE 1609.0-4 and SAE J2735 (Dedicated Short Range Communication, DSRC), and the allocation by FCC of 75 MHz of spectrum at the 5.9 GHz band for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communications, and a large number of industry development and deployment initiatives at US, Europe and Japan -- point to a new emerging domain of Vehicular Wireless Communication.

Vehicular wireless communication systems are not only envisioned to be a key component of the next-generation cyber physical systems linking the drivers' real-world experience on the road to the virtual cyber worlds, but also predicted as an emerging field with great potentials to realize the commercial profits. The main reason for the success of this field as a research field is that the related applications have a direct impact on people's everyday life.

The most challenging commercialization problem that this research community faces today is the technology adoption and future commercialization process. This panel will take a look at this topic and discuss opportunities and obstacles towards using vehicular wireless technology in a variety of applications and systems. Among others, questions about current development, technological evolution and killer applications, deployment platforms and business models will be discussed.

Ravi Puvvala is the CEO of Savari Network, Inc. Previously he served as the founder and CTO of Arada Systems and CEO of Zazu Networks. He has worked with several multinational corporations with rich experience in engineering, management and global understanding of products in wired and wireless networks. A persistent entrepreneur, who is captivated by the power of WiFi and it's proliferation in to various markets. He has been responsible for providing overall strategic direction, technical vision, and technical operational direction for the organization. He received B.S. in Computer Science at Bangalore University, 1990 and M.S. in Electrical Engineering at Arizona State University, 1992.

Susan Dickey received a B.A. with a double major in history and mathematics from Michigan State University in 1973 and a Ph. D. in Computer Science from New York University in May 1994.

Her research interests include the architecture and design of real-time, parallel and distributed systems, the queuing behavior of switches in computer and communication networks, and networking issues for vehicle infrastructure integration. She has been employed at California PATH since 2002. At PATH her work has included supporting research in vehicle automation for heavy vehicles, cooperative intersection collision avoidance systems, lane assist on transit buses, and standards work in vehicle infrastructure integration. She is the

secretary of the 802.11p Wireless Access in a Vehicular Environment (WAVE) Task Group.

Justin McNew is the Chief Technical Officer at Kapsch TrafficCom Inc. Mr. McNew has extensive experience in the ongoing 5.9 GHz DSRC technology development and standards activities and has led the development of Kapsch's 5.9 GHz products, including its Multiband Configurable Networking Unit (MCNU) platform which is designed for transportation applications, including electronic tolling and Vehicle Infrastructure Integration.

McNew has developed numerous patents and publications during his career. He formerly worked for Motorola CDMA Infrastructure group; he received a MSEE from Clemson University in 1996, and his BS degree is in Physics.

VTC Opening Plenary

WiVeC attendees are invited to the VTC2008-Fall opening plenary, *Technology Strategy and the United Nations* on Monday, 22 September, from 8.30 – 10.00 in MacLeod Hall ABC. Full details can be found on Page 11.

WiVeC Technical Sessions

Sunday 21 September 14.00 – 15.30
W1: Applications, Systems & Experiments

1. **I2V Communication Driving Assistance System: On-board Traffic Light Assistant**
   Inaki Iglesias, Tecnalia-Robotiker, Spain; Lucia Isasi, Tecnalia-Robotiker, Spain; Maider Larburu, Tecnalia-Robotiker, Spain; Veronica Martinez, Tecnalia-Robotiker, Spain; and Begona Molinete, Tecnalia-Robotiker, Spain

2. **Mobile WiMAX: Performance Analysis and Comparison with Experimental Results**
   Mai Tran, Bristol University, United Kingdom; George Zaggoulos, Bristol University, United Kingdom; Andrew Nix, Bristol University, United Kingdom; and Angela Doufexi, Bristol University, United Kingdom

3. **TRACKSS Approach to Improving Road Safety through Sensors Collaboration on Vehicle and in Infrastructure**
   Leonardus (Budi) Arief, Newcastle University, UK; and Axel von Arnim, LCPC, France

4. **V2V Communications in Automotive Multi-sensor Multi-target Tracking**
   Matthias Roeckl, German Aerospace Center (DLR), Germany; Thomas Strang, German Aerospace Center (DLR), Germany; and Matthias Kranz, German Aerospace Center (DLR), Germany

