

2007 7th International Conference on ITS Telecommunications

**Sophia Antipolis, France
6-8 June 2007**



IEEE Catalog Number: CFP0728A-PRT
ISBN 10: 1-4244-1177-7
ISBN 13: 978-1-4244-1177-1

TABLE OF CONTENTS

ITST2007

Session 1: ITS Applications - 1

User-adapted car navigation system using Bayesian network -Personalized Recommendation of content	2
Hirotoshi Iwasaki, Nobuhiro Mizuno, Kousuke Hara, and Yoichi Motomura	
An Effective Remote Transmission Method For Health Monitoring System of Bridge Group Based on SDH Technology	8
Jianting Zhou, Zongbao Liang, and Weimin Chen	
Estimating Road Traffic Congestion from Cell Dwell Time using Neural Network	12
Wasan Pattara-atikom and Ratchata Peachavanish	
Studies on the transfer data modeling in the public transport information system.....	18
Kai Sheng Liu	
Research on Bus Arrival Time Prediction Based on Multi-Source Traffic Information.....	24
Hao Chu, Yun CAI, and Xiaoguang Yang	

Session 2 : Vehicle to Vehicle/Infrastructure Communications - 1

Load Balanced AODV --- An Improvement of Performance and Fairness.....	30
Chao Gao, Shekar Nethi, and Riku Jäntti	
Localized Multiple Next-hop Routing Protocol (LMNR)	35
Shekar Nethi, Chao Gao, Riku Jäntti, and Mikael Pohjola	
Analytic method for real-time traffic problems by using Contents Oriented Communications in VANET.....	40
Junya FUKUMOTO, Naoto SIROKANE, Yuta ISHIKAWA, Tomotaka WADA, Kazuhiro OHTSUKI, Hiromi OKADA	
Smart Protocol for Inter-Vehicle Communication in Mobile Ad Hoc Network of Vehicles	46
Sayyid A. Vaqar, and Otman Basir	

Throughput Comparison of CSMA and CDMA Slotted ALOHA in Inter-Vehicle Communication.....	52
Atsunori SAKATA, Takaya YAMAZATO, Hiraku OKADA, and Masaaki KATAYAMA	

Session 3: Vehicular network Transmission Technologies

The usage of turbo code in the signal of Galileo System	59
Zhao Chen	
High Data Rate Network Using Automotive Powerline.....	64
W. Gouret, F. Nouvel, and G. El-Zein	
(Cancelled) Peak-to-Average Power Ratio Reduction in MIMO-OFDM Systems by Cross-Frequency Permutation and Inversion.....	68
Haiyang Huang, Shaoqian Li	
UWB Radio Propagation Inside Vehicle Environments.....	73
Tsutomu Tsuboi, Jun Yamada, and Naoki Yamauchi	
Two-pole and Multi-pole notch filters: a computationally effective solution for interference detection and mitigation.....	78
Daniele Borio,Laura Camoriano, and Letizia Lo Presti	

Session 4: Vehicle to Vehicle/Infrastructure Communications - 2

Connectivity in Vehicular Ad Hoc Networks in Presence of Wireless Mobile Base-Stations.....	85
Saleh Yousefi, Eitan Altman, Rachid El-Azouzi, Mahmood Fathy	
Enhanced Functions of 802.11 Protocol for Adaptation to Communications between High Speed Vehicles and Infrastructures.....	91
Atsushi Shimizu, Shoji Fukuzawa, Tatsuaki Osafune, Masato Hayashi, and Susumu Matsui	
Development of Vehicular Communication (WAVE) System for Safety Applications	94
Masato Hayashi, Shoji Fukuzawa, Hiroki Ichikawa, Toshiyuki Kawato, Jun Yamada, Tsutomu Tsuboi, Susumu Matsui, and Tetsuhiro Maruyama	
Performance analysis of intervehicle Communication for Collaborative Traffic Applications	99
Samer Ammoun, Arnaud de La Fortelle, and Fawzi Nashashibi	
Adding Geographical Interferences into the Shadowing Pattern Model for Vehicular Ad Hoc Networks Simulations	105
Dominique Dhoutaut, and François Spies	

