



WIRELESS WORLD
RESEARCH FORUM

Wireless World Research Forum

Workshop on Wireless Technologies & Applications for the Internet of Everything (IoE)

2016 IEEE 84th Vehicular Technology Conference

Monday, 19 September 2016

The Internet of Everything (IoE) is expected to bring billions of dollars in business opportunity over the next decade. The current market for communication systems enabling IoE is highly fragmented, and the revenues are being shared among multiple incumbents, many of those operating in the small and medium enterprise space. The IoE market is served by a number of wireless technology domains from Wireless Personal Area Network (WPAN) technologies for health, automation and other personal area applications, but also by wide area technologies. Both standardized and proprietary wireless solutions utilizing unlicensed Industrial, Science and Medical (ISM) bands are in use. Organized by the **Wireless World Research Forum (WWRF)**, the goal of this workshop is to bring together the representative industry views from different wireless domains for discussion and debate on the roles, co-existence and collaboration of these wireless domains.

The workshop, organized in 3 sessions on September 19, 2016 at the IEEE VTC2016-Fall Conference in Montreal, will be comprised of invited presentations by experts in the wireless IoE domain.

PROGRAM OVERVIEW:

Session 1: 11:00 AM -12:30 PM

Workshop Introduction

Dr. Shalini Periyalwar, Workshop Co-Chair

WWRF and IoE

*Dr Sudhir Dixit, WWRF Steering Board Member,
CEO and Co-Founder, Skydoot*

Spectrum Issues for IOE From International Perspective

Dr. Veena Rawat, O.C., Communications Technologies Consultant

OneNET, Big Connection

*Dr. Chih-Lin I, China Mobile Chief Scientist, Wireless Technologies
China Mobile Research Institute*



Session 2: 2:00 PM -4:00 PM

Title: TBD

*Dr. Thierry LeStable, Vice Chair, The LoRa Alliance
Technology & Innovation Manager, SAGEMCOM*

Title: TBD

*Dr. Georgios Karagiannis, AIOTI WG-3 Co-Chair
Huawei Standardization & Industry Dept.*

5G IoT Devices and System Design Considerations

Dr. Qian (Clara) Li, Standards and Advanced Technology, Intel

Coexistence of D2D/V2V with Cellular Transmissions and Multi-Link Synchronization Solutions

Dr. Konstantinos Manolakis, Huawei German Research Center

Session 3: 4:00-6:00 PM

Integrating IOT services into end-to-end cloud-based applications

*Prof. Alberto Leon-Garcia, Department of Electrical and Computer Engineering
University of Toronto*

The IoT Revolution in 5G and Beyond

*Prof. Halim Yanikomeroglu, Department of Systems and Computer Engineering
Carleton University*

Panel Discussion: IoE – Roles, Co-existence and Collaboration of Wireless Technologies for IoE

All speakers, Moderated by Dr. Sudhir Dixit

SPEAKER BIOGRAPHY:

Dr. Sudhir Dixit

**WWRF Steering Board Member
CEO and Co-Founder, Skydoot**

Sudhir Dixit recently joined the CTIF Global Capsule (CGC) as the Director of Home for Mind and Body - An International Centre for Peace, located in Rome, Italy. He is also the CEO and a Co-Founder of Skydoot, Inc, a start-up in the content sharing and collaboration space. Additionally, he is a Fellow and Evangelist of Basic Internet at the Basic Internet Foundation in Norway. From December 2013 to April 2015, he was a Distinguished Chief Technologist and CTO of the Communications and Media Services for the Americas Region of Hewlett-Packard Enterprise Services in Palo Alto, CA, and prior to this he was the Director of Hewlett-Packard Labs India from September 2009. From June 2009 to August 2009, he was a Director at HP Labs in Palo Alto. Prior to joining Hewlett-Packard, he worked in various technical and leadership roles at BlackBerry, Nokia, NSN and Verizon Communications. Sudhir Dixit has 21 patents granted by the US PTO and has published over 200 papers and edited, co-edited, or authored seven books. He is



presently on the editorial boards of IEEE Spectrum Magazine, Cambridge University Press Wireless Series and Springer's Wireless Personal Communications Journal and Central European Journal of Computer Science (CEJS). He is a Vice Chair of the Americas region of the Wireless World Research Forum (WWRF) and is on its Steering Board. He also chairs the IEEE ComSoc Sub-Technical Committee on Fiber and Wireless Convergence. From 2010 to 2012, he was an Adjunct Professor of Computer Science at the University of California, Davis, and, since 2010, he has been a Docent of Broadband Mobile Communications for Emerging Economies at the University of Oulu, Finland. A Fellow of the IEEE, IET, and IETE, Dixit received his Ph.D. degree from the University of Strathclyde, Glasgow, U.K. and an M.B.A. from the Florida Institute of Technology, Melbourne, Florida.

Dr. Veena Rawat, O.C., Ph.D.

Communications Technologies Consultant

Dr. Veena Rawat is currently working as a Communications Technologies Consultant, providing advisory services to a number of organizations and corporations nationally and internationally. In 2014 she became an Officer of the Order of Canada for her "contributions to telecommunications engineering and for leadership in establishing the global regulatory framework for radio spectrum management". Between 2011-14, Dr. Rawat worked as Vice President and Ambassador to ITU for BlackBerry. During 2004-11, Dr. Rawat was President of Communications Research Centre, the only Canadian federal government research lab conducting R&D in all communications technologies. Before heading CRC, Dr. Rawat spent 28 years within the Canadian Government where she held executive positions in managing radio frequency spectrum. Dr. Rawat 's many "firsts" in her career and her long list of national and international awards include being the first female (and first Canadian as well) ever to chair ITU's WRC (World Radio Conference) in 2003 for which she was awarded ITU's gold medal by the Secretary General.

