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Welcome

Nokia Networks and the NYU WIRELESS research center at NYU Tandon School of Engineering are jointly organizing the third Brooklyn 5G Summit in Brooklyn, NY to be held on April 20 - 22, 2016. The third summit will build on the achievements of the past two years and we will discuss the next steps for making 5G a commercial reality. This year's summit will focus on overall 5G system design across the entire spectrum range, progress in 5G channel modeling and 5G regulatory aspects. In addition, we will look into concrete use cases for 5G in the evolving Internet of Things (IoT) space.

The 2016 Brooklyn 5G Summit brings together wireless/mobile industry R&D leaders in business, government, and academia to explore the future of 5G wireless. This third annual forum will present and discuss trends aimed at discovering "what's hot and what's not", and will find the best ways to take the first steps towards understanding and framing the world's 5G wireless technology future. Discussions will be centered around many cutting edge themes, including overall 5G System Design across sub 6GHz to 100 GHz bands, progress in propagation and channel modeling to appropriately

model 5G systems, and novel concepts and accomplishments in providing new massive machine and mission critical communications. The Brooklyn 5G Summit connects world leaders, and will feature keynotes, oral presentations, poster sessions and exhibits on 5G technology, including this year's focus on various IoT use cases and lively panel discussions on the future of 5G.

We look forward to your participation.

Sincerely,

A handwritten signature in blue ink, appearing to read 'H. Moïin', with a long horizontal stroke extending to the right.

Dr. Hossein Moïin
Chief Technology Officer, EVP, Nokia Networks

A handwritten signature in black ink, appearing to read 'Ted Rappaport', with a long horizontal stroke extending to the right.

Dr. Ted Rappaport
Founding Director, NYU WIRELESS



Preliminary Agenda

Day 1 - 4/20/2016 | Day 2 - 4/21/2016 | Day 3 - 4/22/2016

Day 1: 4/20/2016

Time	Description	Who
4:00 PM	Exhibits Open	
6:30-9:00 PM	Welcome Reception and Cocktail and light dinner	<u>Marriott</u> Host: Lauri Oksanen

Day 2: 4/21/2016 (MC for the Event: Peter Jarich, Current Analysis)

Time	Description	Who
7:30-8:30	Breakfast	
8:30-8:45	Welcome Address	Dr. Ted Rappaport and Dr. Amitava Ghosh

8:45-9:15	Opening Keynote: <u>5G: Enabling 5 New Dimensions of Human Possibility</u>	Dr. Marcus Weldon, President of Nokia Bell Labs and Corporate CTO
9:15-9:45	Keynote#1	Mr. Adam Koeppe, VP Network, Verizon Wireless
9:45-10:15	Coffee Break, Posters and Exhibits	
10:15-11:35	<u>Progress in Channel Models and Spectrum for 5G:</u> Talk#1: 5G Channel Model for bands up to 100 GHz, Mr. Takehiro Nakamura - 20 minutes Talk#2: mmW Bands for Mobile Communications, Mr. Michael Ha - 20 minutes <u>Panel Moderator:</u> Dr. Ted Rappaport - 40 minutes	<u>Panel Participants:</u> Mr. Michael Ha (FCC), Mr. Takehiro Nakamura (DOCOMO), Ms. Sanyogita Shamsunder (VzW), Mr. Karri Kuoppamaki (TMO-US)
11:40-1:10	Lunch, Posters and Exhibits	Speakers: Dr. Nandagopal Thyagarajan, NSF (10 min) Dr. Alenka Zajic, Asst. Professor, Georgia Tech (25 min)
1:15-1:45	Keynote#2:	Dr. Seizo Onoe, CTO (NTT DoCoMo)
1:45-2:30	<u>CTO Panel: New Wireless Business</u> <u>Panel Moderator:</u> Mr. Lauri Oksanen - 45 minutes	<u>Panel Participants:</u> Mr. Belal Hamzeh (Cablelabs), Mr. Jerry Pi (Straightpath), Mr. Eric Starkloff (NI), Mr. Khurram Sheikh (SiBEAM), Prof. Andrea Goldsmith (Stanford University)
2:30-3:00	Coffee Break, Posters and Exhibits	
3:00-4:20	<u>RAN for 5G <6GHz, cmWave and mmWave</u> Talk#1: mmWave Communications for 5G: Channel Measurements, System Design and Performance - Dr. Ashwin Sampath (Qualcomm) - 20 minutes Talk#2: Dr. Peiyong Zhu (Huawei) - 20 minutes <u>Panel Moderator:</u> Dr. Preben Mogensen (Nokia) - 40 minutes	<u>Panel Participants:</u> Dr. Ashwin Sampath (Qualcomm), Dr. Charlie Zhang (Samsung), Dr. Peiyong Zhu (Huawei), TBD (Nokia), Mr. Mikael Hook (Ericsson), Mr. Takehiro Nakamura (NTT DoCoMo)