Session 5: Sensing Technologies

Initialization Procedure for Radar Target Tracking without Object Movement Constraints	112
Markus Bühren and Bin Yang	
Recognizing road environment for vision system on autonomous vehicles.....	118
Jing PENG, and Chaojian SHI	
Extension of Automotive Radar Target List Simulation to consider further Physical Aspects.....	124
Markus Bühren and Bin Yang	
Short range automotive radar based in UWB pseudo-random coding	130
L. SAKKILA, Y. ELHILLALI, A. RIVENQ, C. TATKEU, and J-M. ROUVAEN	
Intelligent Fleet Management System with Concurrent GPS & GSM Real-Time Positioning Technology	136
Stephen Teang Soo Thong, Chua Tien Han, and Tharek Abdul Rahman	

Session 6: ITS Applications - 2

Detection and Estimation of Road Congestion Using Cellular Phones	143
T. Hansapalangkul, P. Keeratiwintakorn and W. Pattara-Atikom	
Estimation of Driving Safety from On-Board Captured Scene by using Probe Image Database.....	147
Mikio Sasaki, Kenji Muto, and Kunihiko Sasaki	
Statistical data enabled navigation system experiemnt in Beijing	153
Wenjia Wang, Bo Liu, and Hiroaki Mizuta	
(Cancelled) AMPS- Advanced Method for Pollution Surveillance in Transportation System.....	159
Hassan R. Homami, Nadereh Moini	
Vision Based Platform Monitoring System for Railway Station Safety.....	163
Sehchan Oh, Sunghuk Park and Changmu Lee	
(Cancelled) A Fuzzy Clustering Algorithm for Driving Fatigue Recognizing Based on Physiological Signals.....	168
Mao Zhe, Xin-ping Yan, Chao-zhong Wu	

Session 7: (Smart) Antennas and Propagation

Frequency selectivity parameters for broadband signals	174
Victor M Hinostroza	
Antenna Arrays Design and Calibration for 4×4 Mobile Radio Channels Measurements at 3.5 GHz.....	180

H. Farhat, and G. El Zein

- Maximum Likelihood Processing for Arrays with Partially Unknown Sensor Gains and Phases..... 185
Minghui Li, and Yilong Lu

- A polarization sensitive array for DVB-H applications..... 191
Y. Erhel, and T. Lambard

- Performance Evaluation of WCDMA in a Multicellular Network for different Multiuser Detection Strategies 195
P. Gkonis, T. Athanaileas, G. Tsoulos and D. Kaklamani

Session 8: Vehicle to Vehicle/Infrastructure Communications - 3

- Movement-Pattern Model of Pedestrians in Safe-Driving System Using RFID 202
Hideo Oda, Soichi Kubota, and Yoshiharu Okamoto

- On the Importance of Radio Channel Modeling for the Dimensioning of Wireless Vehicular Communication Systems..... 207
Miguel Sepulcre, and Javier Gozalvez

- Integrating VANETs in the Internet Core with OSPF: the MPR-OSPF Approach..... 212
Emmanuel Baccelli, Thomas Heide Clausen, Philippe Jacquet, Dang-Quan Nguyen

- Information Theory Based Traffic Pattern Detection in Mobile Ad Hoc Network of Vehicles..... 217
Sayyid A. Vaqar, and Otman Basir

- Enhanced Multi-Hop Vehicular Broadcast (MHVB) for Active Safety Applications 223
M.N. Mariyasagayam, T. Osafune, M. Lenardi

Session 9: ITS policy & Applications

- Understanding tacit knowledge networks through knowledge transfers within and beyond the organization..... 230
Susu Nousala

- A Study of the Security on Driving Safety Support System using RFID 236
Soichi Kubota, Yoshiharu Okamoto, and Hideo Oda

- Smart adaptable network device for fleet management and driver coaching 240
M. Delehaye, D. Hubaux, L. Guedria, J.-D. Legat, T. Delvaulx, and B. Goffard

- Impacts of Radio Access Protocols on the Performance of DSRC based ITS Applications 245
Fan Yu, and Subir Biswas

SatCom as part of the operational implementation of ITS applications – The SISTER Project	251
Monica Schettino, and Graham Peters	