5. **Towards Advanced Information Fusion for Driver Assistant Systems of Modern Vehicles**
   Florian Dittmann, TWT GmbH, Science & Innovation, Germany; Konstantina Geramani, TWT GmbH, Science & Innovation, Germany; George Rigas, University of Ioaninna, Greece; Christos Katsis, University of Ioaninna, Greece; and Dimitrios Fotiadis, University of Ioaninna, Greece

Sunday 21 September 15.30 – 17.15
WiVeC Posters

1. **Efficient Certificate Distribution for Vehicle Heartbeat Messages**
   Jeremy Blum, Pennsylvania State University, USA; Alexey Tararakin, Pennsylvania State University, USA; and Azim Eskandarian, The George Washington University, USA

2. **On the Cost-Effective Wireless Broadband Service Delivery from High Altitude Platforms with an Economical Business Model Design**
   Zhe Yang, Blekinge Institute of Technoligy, Sweden; and Abbas Mohammed, Blekinge Institute of Technology, Sweden

3. **Pseudonym-on-demand: A New Pseudonym Refill Strategy for Vehicular Communications**
   Zhendong Ma, Ulm University, Germany; Frank Kargl, Ulm University, Germany; and Michael Weber, Ulm University, Germany

4. **Remote Medical Monitoring Through Vehicular Ad Hoc Network**
   Hyduke Noshadi, University of California Los Angeles, USA; Eugenio Giordano, University of California Los Angeles, USA; Hagop Hagopian, University of California, Los Angeles, USA; Giovanni Pau, University of California, Los Angeles, USA; Mario Gerla, University of California Los Angeles, USA; and Majid Sarrafzadeh, University of California, Los Angeles, USA

5. **The WiMAX ASN Network in the V2I scenario**
   Marina Aguado, University of the Basque Country, Spain; Jon Matias, University of the Basque Country, Spain; Eduardo Jacob, University of the Basque Country, Spain; and Marion Berbineau, INRETS, France

6. **Study on Distributed Delay Time Control Algorithm for Cooperative Multi-hop Vehicular Networks with Cyclic Delay Diversity**
   Shizen Sasaki, Kyoto University, Japan; Hidekazu Murata, Kyoto University, Japan; Koji Yamamoto, Kyoto University, Japan; and Susumu Yoshida, Kyoto University, Japan

7. **Multilevel Coded Cooperation for Wireless Vehicular Networks**
   Mumtaz Yilmaz, Dokuz Eylul University, Turkey; and Reyat Yilmaz, Dokuz Eylul University, Turkey

8. **50 Ways to Track Your Lover**
   Lars Fischer, Technische Universität Darmstadt, Germany; and Claudia Eckert, Technische Universität Darmstadt, Germany

9. **A Selective Cluster Index Scheduling Method in OFDMA**
   Marios Nicolaou, University of Bristol, United Kingdom; Angela Doufexi, University of Bristol, United Kingdom; and Simon Armour, University of Bristol, United Kingdom

Sunday 21 September 15.30 – 17.15
WiVeC Demonstrations

1. **The Design of a Wireless Access for Vehicular Environment (WAVE)Prototype for Intelligent Transportation System (ITS) and Vehicular Infrastructure Integration (VII)**
   Weidong Xiang, University of Michigan, Dearborn, USA; Yue Huang, University of Michigan, Dearborn, USA; and Sudhan Majhi, University of Michigan, Dearborn, USA

2. **C-VeT an open research platform for VANETs: Evaluation of Peer to Peer Applications in Vehicular Networks**
   Eugenio Giordano, University of California Los Angeles, USA; Andrea Tomatis, Politecnico di Torino, Italy; Abhishek Ghosh, University of California Los Angeles, USA; Giovanni Pau, University of California Los Angeles, USA; and Mario Gerla, University of California Los Angeles, USA

3. Demonstrator: V2V Communications in Automotive Multi-sensor Multi-target Tracking
Matthias Roeckl, German Aerospace Center (DLR), Germany; Thomas Strang, German Aerospace Center (DLR), Germany; and Matthias Kranz, German Aerospace Center (DLR), Germany

4. NCTUns 5.0: A Network Simulator for IEEE 802.11(p) and 1609 Wireless Vehicular Network Researches
Shie-Yuan Wang, National Chiao Tung University, Taiwan; and Chih-Che Lin, National Chiao Tung University, Taiwan