4:20-4:45	Keynote#3	Mr. Luke Ibbetson , Chief Engineer, Vodafone
4:45-5:30	<u>CTO Panel on 5G</u> <u>Panel Moderator:</u> Dr. Tod Sizer and Mr. Peter Merz (Nokia) - 45 minutes	<u>Panel Participants:</u> Mr. Adam Koeppe (Verizon), Dr. Junyi Li (Qualcomm), Mr. Seizo Onoe (DoCoMo) , Mr. Tom Keathley (AT&T), Mr. Luke Ibbetson (Vodafone), Mr. Stephen Bye (Cspire)
6:15-11:00	Dinner and evening social	Dr. Marcus Weldon, CTO (Nokia Bell Labs)

Day 3: 4/22/2016 (MC for the Event: [Peter Jarich](#), Current Analysis)

Time	Description	Who
7:30-8:30	Breakfast	
8:30-9:00	Keynote#4: <u>Turning Concepts into Action: 5G Preparation and the Carrier Eco-system</u>	Mr. Tom Keathley , EVP, AT&T
9:00-9:30	Keynote#5: <u>5G for IoT</u>	Ms. Vida Ilderem , VP & GM, INTEL
9:30-10:00	Coffee Break, Posters and Exhibits	
10:00-10:30	Keynote#6: Toyota Research	Dr. Onur Altintas, Toyota Fellow, Toyota Research
10:30-11:50	<u>5G IoT: Automotive Industry</u> Talk#1: Dr. Gerhard Fettweis (TUD), 5G – Impact and Challenges for Automotive Applications - 20 minutes Talk#2: Mr. Tareq Bustami (NXP), 5G + Automotive Applications - 20 minutes <u>Panel Moderator:</u> Mr. Robert Heath (UTA) - 40 minutes	<u>Panel Participants:</u> Dr. Gerhard Fettweis (Vodafone Chair, TU Dresden), Mr. Roger Nichols (Keysight), Dr. Gaurav Bansal (Toyota), Dr. Preben Mogensen (Nokia), Mr. Tareq Bustami (NXP)
11:50-1:15	Lunch, Posters and Exhibits	Speaker: Dr. Andrew Hamilton , President NYU
1:15-2:45	<u>5G IoT: Ehealth and Virtual Reality</u> Talk#1: Dr. Partho Sengupta , Mount Sinai: Mobile Health Biomedical Imaging: The Shape of Things to Come - 20 minutes	<u>Panel Participants:</u> Dr. Partho Sengupta , Dr. Klaus Doppler ,

	<p>Talk#2: Mr. Klaus Doppler, Nokia Tech: Virtual reality – what it takes to be present - 20 minutes</p> <p>Talk#3: Dr. Sanjeev Bhavnani, Scripps Clinic And Institute: Rise of the Internet of Healthy Things - 20 minutes</p> <p><u>Panel Moderator:</u> Dr. Chris Collins (NYU School of Medicine) - 30 minutes</p>	Dr. Sanjeev Bhavnani
2:45-3:45	<p><u>5G Proof-of-Concept (PoC) Systems</u></p> <p>Talk#1: 5G PoC Systems, Mr. Mark Cudak, Nokia - 20 minutes</p> <p>Talk#2: 5G proof-points, Mr. Mikael Hook, Ericsson - 20 minutes</p> <p>Talk#3: Prototyping and Experimental Validation on mmWave Testbed, Dr. Arun Ghosh, AT&T - 20 minutes</p>	
3:45-4:15	Wrap-up	Mr. Lauri Oksanen and Mr. Peter Jarich



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Speakers

Adam Koeppe



Vice President Technology Planning, Verizon Wireless

Adam Koeppe is the Vice President of Technology Planning for Verizon. In this role he is responsible for the infrastructure roadmap for all elements of the Verizon Wireless radio access network, enhanced packet core, and the IMS core. Additionally, his team is tasked with charting the path to future spectrum acquisitions, developing next-generation industry standards, and defining and designing 5G, Internet of Things, and virtualized networks for Verizon.

