Elisabeth Uhlemann
and Andreas Festag

FROM THE GUEST EDITORS

Special Section Presenting the Three Best Papers from IEEE WiVeC 2013

Wireless vehicular communications has been identified as a key technology for increasing road safety and transport efficiency as well as providing Internet access on the move to ensure wireless ubiquitous connectivity. The potential of this technology has been acknowledged with the establishment of ambitious research programs in Europe, the United States, and Asia. In recent years, wireless vehicular communication has developed from a new, exciting research area to standardization, field trials, and serious deployment plans.

The IEEE Vehicular Technology Society (VTS) currently covers, through its areas of interest (mobile radio, transportation systems, and automotive electronics), all technical aspects needed to make wireless vehicular communications a reality. As a result, IEEE VTS decided to establish a technical symposium on wireless vehicular communications colocated with the reputed IEEE Vehicular Technology Conference (VTC). The IEEE International Symposium on Wireless Vehicular Communications (WiVEC) covers all aspects of wireless vehicular communication, including vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), vehicle-to-person, and vehicle-to-grid communications, over cellular networks and vehicular

ad-hoc networks (VANETs), as well as implications on transport efficiency and safety, automotive electronics, liability issues, standardizations efforts, and spectrum assignment.

After several successful WiVeC symposia in 2007 (Baltimore, Maryland), 2008 (Calgary, Canada), 2010 (Taipei, Taiwan), and 2011 (San Francisco), the 5th IEEE WiVeC symposium took place on 2–3 June 2013 in Dresden, Germany, an exciting city where industry meets academia. WiVeC 2013 was colocated with the 77th IEEE VTC.

Also this year, the WiVeC symposium showcased novel ideas and recent trends in research and technology in this continuously maturing area. In particular, three demos were exhibited: Ulm University demonstrated real-time audio transmission in mobile ad-hoc networks, the University of Kassel showcased route-related traffic signal information on smartphones transmitted using I2V communication, and the partners of the PRESERVE project demonstrated that their advanced system leads to secure communication in vehicular networks. Two distinguished speakers gave keynote speeches at the WiVeC symposium: Prof. Ralf Guido Herrtwich of Daimler AG talked about driver assistance systems based on vehicular communications, and Prof. Hannes Hartenstein of Karlsruhe Institute of Technology discussed why

vehicular communication is (still) challenging. This topic was continued by the WiVeC panel, which further elaborated on the cycle of research—deployment—research.

The Technical Program Committee (TPC) chairs selected 26 high-quality papers for oral and poster presentations out of the 55 submissions. Topics cover a broad range of wireless vehicular communication: from antennas, wireless channels, physical, medium-access control, and network layers, to security and applications, electric vehicles, and visible light communications. Finally, the three best WiVeC 2013 papers were invited to submit extended versions of their papers constituting this special section in *IEEE Vehicular Technology Magazine*.

The first article, "Controlling Congestion in Safety-Message Transmissions: A Philosophy for Vehicular DSRC Systems," by Bansal and Kenney, addresses the problem of distributed congestion control in VANETs through a specific weighted distributed control algorithm. The channel throughput is maximized by adapting the rate at which each vehicle transmits safety messages. The weighted control algorithm has provable stability, convergence, and weighted fairness attributes.

The second article, "Radio Channel Properties for Vehicular Communication: Merging Lanes Versus Urban Intersections," by Abbas et al.,

presents results from an extensive V2V measurement campaign for traffic safety applications targeting collision avoidance in merging lanes as well as intersection scenarios. In the merging lane scenario, the channel gain is found to be highly dependent on the line-of-sight (LOS) due to the sparse scattering environment. In the four-way intersection scenario, on the other hand, there exist some buildings, cars, and road signs that contribute to the signal strength even in the absence of LOS.

In the third article, "Vehicular Link Performance: From Real-World Experiments to Reliability Models and Performance Analysis," Shivaldova et al. propose a computationally inexpensive range-dependent packet error model based on a hidden Markov model whose parameters are estimated from real-world IEEE 802.11p V2I measurements. The resulting model incorporates the physical layer characteristics and propagation effects of an authentic highway environment with realistic vehicular traffic patterns.

We would like to thank all of the authors, TPC members, reviewers, and participants of WiVeC 2013. We hope to see you again at WiVeC 2014 in Vancouver, Canada, in September.

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Best Papers from the 22nd Future Network and MobileSummit

Klaus David

Future Network and MobileSummit 2013 took place in Lisbon, Portugal, 03–05 July 2013 (http://www.futurenetworksummit.eu/2013/). This was the 22nd in a series of annual conferences supported by the European Commission, which regularly attracts delegates from industry and research to share experiences and research results, identify future trends, discuss business opportunities, and identify opportunities for international research collaboration under FP7ICT and Horizon 2020. It

contributed to showcasing European research in the field and position it within the multiplicity of related initiatives supported in other regions of the world.

In the context of convergence and innovation, the 22nd Future Network and MobileSummit addressed the challenges of building the Future Internet Infrastructures, based on mobile, wireless, and fixed broadband communications technologies.

Out of 77 accepted papers, two papers received awards, and revised versions are included in this issue.

The Best Paper was awarded to "Wireless MAC Processor Networking:

A Control Architecture for Expressing and Implementing High-Level Adaptation Policies in WLANs" authored by Pierluigi Gallo, Domenico Garlisi, Fabrizio Giuliano, Francesco Gringoli, Ilenia Tinnirello, Giuseppe Bianchi, CNIT, Italy (ICT Flavia & CREW Projects). The Runner up Paper was awarded to "Cognitive Management for the Internet of Things: A Framework for Enabling Autonomous Applications" authored by Vassilis Foteinos, Dimitris Kelaidonis, George Poulios, Panagiotis Vlacheas, Vera Stavroulaki, Panagiotis Demestichas, University of Piraeus, Greece (iCore Project).

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