5. Secure and Privacy-Enhancing Vehicular Communication: Demonstration of implementation and operation
Petra Ardelean, EPFL, Switzerland; and Panagiotis (Panos) Papadimitratos, EPFL, Switzerland

6. U2VAS: A Research Communication Stack for Vehicular Networks
Elmar Schoch, Ulm University, Germany; Frank Kargl, Ulm University, Germany; Fabian Wolf, Ulm University, Germany; and Michael Weber, Ulm University, Germany

7. Visualizing and Understanding Spatio-Temporal Correlations of Data Dissemination in Vehicular Environments
Tessa Tielert, Universität Karlsruhe (TH), Germany; Felix Schmidt-Eisenlohr, Universität Karlsruhe (TH), Germany; and Hannes Hartenstein, Universität Karlsruhe (TH), Germany

Monday 22 September 10.30 – 12.00
PHY & MAC
1. A Channel Update Algorithm for VBLAST Architecture in Vehicular Ad-hoc Networks
Ghassan M.T. Abdalla, University of Plymouth, UK; Mosa Ali Abu-Rgheff, University of Plymouth, UK; and Sidi-Mohammed Senouci, France Telecom, France

2. Doppler Spread Suppression Technique for an L-band Digital Radio Broadcast System
Abdelmoumen Mouaki Benani, Communications Research Centre Canada, Canada; André carr, Communications Research Centre Canada, Canada; and Martin Quenneville, Communications Research Centre Canada, Canada

3. Performance Evaluation of Vehicular Ultra-wideband Radio Channels
Youichiro Nakahata, Kitakyushu University, Japan; Katsushi Ono, Kitakyushu University, Japan; Isamu Matsunami, Kitakyushu University, Japan; and Akihiro Kajiwara, Kitakyushu University, Japan

4. Optimizing Adaptive Transmission Policies for Wireless Vehicular Communications
Miguel Sepulcre, University Miguel Hernandez, Spain; and Javier Gozalvez, University Miguel Hernandez, Spain

5. Evaluation of the IEEE 802.11p MAC Method for Vehicle-to-Vehicle Communication
Katrin Bilstrup, Halmstad University, Sweden; Elisabeth Uhlemann, Halmstad University, Sweden; Erik G. Ström, Chalmers University of Technology, Sweden; and Urban Bilstrup, Halmstad University, Sweden

Monday 22 September 13.30 – 15.00
Protocols
1. LOUVRE: Landmark Overlays for Urban Vehicular Routing Environments
Kevin Lee, UCLA, USA; Michael Le, UCLA, USA; Jerome Harri, University of Karlsruhe, Germany; and Mario Gerla, UCLA, USA

2. Media Access Technique for Cluster-Based Vehicular Ad Hoc Networks
Zaydoun Rawashdeh, Wayne State University, USA; and Syed Mahmud, Wayne State University, USA

3. Optimized Position Based Gossiping in VANETs
Boto Bako, Ulm University, Germany; Elmar Schoch, Ulm University, Germany; Frank Kargl, Ulm University, Germany; and Michael Weber, Ulm University, Germany

4. Operation and Performance of Vehicular Ad-hoc Routing Protocols in Realistic Environments
Ramon Bauza, University Miguel Hernandez, Spain; Javier Gozalvez, University Miguel Hernandez, Spain; and Miguel Sepulcre, University Miguel Hernandez, Spain

5. A Novel Headway-Based Vehicle-to-Vehicle Multi-Mode Broadcasting Protocol
Mostafa Taha, Assiut University (ARE), Egypt ; and Yassin Hasan, Assiut University (ARE) - Taibah University (KSA), Egypt

Preliminary Invitation and Call for Papers

6th Workshop on Positioning, Navigation and Communication 2009 (WPNC'09)