His 16-year career at Verizon has spanned multiple roles. He was the Executive Director of Network Administration for Verizon Wireless, responsible for the administration of the Network capital and expense budgets and usage forecasting. He has held multiple field leadership roles, including Operations and Engineering Director stints in the PA/WV/OH region, and Executive Director for the New England region with responsibilities for the Network engineering, operations, and system performance.

He began his technical leadership journey first as Project Implementation Manager in Northern New Jersey, responsible for regional project management, and then as Cell and Switch Operations Manager in New York City.

Adam earned a Bachelor of Arts Degree from the University of Scranton and a Master's Degree in Business Administration/Management Information Systems from Seton Hall University. He resides in Tewksbury, NJ with his wife and three amazing kids.

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Dr. Alenka Zajic



Assistant Professor, the School of Electrical and Computer Engineering - Georgia Institute of Technology

Alenka Zajic is currently an Assistant Professor in the School of Electrical and Computer Engineering at the Georgia Institute of Technology. She has received the B.Sc. and M.Sc. degrees from the University of Belgrade, Belgrade, Serbia, in 2001 and 2003, respectively, and the Ph.D. degree in electrical and computer engineering from the Georgia Institute of Technology, Atlanta, in 2008. Before joining Georgia Tech as an

assistant professor, Dr. Zajic was a post-doctoral fellow in the Naval Research Laboratory and visiting faculty in the School of Computer Science at the Georgia Institute of Technology.

Dr. Zajic was the recipient of the 2012 Neal Shepherd Memorial Best Propagation Paper Award, the Best Student Paper Award at the IEEE International Conference on Communications and Electronics 2014, the Best Paper Award at the International Conference on Telecommunications 2008, the Best Student Paper Award at the 2007 Wireless Communications and Networking Conference, and the Dan Noble Fellowship in 2004, which was awarded by Motorola Inc. and the IEEE Vehicular Technology Society for quality impact in the area of vehicular technology. Currently, she is an editor for IEEE Transactions on Wireless Communications.

Dr. Andrew Hamilton



Andrew Hamilton was named the 16th president of New York University—one of the largest and foremost private universities in the US—in March 2015. He officially took up his duties as NYU’s president on January 1, 2016. Dr. Hamilton has an acclaimed record of success as a leader in higher education and is a noted scientist.

Most recently, Dr. Hamilton served as the vice chancellor of Oxford University—the university’s senior officer—a post he held since 2009, and as professor of chemistry at Oxford. His tenure as vice chancellor was distinguished by significant improvements in university governance and faculty relations; the launch of a new School of Government and the expansion of the business school; the enhancement of interdisciplinary research and teaching; and many other noteworthy accomplishments. Before being named as Oxford’s vice chancellor, Dr. Hamilton served as provost (2004–08) of Yale University; he had previously been Yale’s deputy provost for science and technology. In addition to his record as an academic leader, Dr. Hamilton is a noted, award-winning, widely published chemist, and he has continued to maintain his scholarly work, including an active research laboratory, while holding leadership positions.

Andrew Hamilton was born in November 1952, in Guildford, Surrey, UK. He received a first class BSc from the University of Exeter, his master’s degree from the University of British Columbia, and his doctorate from the University of Cambridge. He did post-doctoral work at the Université Louis Pasteur. He is the recipient of honorary doctorates from the University of Surrey, Tsinghua University, and the University of Exeter, among others. President Hamilton and his wife, Jennie, have three adult children, all of whom live in the United States.

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Dr. Arun Ghosh



[Director of the Advanced Wireless Technologies, AT&T; Labs](#)

Dr. Arun Ghosh is the Director of the Advanced Wireless Technologies in AT&T; Labs. He leads a team of researchers in AT&T; Labs and is responsible for development of new technology and concepts related to wireless communications. Amongst other his responsibility includes researching new technology related 5G such as massive MIMO, self-backhauling ultra-dense network, mmWave technology. Currently he is also involved in building several mmWave testbed in AT&T; Labs intended for the purposes of

developing and testing the essential building blocks of 5G. His background is in digital communication and signal processing and in the past he has also worked extensively on various subjects such as MIMO, interference cancellation, cloud RAN, advanced system architecture in the context of 3G and 4G. Dr. Ghosh also represents AT&T; in various standards organization such as 3GPP, IEEE, and WiMAX. He has also authored several bestselling books on LTE and WiMAX. He received his PhD from University Illinois at Urbana-Champaign and his undergraduate from Indian Institute of Technology.