Session 10: GALILEO

GRANADA validation of optimized Multiple Gate Delay structures for Galileo SinBOC(1,1) signal tracking.....	258
Xuan Hu, and Elena Simona Lohan	
Galileo availability for urban buses	263
Juliette Marais, Pierre-Louis Girard, Andy Prestail, Jean-Laurent Frachineau, and Emmanuel de Verdalle	
The LoCoSS project of GIS ITS Bretagne: status and perspectives	268
Fabrice Comblet, François Peyret, Cyril Ray, Jean-Marie Bonnin, and Yvon-Marie Le Roux	
A Time-Frequency Excisor for GNSS Interference.....	274
Daniele Borio, Laura Camoriano, Simone Savasta, and Letizia Lo Presti	

Session 11: Vechile to Vehicle/Infrastructure Communications- 4

<u>Millimetre communication system for IVC</u>	281
I. Yattoun, T. Labia, A. Peden, G. Landrac, M. Ney, M. Résibois, JM. Bonnin, A. Baghdadi, N. Montavont, M. Fujise, Y. Le Roux	
Experimental Evaluation of UMTS and Wireless LAN for Inter-Vehicle Communication	287
Christian Wewetzer, Murat Caliskan, Klaus Meier, and Andreas Luebke	
Performance of High Data Rate Transmission Scheme developed for train communications	293
Emilie Masson, Maria Chennaoui, Marion Berbineau, and Hervé Dumortier	
An Application-Oriented Cooperative Vertical Handoff Decision Method for Multi-interface Mobile Terminals.....	299
SHI Yan, CHEN Shanzhi, LI Yuhong, YE Lei, and DONG Decai	
The Development of SOAP-based IPv6 Middleware Platform for Intelligent Transportation Systems.....	304
Yaoming Yeh, Shih-Hsiang Lin, and Yi-Ta Tasi	

Session 12: ITS Sensor Networks

<u>Experimental Evaluation of Multi-cue Monocular Pedestrian Detection System Using Built-In Rear View Camera</u>	310
D. Tsishkou, and S. Bougnoux	

An Efficient Message Distribution Scheme for Data Query in Sensor Networks	316
Rui TENG, Bing ZHANG, and Yasuo TAN	
Capture of Vehicle Surroundings Using a Pair of Panoramic Annular Lens Cameras	321
Xiao Xiao, Guo-guang Yang, and Jian Bai	
(Cancelled) Smart Pavement Material (SPM), Innovated ITS Sensor Network and Communication Carrier	326
Hassan R. Homami, David Crouse	

Optimal Direction Finding in Unknown Noise Environments Using Antenna Arrays in Wireless Sensor Networks	332
Minghui Li, and Yilong Lu	

Session 13: ITS Architecture, Interoperability and Standards

Architecture for Secure and Private Vehicular Communications.....	339
P. Papadimitratos, L. Buttyan, J-P. Hubaux, F. Kargl, A. Kung, and M. Raya	
Multi-model architecture for ITS software design improvements.....	345
Aurelien BOCQUET, and Christophe GRANSART	
Stream Processing Based Intelligent Transport Systems.....	351
Eric Bouillet, Mark Feblowitz, Zhen Liu, Anand Ranganathan, Anton Riabov, Schuman Shao, Don Schlosnagle, and Fan Ye	
CEN standardization of the Electronic Toll Systems Architecture	357
Fausto Caneschi, and Lecit Consulting	
Networking Needs and Solutions for Road Vehicles at Imara	362
Olivier Mehani, Rodrigo Benenson, Séverin Lemaignan, and Thierry Ernst	
The ORANGE Telematic services for mass market	368
Amaury Denoo	

Session 14: IPv6&NEMO

NEMO meets VANET: A Deployability Analysis of Network Mobility in Vehicular Communication.....	375
Roberto Baldessari, Andreas Festag, and Julien Abeillé	
New personal IPv6 address scheme and universal CIM card for UCWW	381
Ivan Ganchev, and Máirtín O'Droma	
Investigation of Vehicle-to-Infrastructure Communications based on IPv6-Based Automotive Telematics.....	387
Jenn-Hwan Tarng, and Bing-Wen Chuang	

Secure AAA and Mobility for Nested Mobile Networks 392
Hanane Fathi, SeongHan Shin, Kazukuni Kobara, and Hideki Imai

An Open Network for Testing, Verification and Validation of IPv6-based ITS Components 398
Thierry Ernst, László Bokor, Antoine Boutet, Yoann Lopez