Location: Leibniz University of Hannover, Germany   **March 19, 2009**

Technical Program Committee

Giuseppe Abreu
University of Oulu, Finland

Sofiène Affes
University of Quebec, Canada

Susanne Boll
University of Oldenburg, Germany

Vicente Casares-Giner
Polytechnique University of Valencia, Spain

Li-Der Chou
National Central University, Taiwan

Davide Dardari
DEIS-University of Bologna, Italy

Maria-Gabriella Di Benedetto
University of Rome La Sapienza, Italy

Adolf Finger
TU Dresden, Germany

James Irvine
University of Strathclyde, UK

Thomas Kaiser
Leibniz University of Hannover, Germany

Rolf Kraemer
IHP Microelectronics, Germany

Thomas Kürner
TU Brunswick, Germany

Kyandoghere Kyamakya
University of Klagenfurt, Austria

Heinz Lüdiger
IMST, Germany

Andreas F. Molisch
Lund University, Sweden

Kyle O'Keefe
University of Calgary, Canada

Robert Piché
Tampere University, Finland

Hermann Rohling
TU Hamburg Harburg, Germany

Ilona Rolfes
Leibniz University of Hannover, Germany

Robert Schober
University of British Columbia, Canada

Steffen Schön
Leibniz University of Hannover, Germany

Klaus Solbach
University of Duisburg-Essen, Germany

Reiner Thomä
TU Ilmenau, Germany

Andy Ward
Ubisense, UK

Thomas Zwick
University of Karlsruhe, Germany

Contact

Thomas. Kaiser
email: info@wpnc.net
phone: +49 (0) 511 762 2814
web: www.wpnc.net

Scope

Mobile position-aware systems, combined with modern wireless technologies, are getting more and more important. When developing systems of this kind, problems in various fields of information and communication technology need to be solved. The workshop shall give an overview of state-of-the-art approaches and systems. As many technologies are available to deal with the variety of applications, we would like to continue to cover ultra-wideband technology as it is becoming of great importance in the area of positioning, navigation and communication. Moreover a track on the EUWB project is included in the workshop, to provide an insight on UWB-Localization technology in industrial applications.

Topics

Authors are invited to submit papers presenting scientific work or practical implementations addressing, but not limited to the following topics:

Positioning
Outdoor-Radio Systems   Hybrid Approaches
Indoor-Positioning

Navigation
Pedestrian Navigation   Vehicle and Robot Navigation

EUWB
UWB in Public Transportation   UWB in the Home Entertainment
UWB in the Automotive Environment   UWB in Heterogeneous Networks

Communication and Services
Location Based Services   Application Scenarios
Integrated Positioning & Communication

Ultra-Wideband
Positioning and Localization   Hybrid Positioning & Communication
Architectures, Systems, Protocols   Regulatory Issues, EMC/EMI

Submission Guidelines

Full-paper or poster submissions in the form of extended abstracts (max. 2 pages) or full papers (max. 10 pages) are requested electronically in PDF-format in English language until **Oct. 27, 2008**. Paper submission is handled only through the TrackChair system at http://wpnc09.trackchair.com. With acceptance, complete contributions of up to 10 pages are expected **until Feb. 1, 2009**.

Technical Exhibitions

Technical exhibitions addressing the workshop's scope are also welcome. For further details, please contact info@wpnc.net.

Publishing

The workshop proceedings in book-form will be published in the series "Hannoversche Beiträge zur Nachrichtentechnik" by SHAKER publishing and electronically in the IEEE Xplore database.

Important Dates

Submission of **Extended Abstracts/Full Papers** until: Oct. 27, 2008.
Submission of **Camera Ready Manuscripts** until: Feb. 1, 2009
Notification of acceptance or denial until: Dec. 15, 2008

VPPC09

The 5th IEEE Vehicle Power and Propulsion Conference
September 7-10, 2009, Ritz-Carton Hotel
Dearborn Michigan, USA
www.vppc09.org

Honorary Chair
Stan Ovshinky
Founder and Former President of Ovonics

Robert Stempel
Former CEO of General Motors

General Chair
Chris Mi, University of Michigan-Dearborn
mi@ieee.org

Vice Chair
James Gover, Kettering University
jgover@kettering.edu

Program Chairs
Fang Z. Peng, Michigan State University
fzpeng@egr.msu.edu

Technical Co-Chairs
Abul Masrur, md.abul.masrur@us.army.mil
Taehyung Kim, taehyung@umich.edu
David Wenzhong Gao, wgao@tntech.edu
Sonya Gargies, sonya.gargies@us.army.mil