Ashwin Sampath



Senior Director of Technology at Corporate R&D;, Qualcomm, NJ

Ashwin Sampath is Senior Director of Technology at Corporate R&D;, Qualcomm, NJ. He founded the millimeter wave research project within the R&D; division and led the project from inception through the prototype phase, while also overseeing channel measurements/modeling and system design.

In recent months, his focus has been on over-the-air performance optimization of millimeter wave systems and modem architecture. He has been with Qualcomm, CR&D; since 2005 where he has led projects related to dense small-cell networks, topics in LTE-Advanced, 3G/4G multi-mode wireless modem design for small-cell ASICs and Femto cell SoC architecture.

Prior to joining Qualcomm, from 2003-2005, he was with Texas Instruments, leading HSDPA systems engineering for a mobile SoC and before that, was Distinguished Member of Technical Staff at Bell Labs from 1997-2003. He has over 90 issued patents. He holds a PhD in Electrical Engineering from Rutgers University.

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Belal Hamzeh



VP of wireless technologies at CableLabs

Belal Hamzeh is the VP of wireless technologies at CableLabs; a non-profit R&D; consortium that is dedicated to creating and driving technologies that are critical to the cable industry's business. In this role, Belal is responsible for wireless R&D; activities across fixed and mobile wireless technologies (Wi-Fi, LTE/LAA LTE/LTE-U, 5G) and emerging wireless technologies.

Belal has extensive experience in the technology development lifecycle for wired and wireless technologies. Most recently, Belal led the DOCSIS 3.1 technology development effort going from specification draft to device interoperability testing in less than 18 months. Prior to joining CableLabs, Belal led research and development efforts for 3G/4G systems, including standardization, product development, certification and network deployments. He holds a Ph.D. in Electrical Engineering from Penn State.

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Jerry Pi



Chief Technology Officer of Straight Path Communications Inc.

Jerry Pi is the Chief Technology Officer of Straight Path Communications Inc., a leading communication asset company with one of the largest 39 GHz and 28 GHz spectrum portfolios in the United States. He leads the technology strategy and R&D; in 5G, Gbps broadband access, and backhaul solutions that maximize the value of these assets.

Prior to joining Straight Path, Jerry was a Senior Director at Samsung Research America in Dallas, Texas, where he led system research, standardization, and prototyping activities

in 4G and 5G. Jerry pioneered the development of millimeter-wave technologies for 5G. He authored the world's first invention and first journal article on millimeter-wave mobile broadband. He also led the development of the world's first 5G baseband and RF system prototype that successfully demonstrated the feasibility of 5G mobile communication at 28 GHz. During his tenure at Samsung, Jerry has also managed a variety of emerging technology research programs in smart home and IoT solutions, wearable devices, bio-signal processing and computing, mobile health, and medical imaging. Before joining Samsung in 2006, he was with Nokia Research Center in Dallas and San Diego, where he was a leading contributor to Nokia's 3G wireless standardization and modem development efforts for 3GPP2 1xEV-DV, 1xEV-DO, and Ultra Mobile Broadband systems.

He has authored more than 30 technical journal and conference papers and is the inventor of more than 100 patents. He holds a B.E. degree from Tsinghua University (with honor), a M.S. degree from the Ohio State University, and an MBA degree from Cornell University (with distinction). He is a Fellow of IEEE.

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Junyi Li



Vice President of Engineering, Qualcomm

Junyi Li is a Vice President of Engineering at Qualcomm. He was a key inventor of Flash-OFDM, arguably the first commercially deployed OFDMA-based mobile broadband wireless communications system.

He holds over 400 U.S. patents and has more than 500 pending patent applications. He was a founding member of Flarion Technologies, a startup acquired by QUALCOMM in 2006. Prior to that, he was with Bell-Labs research in Lucent Technologies.

He has a Ph.D. degree in E.E. from Purdue University and an MBA from the Wharton School at University of Pennsylvania. He is a Fellow of the IEEE. He is a co-author of the book "OFDMA Mobile Broadband Communications" published by Cambridge University Press.