Dr. Chih-Lin I

China Mobile Chief Scientist, Wireless Technologies

China Mobile Research Institute

Dr. Chih-Lin I received her Ph.D. degree in electrical engineering from Stanford University. She has been working at multiple world-class companies and research institutes leading the R&D, including AT&T Bell Labs; Director of AT&T HQ, Director of ITRI Taiwan, and VPGD of ASTRI Hong Kong. She received the IEEE Trans. COM Stephen Rice Best Paper Award, is a winner of the CCCP National 1000 Talent Program, and has won the 2015 Industrial Innovation Award of IEEE Communication Society for Leadership and Innovation in Next-Generation Cellular Wireless Networks. In 2011, she joined China Mobile as its Chief Scientist of wireless technologies, established the Green Communications Research Center, and launched the 5G Key Technologies R&D. She is spearheading major initiatives including 5G, C-RAN, high energy efficiency system architectures, technologies and devices; and green energy. She was an Area Editor of IEEE/ACM Trans. NET, an elected Board Member of IEEE ComSoc, Chair of the ComSoc Meetings and Conferences Board, and Founding Chair of the IEEE WCNC Steering Committee. Dr. I was a Professor at NCTU, an Adjunct Professor at NTU, and currently an Adjunct Professor at BUPT. She is the Chair of FuTURE 5G SIG, an Executive Board Member of GreenTouch, a Network Operator Council Founding Member of ETSI NFV, a Steering Board Member of WWRF, a member



of IEEE ComSoc SDB, SPC, and CSCN-SC, and a Scientific Advisory Board Member of Singapore NRF. Her current research interests center around “Green, Soft, and Open”.

Dr. Qian (Clara) Li
Standards and Advanced Technology
Intel

Dr. Qian (Clara) Li is a senior research scientist with the Standards and Advanced Technology division of Intel Communication and Devices Group (iCDG). Her research interests include information theory, communication theory, cross-layer optimization, and radio access network evolution. Since joining Intel in Sep. 2012, she has been working on 5G communications system design and most recently on 5G mmWave communications. Dr. Li has published more than 40 papers in international journals and conferences and 1 book chapter. She served as symposium co-chair, technical committee member and reviewer for several IEEE conferences and journals, including ICC, Globecom, IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, IEEE Transactions on Vehicular Technology, IEEE Communications Magazine, IEEE Wireless Communications Magazine, IEEE Communications Letters.

Prof. Halim Yanikomeroglu
Department of Systems and Computer Engineering
Carleton University

Dr. Halim Yanikomeroglu is a full professor in the Department of Systems and Computer Engineering at Carleton University, Ottawa, Canada. His research interests cover many aspects of wireless technologies with special emphasis on cellular networks. He has co-authored more than 80 IEEE journal papers on wireless technologies. His collaborative research with industry has resulted in about 25 patents (granted and applied). He is a Distinguished Lecturer for the IEEE Communications Society and a Distinguished Speaker for the IEEE Vehicular Technology Society.

Prof. Alberto Leon-Garcia
Department of Electrical and Computer Engineering
University of Toronto

Dr. Alberto Leon-Garcia is Distinguished Professor in Electrical and Computer Engineering at the University of Toronto. He is a Fellow of the Institute of Electronics and Electrical Engineering "For contributions to multiplexing and switching of integrated services traffic". He is also a Fellow of the Engineering Institute of Canada and the American Association for the Advancement of Science. He has received the 2006 Thomas Eadie Medal from the Royal Society of Canada and the 2010 IEEE Canada A. G. L. McNaughton Gold Medal for his contributions to the area of communications. Professor Leon-Garcia is author of the leading textbooks: Probability and Random Processes for Electrical Engineering, and Communication Networks: Fundamental Concepts and Key Architecture. Leon-Garcia was Founder and CTO of AcceLight Networks in Ottawa from 1999 to 2002. He is currently Scientific Director of the NSERC Strategic Network for Smart Applications on Virtual Infrastructures, and Principal Investigator of the ORF Research Excellence project on Connected Vehicles and Smart Transportation. SAVI has designed and deployed a national testbed that converges cloud computing and software-defined networking. CVST has designed and deployed an application platform for smart transportation.



Dr. Konstantinos Manolakis
Huawei German Research Center

Dr. Konstantinos Manolakis is a senior research engineer at the Huawei German Research Center in Munich, Germany, conducting research since 2014 on wireless communication systems with a focus on vehicular communication and its integration into 5G networks. Previously, he was a researcher at the Technische Universität Berlin (2012 - 2014) and the Fraunhofer Heinrich Hertz Institute (2006 - 2012), both in Berlin, Germany. He holds a Ph.D. and a M.Sc. from the TU Berlin and a Diploma in Electrical and Computer Engineering from the Aristotle University of Thessaloniki, Greece. Dr. Manolakis has contributed to several government-funded, international, and industry research projects in the area of wireless communications. His interests and expertise include physical layer analysis and design, cooperative multi-antenna transmission and signal processing for communications. He has (co-)authored more than 30 peer-reviewed publications and has received the Best Paper Award at the 77th IEEE Vehicular Technology Conference in 2013. He is member of the IEEE and the Technical Chamber of Greece.

Dr. Thierry LeStable
Vice Chair, The LoRa Alliance
Technology & Innovation Manager, SAGEMCOM

Dr. Georgios Karagiannis
AIOTI WG-3 Co-Chair
Huawei Standardization & Industry Dept.

REGISTRATION

<http://www.ieeevtc.org/vtc2016fall/registration.php>