Federal - Commercial Spectrum Data:
Understanding Information Exchange Needs, Issues and Approaches

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Speaker Biographies

Byron Barker

Byron Barker serves within the Department of Commerce's National Telecommunications and Information Administration (NTIA) Office of Spectrum Management as Chief of its Strategic Planning Division. His office has the responsibility to develop the long range strategic plans, policies and comprehensive strategies to ensure spectrum access for our nation's vital interests of national security, public safety and economic opportunity, now and in the future.

Mr. Barker provides overall program management responsibility in carrying out the President's mandate in identifying and making available 500 MHz of spectrum for wireless broadband services. He also serves as co-chair of the Wireless Spectrum R&D Senior Steering Group within the Networking & Information Technology R&D Committee.

Previous to coming NTIA, Mr. Barker served in Defense Information Systems Agency's (DISA) Defense Spectrum Organization (DSO). His responsibilities were concentrated on the development of the department's long-term spectrum strategies and comprehensive plans to include the development of the department's first enterprise architecture for spectrum management, serving as the framework in transforming spectrum management to support the Department's future operations.

Mr. Barker, originally an Oklahoma native, has spent the last thirteen years within the Washington DC area. He earned a Bachelor of Science Degree in Electrical Engineering from the University of Oklahoma and completed his post-graduate studies earning a Master's of Art in Computer Resources and Database Management at Webster University, St. Louis, MO.

Mr. Barker began government service in 1987 serving as an electronics engineer for the Air Force located at Tinker AFB, OK where he worked on various radio communications projects and programs that included both terrestrial and satellite based applications.

Jeffrey Boksiner

Jeffrey Boksiner is the Chief Engineer for the RF Communications Division at the US Army Communications-Electronics Research, Development and Engineering Center (CERDEC) Space & Terrestrial Communications Directorate (S&TCD). For CERDEC, he leads efforts on spectrum efficiency and effectiveness, including the work on Policy-Based Radio (PBR), Dynamic Spectrum Access (DSA) technologies, interference and propagation modeling, spectrum sensing and various physical layer technologies. Also, he carries out basic research on meta-materials and their application to antenna systems for tactical communications. Dr. Boksiner holds a PhD in Physics from Rutgers University and a MS and BS in Electrical Engineering from Polytechnic Institute of NYU. Prior to joining CERDEC, he was with Telcordia Technologies specializing in Spectrum Management, Electromagnetic Compatibility (EMC), and electrical and RF safety. He has also held leadership positions in various standards activities including ITU, IEC, IEEE, and NFPA

Shawn Chang

Shawn Chang is the Chief Democratic Counsel, communications and technology policies, for the House Energy and Commerce Committee. He has been a member of the Committee since 2009, first as Counsel then as Senior Counsel to Ranking Member Henry A. Waxman (D-CA). Prior to joining the Committee, Shawn served as legislative assistant to Rep. Patsy Mink (D-HI), Rep. Diane Watson (D-CA) and Rep. (now Senator) Tammy Baldwin. Shawn also served as deputy policy director for Free Press between 2007 and 2008. He received his bachelor degree from Georgetown University School of Foreign Service and his law degree from George Washington University School of Law.

John Chapin

John Chapin is a Program Manager in the DARPA Strategic Technology Office. He joined DARPA in August 2011. His areas of focus include advanced wireless systems and associated spectrum access and spectrum sharing technologies, and advanced networking technology for dynamically changing and heterogeneous communications systems. Dr. Chapin most recently served as Visiting Scientist at the Research Laboratory of Electronics of the Massachusetts Institute of Technology and concurrently as Chief Scientist at TV Band Service, LLC. He earlier spent 9 years in technical leadership roles at Vanu, Inc., a provider of software-designed radio (SDR) based cellular radio access networks.

His work there on SDR and cognitive radio earned multiple awards including IEEE Dynamic Spectrum Access Networks (DYSPAN) conference best paper, SDR Forum best paper, and SDR Forum Industry Achievement Award. Prior to Vanu he was on the faculty of the Electric Engineering and Computer Science department of MIT, where his research earned the Presidential Early Career Award for Scientists and Engineers (PECASE).

Pierre de Vries

Pierre de Vries is a Senior Adjunct Fellow and Co-Director of the Spectrum Policy Initiative at the Silicon Flatirons Center for Law, Technology, and Entrepreneurship at the University of Colorado, Boulder. He researches the intersection between technology, commerce and government policy. His current work focuses on ways to maximize the value of radio operation, e.g. by clarifying the rights and responsibilities of wireless systems, and decentralizing spectrum management decisions. De Vries is a former Chief of Incubation and Senior Director of Advanced Technology and Policy at Microsoft Corp. He holds a D. Phil. in physics from the University of Oxford

Linda Doyle

Prof. Linda Doyle is director of CTVR / The Telecommunications Research Centre and holds a Chair in the School of Engineering in Trinity College, University of Dublin, Ireland. CTVR is the national telecommunications research in Ireland, headquartered in Trinity College and involving six other academic institutions and over 120 researchers. The centre focuses on research in the area of optical and wireless networks and works closely with industry. Linda's areas of expertise are in the domains of cognitive radio, reconfigurable networks, spectrum management and creative arts practices. Linda is a member of the Ofcom Spectrum Advisory Board. She is a Fellow of Trinity College Dublin. She is a Director of Xcelerit and SRS, two recent CTVR spin-outs. She is on the Board of the Festival of Curiosity – a STEM outreach activity for children based on a city-centre yearly science festival. She is also on the Board of the Douglas Hyde Gallery in Dublin.