He received the Outstanding Electrical and Computer Engineers award from Purdue University in 2012.

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Karri Kuoppamaki

Vice President, Network Technology Development and Strategy T-Mobile USA

Karri Kuoppamaki is the Vice President of Network Technology Development and Strategy



for T-Mobile USA. In this role, Karri is responsible for network related technology development and new innovation evaluation, as well as ensuring alignment between T-Mobile USA Network Technology and the regulatory environment, specifically in the area of radio technology and spectrum policy. Karri also drives the strategic long term technology strategy activities both internally as well as towards external stakeholders.

Karri has 20 years of international experience in product marketing, product development and technology management in the wireless industry, and has worked in multiple countries in Europe, Africa and USA. He has a proven track record in introducing, defining and developing new technologies for the telecommunications market.

Responsible for technology development for Radio Access, including spectrum strategy and regulatory items, for T-Mobile USA. Additionally, driving new innovation and long term technology strategy and development with focus on Radio Access evolution and device development. More than 20 years of wireless experience in USA, Europe and Africa.

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Klaus Doppler



[Connectivity lab leader at Nokia Technologies.](#)

Klaus joined Nokia in 2002. Currently, he is leading the Connectivity lab at Nokia Technologies. The Connectivity Lab innovates at the intersection of Connectivity with Digital Media and Digital Health and creates new product concepts. In the past, Klaus has been responsible for the wireless research and standardization (4G, 5G, Wi-Fi) in Nokia Technologies. He received several inventor awards at Nokia, has more than 75 pending and granted patent applications and published 30 journal and conference publications and

book chapters.

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Luke Ibbetson



[Head of Vodafone Group Research and Development organisation](#)

Luke Ibbetson has been with Vodafone since 1996 and currently heads the Vodafone Group Research and Development organisation, responsible for all aspects of network / IT research and strategy including Vodafone's participation in international standards, definition of the architectural blueprint for future networks, trials of emerging / disruptive technologies and concepts and long term spectrum matters.

Luke is leading Vodafone's 5G programme and is a proud pioneer of Narrow Band IoT technology.

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Marcus Weldon

[President of Bell Labs and Corporate Chief Technology Officer Nokia](#)

As President of Bell Labs and Corporate Chief Technology Officer, Marcus Weldon is



responsible for coordinating the technical strategy across the company and driving technological and architectural innovations into the portfolio.

Marcus is considered one of the luminaries in our industry in terms of the clarity, depth and breadth of his vision, and his track of picking the right technological disruptions and opportunities, from vectoring for copper access, to the evolution to LTE overlay and Small Cells, to the emergence of virtualization and SDN as profound industry changing forces and the movement towards edge cloud architectures. He combines this vision with the power of Bell Labs, to create a unique innovation engine whose goal is to 'invent the future' of the networking and communications industry.

Commenting on this joint role, Marcus said: "We are in a unique period in human history where we are on the verge of a new technological revolution defined by the digitization and connection of everything and everyone. This will require 100-fold or more improvement in network scale, flexibility, programmability and cost per bit. And in order to achieve these goals, the cloud will merge with and move to the edge of the network, and device functionality will similarly be increasingly be implemented in this 'cloud integrated network'. These types of big networking challenges are quintessential 'Bell Labs challenges' and we are rising to meet them as we have for the better part of 90 years by fundamental technological breakthroughs that have the potential to be 10 times better than those available today in any key dimension."

Marcus holds a B.S in Chemistry and Computer Science from King's College, London, and a Ph.D. degree in Physical Chemistry from Harvard University. In 1995, he joined the Physics Division at AT&T; Bell Labs as a post-doctoral researcher, before becoming a Member of Technical Staff in the Optical Materials Division. He won a series of scientific and engineering society awards for his work on electronic and optical materials.

He was selected as one of the Global Telecoms Business Power 100 of the most influential people in ICT in 2014 and one of their 'Top CTOs to watch in 2015'. He was a member of the Executive Board of ATIS (Alliance for Telecommunications Industry Solutions) and a member of the former FCC Open Internet Advisory Committee. He is on the Board of Trustees of the Liberty Science Center in New Jersey and an advisor to select Venture Funds. He is the editor of the recent book "The Future X Network: A Bell Labs Perspective" (Taylor and Francis, 2015).