Sponsorship Chair
Kevin Taylor, k2356@aol.com

Treasurer
Pingan He, GM, Pingan.he@gmail.com

Secretary
Kevin Bai, VPPC09@gmail.com

Tutorial Chair
Ravi Warrier, kravi@kettering.edu

Publicity Chair
Aisha Yousuf, ayousuf@ieee.org

Exhibit Chair
Jim Budwey, jimB@ictsgroup.com

Publications Chair
Taehyung Kim, taehyung@umich.edu
Sangshin Kwak, sskwak@ieee.org

Industry Committee Chair
Mark Ciechanowski,
mark.ciechanowski@ieee.org
Mark Steffka, mark.a.steffka@gm.com

Government Committee Chair
Michael O'keefe, michael_okeefe@nrel.gov
Laura Marlino, marlinold@ornl.gov

Ride & Drive
Bob Mitchell, bmitchel@kettering.edu

Awards Chair
John Shen, johnshen@mail.ucf.edu

Webmaster
Scott Lytle, scott.Lytle@us.yazaki.com

Energy Policy Panel Organizer
James Gover, Kettering University
jgover@kettering.edu

The 2009 IEEE Vehicle Power and Propulsion Conference (VPPC09) will be held in Dearborn, Michigan, USA. The conference is co-sponsored by IEEE Power Electronics Society (PELS) and IEEE Vehicular Technology Society (VTS). This year the conference will feature the theme of sustainability: hybrid, plug-in, fuel cell and battery technology. The conference also features keynote speakers from top executives of the major automotive companies, and a banquet at the Henry Ford Museum.

Conference Tracks

	Chair
Vehicular Electric Power Systems and Loads	Abul Masrur
Vehicular Power Electronics and Motor Drives	Taehyung Kim
Advanced Vehicles	Fang Z. Peng
Energy Storage Components/Systems	Sonya Gargies
Modeling, Simulation, Dynamics, and Control	David Gao
Special Sessions (Proposals are accepted)	Fang Z. Peng

Important Dates

Abstract and digest (optional full paper):	March 1, 2009
Notification of acceptance:	May 1, 2009
Camera ready copy due:	July 1, 2009
Author Registration:	July 15, 2009

Submission Guidelines of Regular Papers

Prospective authors are asked to submit their paper through the conference website (http://www.vppc09.org/). Papers should make a timely contribution to state-of-the-art technology, be of high technical and editorial quality, and be devoid of commercialism. Each paper proposal must include: technical track number and name, paper title, name(s) of author(s), business affiliation(s), mailing address(es), phone and fax numbers, and e-mail address(es) and corresponding author.

An abstract of **50-100 words** and a digest of 3-5 pages (including figures and tables) stating the objective of the paper, outlining the problem requiring solution or the method of approach to research, being explicit with respect to the type of data to be included in the full paper, and summarizing the conclusions being made. Author may optionally choose to submit a full paper for review.

Technical Forum

Authors who would like to present their work but do not wish to contribute a regular paper may select to do so. The abstract deadline is the same as the regular paper (**50-100 words**). Authors must indicate so during the process of submission of their abstracts.

Research still in early stages and doctoral research proposals can choose to submit their work to this technical forum. A regular paper is not required.

Tutorials

Proposals for tutorials must be submitted directly to the Workshop Chair no later than April 15, 2009. The workshops and tutorial will be open to all conference registrants (including students) free of charge. Please email to kravi@kettering.edu.

Exhibition and Ride-n-Drive

An exhibition and ride-n-drive will be featured at the conference. Companies wish to display their products and sponsor the conference should contact the sponsorship/exhibition chair. Please contact Bob Mitchell of Kettering University for ride-n-drive opportunities (bmitchel@kettering.edu).

International Program Committee/ VPPC Steering Committee

For more information, please see conference web site:

www.vppc09.org

South Building - lower level

1 ST SE

LOADING DOCK

FREIGHT ELEVATOR

FREIGHT ELEVATOR

MACLEOD E 4

MACLEOD E 3

MACLEOD E 2

MACLEOD E 1

PRE FUNCTION

RAMP

MEN   WOMEN

TELEPHONE

8 AVE SE

FOYER (Exhibits/Coffee)

TELEPHONE

MEN

9 AVE SE

RAMP

COAT CHECK

FIRST AID

MACLEOD HALL A1

MACLEOD HALL A2

MACLEOD HALL

ELEVATOR

PACIFIC

WOMEN

MACLEOD HALL A3

SERVICE CORRIDOR

MACLEOD HALL A4

A   B   C   D

CENTRE ST