Mark Gibson

With over 30 years of spectrum management experience, Mark is responsible for developing domestic and international business opportunities for Comsearch. In addition to leading Comsearch's technical and business development efforts for AWS, 700 MHz and TV White Space products and services, he has led efforts

to address spectrum sharing between Federal government and commercial users. He is a co-chair of the Commerce Spectrum Management Advisory Committee, where he has also co-chaired working groups related to spectrum sharing and data exchange issues.. He has led Comsearch's spectrum management efforts including the development of spectrum sharing analysis protocols and sharing criteria, as well as development of Comsearch's engineering services and software products. He has led Comsearch's efforts in working with the American Society for Healthcare Engineering as their technical partner for WMTS frequency coordination. He has authored several papers on spectrum sharing and relocation and has advised numerous wireless participants in their system design. He received his BSEE from the University of Maryland.

David "Mark" Johnson

Mr. Johnson is the Director of Navy Electromagnetic Environmental Effects (E3) and Spectrum Policy and Programs (OPNAV N2N6F15). Mr. Johnson serves as the OPNAV Resource Sponsor for the Navy and Marine Corps Spectrum Center (NMSC) and the NAVSEA Force Level E3 Program. He is the CNO technical advocate for the coordination and implementation of operational E3/Spectrum policy, coordinates cross-mission area efforts with platform/facility sponsors, and determines current and future technical Radio Frequency (RF) compatibility requirements and develops plans. Since joining OPNAV in Nov 2009, he has transformed Navy E3/Spectrum awareness and strategy, including development of the Information Dominance Electromagnetic Spectrum Usage Roadmap which is still in use today, and is the template for the DoD Long Term Spectrum Usage Strategy. Mr. Johnson began his career in 1988 as an engineer supporting the Naval Surface Warfare Center Dahlgren Division (NSWCDD) E3/Spectrum Division, as a contractor until 1996, and subsequently as a Government employee until June 2006.

In Nov 2003, Mr. Johnson began a rotational/developmental assignment, supporting the Force E3/Spectrum Program at NAVSEA. Initially performing as the E3/Spectrum liaison for Surface Combatants, he was ultimately hired by NAVSEA to simultaneously function as the Force E3/Spectrum Program Manager and the E3 Technical Authority for Ships, Submarines and Shore Stations. He held this dual-hatted role at NAVSEA from June 2006 until Nov 2009.

Mr. Johnson received his B.S. degree in Electrical Engineering from Penn State University in 1988. Mr. Johnson was named the 2008 Federal Engineer of the Year for NAVSEA. He was the recipient of the Copernicus Award in 2011, received the 2012 DoN Information Management/Information Technology (IM/IT) Excellence Award, presented to the N2/N6 E3/Spectrum team for their efforts on the Electromagnetic Spectrum Usage Roadmap and the National

Broadband Plan, and was the recipient of the John J. Lussier Electromagnetic Spectrum Leadership Award in 2014.

Ira Keltz

Ira Keltz is Deputy Chief of the FCC's Office of Engineering and Technology. In this role, he assists in managing several divisions of engineers, attorneys and economists in the development of telecommunications policies for spectrum use in the United States. Mr. Keltz is responsible for balancing complex engineering, policy, economic and public interest issues to implement national spectrum policy for non-Federal spectrum users. This includes allocating spectrum for licensed services, setting technical rules for unlicensed devices, and implementing procedures for equipment certification.

Mr. Keltz previously served as Chief of the Office of Engineering and Technology's Electrical Compatibility Division and Deputy Chief of its Policy and Rules Division. In addition, he has been a Senior Technical Advisor in the Wireless Bureau's Public Safety and Private Wireless Division, where he managed the implementation of the Commission's Universal Licensing System. Mr. Keltz has been with the FCC since 1994. Prior to the FCC, Mr. Keltz held positions with Loral Advanced Projects and LSA, Inc. Mr. Keltz holds a Masters Degree in Electrical Engineering from the George Washington University and a Bachelors Degree in Electrical Engineering from the University of Michigan.

Howard McDonald

Howard McDonald joined the Defense Information Systems Agency (DISA) Defense Spectrum Organization (DSO) in December 2008 after a 23 year career in private industry addressing a wide variety of challenges associated with DoD spectrum operations. He has successfully guided multidisciplinary teams to perform electromagnetic environmental effects and spectrum management related activities at all phases of the equipment life cycle. He is currently the Branch Chief for DSO's Advanced Access Initiatives Branch, leading DSO's efforts to address the impacts of emerging technologies, including Dynamic Spectrum Access and Policy-Based Spectrum Management, on DoD spectrum operations.