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Mikael Hook



[Director Radio Access Technologies, Ericsson Research](#)

Mikael Höök received his M.Sc. Degree in Electronic Engineering from the Royal Institute of Technology in Stockholm. He has 20 years of experience in the areas of research and standardization of wireless technologies. Mikael Höök has been Head of Radio Access Technologies at Ericsson Research since 2007. He is based in Kista, Stockholm, and the responsibility covers research of air-interface design, advanced signal processing, multi-antenna systems, propagation and RF design. Results are fed into standardization, regulation and product development. Höök has been involved in the research and standardization of 2G, 3G, 4G and now 5G radio access.

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Nandagopal Thyagarajan



Program Director at the National Science Foundation

Thyaga Nandagopal is a Program Director at the National Science Foundation in the Directorate of Computer & Information Science and Engineering (CISE), where he manages wireless networking and mobile computing research within the Networking Technologies and Systems (NeTS) program. He also serves as the co-chair of the Wireless Spectrum Research and Development Senior Steering Group (WSRD SSG), which co-ordinates spectrum-related research and development activities across the

Federal government.

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Partho Sengupta



Director of Cardiac Interventional Echocardiography Program

Partho P. Sengupta is the Director of Cardiac Interventional Echocardiography Program, Cardiac Ultrasound Research and Core Lab and an Associate Professor of Medicine in Cardiology at Mount Sinai's Zena and Michael A. Wiener Cardiovascular Institute and the Marie-Josée and Henry R. Kravis Center for Cardiovascular Health.

Dr Sengupta completed his clinical residency and cardiology fellowship from Mayo Clinic Rochester and Arizona respectively. He has over 150 peer-reviewed publications. The primary goal of his research is to detect early stages of cardiovascular disease using state-of-the-art cardiac ultrasound technologies.

Prior to his move to Mount Sinai, he served as the Director of Noninvasive Cardiology and Cardiac Imaging at University of California, Irvine. He is an Associate Editor for the Journal of American College of cardiology: Imaging and has served as a Board of Director for the American Society of Echo and as the Chair of the ASE Telehealth and New Technology Taskforce.

He has won several excellence awards including ASE's Young Investigator Award in 2004, Mayo Clinic Research Award in 2007, Mayo Brother's Distinguished Fellowship Award in 2009 and AACIO Young Investigator Award in 2010. He was awarded ASE's 14th Feigenbaum Lecturership for recognizing his significant contributions to research in the field of echocardiography. He delivered ASE's first-ever presentation using hologram technology at ASE's 24th Annual Scientific Sessions on July 1 in Minneapolis, Minnesota. His futuristic ideas, investigative skills and international work have been widely acclaimed by major media outlets including heart.org and Forbes.

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Peter N. Jarich



VP of Consumer and Infrastructure Research at Current Analysis

VP of Consumer and Infrastructure Research at Current Analysis, Peter Jarich manages the firm's syndicated research into the network equipment and software solutions deployed at telecom service providers along with the consumer services, service innovations and connected devices riding on those networks.

This role sees Peter directing the company's analysts looking into mobile networks and services, wireline network infrastructure and services, and the competitive environment surrounding tablets and smartphones, including Current Analysis' regular tracking of service innovations, and device marketing dynamics.

Peter holds a BA in Economics from Cornell University and a MS in Foreign Service from Georgetown University.

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Sanjeev Bhavnani



Scripps Clinic And Institute

Sanjeev Bhavnani is a physician investigator and assistant professor of medicine in the division of cardiology at Scripps Clinic and Research Institute where he is focused on the design of mobile health and digital medicine clinical trials. These technology-enabled trials have ranged across new health innovations including wearable and wireless devices, smartphone applications, nanosensors, lab-on-a-chip technologies and electronic health records across different patient populations and different designs including N-of-1 and

community engagement designs. These investigations aim to determine the impact of new technologies on healthcare quality, costs, and outcomes and have been conducted in the US, Canada, Africa and India. He is the recipient of awards from the Qualcomm Foundation and professional medical societies. Dr. Bhavnani participates on several regional and national organizing committees to develop digital health strategies and has been recognized as a 'Top Doc' by San Diego Magazine for his efforts in mobile health.