Session 15: Radio Transmission Technologies

MIMO propagation channels characteristics in tunnels..... 405
Yann Cocheril, Pierre Combeauy, Marion Berbineau, and Yannis Pousset

Method for Protection Ratio Calculation between Digital Broadcasting Systems 411
Sung Woong Choi, Wang Rok Oh, and Heon Jin Hong

A Study on Good PN Code Allocation for Position Oriented PN Code Allocation Scheme in DS/CDMA IVC 415
Masahiro Kawabata, Shinichi Niihara, Makoto Itami, and Kohji Itoh

(Cancelled) Balancing the interference probability between systems for sharing frequency spectrum..... 420
Taekjin Hwang, Sanggee Kang

The utilisation of multi-antenna enhanced mobile broadband communications in intelligent transportation systems 424
Mehul Mehta, and Mark Guinan

Session 16 : Vehicle to Vehicle/Infrastructure Communications - 5

(Cancelled) Selection of Cooperative Partner in Vehicle-to-Vehicle Communication 429
Weixin Liu, Zhang zhongpei, Li Shaoqian

Propagation Models and Physical Layer Quality Criteria Influence on Ad hoc Networks Routing 433
Ruddy DELAHAYE, Anne-Marie POUSSARD, Yannis POUSET, and Rodolphe VAUZELLE

Improving Proactive Routing in VANETs with the MOPR Movement Prediction Framework 438
Hamid Menouar, Massimiliano Lenardi, Fethi Filali

Comparison of flooding techniques for Safety applications in VANETs 444
Paul Muhlethaler, Anis Laouiti, Yasser Toor

Reliability Model of Intelligent Transport Systems 450
I. Kabashkin

Session 17: Special Session 1 - Maritime ITS

Bringing Live AIS Information on the Web Charts by Using Ajax	455
Qinyou Hu, Jinhai Chen, and Chaojian Shi	
High Speed Maritime Ship-to-Ship/Shore Mesh Networks.....	460
Jaya Shankar Pathmasuntharam, Joe Jurianto, Peng-Yong Kong, Yu Ge, Mingtou Zhou, and Ryu Miura	
Evaluation of the IEEE 802.16 Mesh MAC for Multihop Inter-ship Communications	466
Ming-Tuo Zhou, Chee-Wei Ang, Peng-Yong Kong, Jaya Shankar, Lili Zhang, Ryu Miura, and M. Fujise	
Harmonic Potential Field Method for Autonomous Ship Navigation	471
Chaojian SHI, Mingming ZHANG, and Jing PENG	
A Multi-Agent Based Intelligent Engineer Room Monitoring and Diagnosis Method for Marine Safety.....	477
Gang Yao, and Tianhao Tang	
A Novel way for Handover in Maritime WiMAX Mesh Network.....	482
Vinh Dien HOANG, Maode MA, Ryu MIURA, and Masayuki FUJISE	
Automated Collision Resolution for Vessel Traffic Management by Using Cooperative Multi-Agent Negotiation.....	486
Chun Yang, Qinyou Hu, and Chaojian Shi	
<u>Session 18: Special Session: Intelligent Mobility on railway transports</u>	
Train Management Platform for advanced maintenance of Passenger Information Systems	493
S. Verstichel, A. Baart, G. Lievens, S. Latré, F. De Turck, and F. Vermeulen	
QoS-enabled internet-on-train network architecture: inter-working by MMP-SCTP versus MIP	499
Daan Pareit, Nele Gheysens, Tom Van Leeuwen, Ingrid Moerman, Walter Van Brussel, Ines Clenjans, Wim Torfs, Peter De Cleyn, and Chris Blondia	
ICOM: A Communication Framework for Interoperable European Railways.....	505
Jérôme Billion, and Didier Van den Abeele	
itransports.com, European navigation solution for public and rail transportss.....	511
J.-C. Degand, and M. Amieux	
Use of broadband communication for information and control purposes in railways.....	513
E. M. Meyer zu Hörste	
Architecture Design of Traffic Monitoring System.....	516
Zheng Huiyuan	

Comparison of Collision Avoidance Systems and Applicability to Rail Transport 521
Cristina Rico García, Andreas Lehner, Thomas Strang, and Matthias Röckl