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Seizo Onoe



CTO, NTT DoCoMo

Seizo Onoe was named Chief Technology Officer and Executive Vice President and a Member of the Board of Directors in June 2012. Mr. Onoe became a Senior Vice President and Managing Director of the R&D; Strategy Department in June 2008. He was a Vice President and took positions as Managing Director of the Radio Access Network related development departments from July 2002 to June 2008.

He has been responsible for leading initiatives in the research and development of the analog cellular system, the digital cellular system, W-CDMA/ HSPA, LTE, LTE-Advanced and 5G. He is working on the research and development of radio access networks, core networks, consumer devices and cloud services. He has worked for NTT and NTT DOCOMO since 1982, acquiring more than 30 years of experience. Mr. Onoe has a master's degree in electronics from the Kyoto University Graduate School of Engineering.

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Stephen Bye



CTO of C Spire

Stephen Bye is the CTO of C Spire, with more than 24 years of engineering, operations, product development, business planning and marketing experience with telecom, cable and wireless service providers. His current responsibilities within C Spire include technology planning, network development, network and device engineering, wireless and fiber network deployment, construction and field services as well as the day to day operations of the wireless and FTTH networks, serving consumer and business

customers.

Prior to this position, he was the CTO of Sprint, where Stephen was responsible for technology and network innovation, strategy, planning and development. His team was accountable for the network capital investment plan

and operating budget, technology and network planning, development, product integration, transport and access, domestic and international roaming, network, systems and device testing and field integration.

He has previously held executive positions with Cox Communications, AT&T;, inCode Wireless, BellSouth International, Optus and Telstra. Stephen is a Senior Member of IEEE and a Fellow of the Institute of Engineering and Technology.

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Takehiro Nakamura



[VP and Managing Director of 5G Laboratory in NTT DOCOMO, Inc](#)

Mr. Nakamura has been working for research and development of the W-CDMA, HSPA, LTE/LTE-Advanced and 5G technologies.

He has been engaged in the standardization activities in Japan. He is currently the Acting Chairman of the Strategy & Planning Committee in 5G Mobile Communication Promotion Forum(5GMF) in Japan.

He has been contributing to standardization activities in 3GPP since 1999. He had contributed to 3GPP TSG-RAN as a chairman during April 2009 to March 2013.

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Tom Keathley



[Senior Vice President, Wireless Network Architecture and Design, AT&T; Services, Inc.](#)

Tom is responsible for the architecture, design, and delivery of AT&T;'s Mobility network and the wireless device requirements and certification. Tom and his team also lead the architecture development for AT&T;'s access technologies. Tom serves as the Chairman of the 4G Americas Board of Governors and sits on the Board of the Next Generation Mobile Networks organization.

Previously as Vice President -Service Realization, Tom was responsible for the delivery of the video architecture and platform supporting the evolution of the UVerse service. He was also responsible for the design and delivery of the mobility packet core as well as the transition of that platform to the User Defined Network Cloud.

Tom has 30 years of experience in the telecommunications industry and served in a number of leadership roles in AT&T;, Cingular, Southwestern Bell Mobile Systems, Cellular One and Southwestern Bell Telephone. Tom is a graduate of the University of Missouri - Rolla, where he earned a bachelor's degree in Electrical Engineering. He also holds a Masters' Degree in Business Administration from Southern Illinois University.

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Vida Ilderem

[Vice President, Intel Labs](#)

[Director, Wireless Communications Research](#)

Dr. Vida Ilderem is vice president of Intel Labs and director of wireless communication



research (WCR) at Intel Corporation. WCR explores breakthrough wireless technologies to fulfill the promise of secure, energy efficient, seamless and affordable connection for people and things, such as next-generation wireless protocols and technologies, and low power communication.

Prior to leading WCR, Ilderem was vice president and director for integrated computing research (ICR), and integrated platform research (IPR) at Intel Labs. ICR and IPR explored the evolution of connected computing with focus on new emerging platforms. Research vectors included breakthrough technology innovations for seamless connectivity, highly integrated small form factors, sensor and actuators, and enablement of Internet of Things and wearables.

Prior to joining Intel in 2009, Ilderem served as vice president of Systems and Technology Research at Motorola's Applied Research and Technology Center, where she was also recognized as Motorola Distinguished Innovator. Ilderem holds a doctorate and a master's degree in electrical engineering from Massachusetts Institute of Technology, a bachelor's degree in electrical engineering and a bachelor's degree in physics from California State University, Fresno. She has 27 issued patents.

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