Dan Mintz

Dan Mintz is the President and Principal Consultant of ESEM Consulting, providing technology insight, strategic management and business capture

support to small and mid-sized companies in the Federal marketplace as well as program and technology advice to Federal organizations.

He also serves as a Senior Advisor for the Advanced Technology Academic Research Center (ATARC), www.atarc.org. ATARC is a non-profit organized to create an academic community-of-interest to help the government solve tough problems relating to mobile technology. In these positions, Dan brings his experience as the US Department of Transportation's (DOT) departmental CIO from 2006-2009 and business acumen from serving as a CTO and a COO in the federal business marketplace.

Dan is a former Federal 100 winner and is a frequent speaker at conferences and events on mobility, Government 2.0 and 3.0 and cyber-security issues. He writes a blog covering organizational disruption, technology development, and his take on the world at www.ourownlittlecorner.com, is on Facebook and 'tweets' using the name @technogeezer. He teaches IT management as an adjunct professor at the University of Maryland University College (UMUC).

Dan, a University of Maryland graduate, and his wife, Ellen, are the parents of the two greatest daughters ever; Miriam who works in the Entertainment business in New York City and Tamar who has for obscure reasons decided to work in the same federally facing IT business as her father in the Washington DC area.

Fredrick "Fred" Moorefield

Mr. Fredrick "Fred" Moorefield is currently serving as the Director of Spectrum Policy & Programs for the Department of Defense (DoD) Chief Information Officer (CIO). His primary duty is the development and oversight of the DoD's spectrum policy and their strategic plans, which ensure efficient and effective use of the electromagnetic spectrum. He leads the development and representation of DoD positions in national and international forums and provides program oversight for spectrum resource management programs. He has served in this position since October 2012. Mr. Moorefield joined Federal service in 1989, starting in the Air Force as a civil servant where he served for 19 years doing Research, Development and Acquisition. Later, he also served in DISA at the Joint Spectrum Center for 4 years where he was first introduced to spectrum management.

Mr. Moorefield's education includes a Bachelor's degree in mathematics from Wilberforce University, located in Wilberforce, Ohio and a Bachelor's degree and a Master's degree in Electrical Engineering from the University of Dayton in Dayton, Ohio.

Eric Nelson

Eric Nelson received his M.S. in EE from the University of Washington in 1993 with an emphasis in applied electromagnetics. He served for five years as a combat communications officer in the Washington Air National Guard, held systems engineering positions in both metropolitan and airborne cellular companies, and was the Director of RF Engineering for CommNet Cellular. He joined ITS in 2002 and led the development of the Public Safety Communications Research lab's land mobile radio testing capability and spearheaded the formation of a conformity assessment program to evaluate conformance, performance, and interoperability of Project 25 equipment. He currently leads the Spectrum and Propagation Measurements Division which evaluates new spectrum sharing technologies such as dynamic frequency selection and dynamic spectrum access and develops and deploys custom systems to measure radiated emissions, radiowave propagation, interference susceptibility, and spectrum occupancy.

Jung Min "Jerry" Park

Jerry Park received a Ph.D. degree in electrical and computer engineering from Purdue University in 2003. He is currently an associate professor in the Department of Electrical and Computer Engineering at Virginia Tech, and the site director of an NSF Industry-University Cooperative Research Center (I-UCRC) called Broadband Wireless Access & Applications Center (BWAC). As the site director of BWAC at Virginia Tech, Park is leading several sponsored research projects on wireless networks and network security. He is widely recognized for his pioneering work on enforcement and security problems in cognitive radio networks. His research interests include cognitive radio networks, spectrum sharing technologies, network security and privacy, and applied cryptography. Current or recent research sponsors include the NSF, National Institutes of Health (NIH), Defense Advanced Research Projects Agency (DARPA), Army Research Office (ARO), Office of Naval Research (ONR), SANS (SysAdmin, Audit, Network Security) Institute, and industry sponsors. More details on his research interests can be found at http://www.arias.ece.vt.edu and http://www.bwac.wireless.vt.edu/index.html . He is a recipient of a 2014 Virginia Tech College of Engineering Faculty Fellow Award, a 2008 NSF Faculty Early Career Development (CAREER) Award, a 2008 Hoeber Excellence in Research Award, and a 1998 AT&T Leadership Award. He is a senior member of the IEEE and the ACM.

Stacy Prowell

Stacy Prowell is the Chief Cyber Research Scientist for Oak Ridge National Laboratory, where his work focuses on applying high-performance computing and computationally intensive methods to automated reverse engineering, semantic analysis, system composition, and software forensics. Stacy also serves as the program manager for the laboratory¹s Cybersecurity for Energy Delivery Systems program, and holds a joint appointment in the Electrical Engineering and Computer Science Department at the University of Tennessee. Stacy has managed commercial software development projects and has consulted on the design, development, and testing of applications from relatively simple consumer electronics to complex medical devices.

Anant Sahai

Anant did his undergraduate work in EECS at UC Berkeley from 1990-1994. From 1994-2000 he was a graduate student at MIT studying Electrical Engineering and Computer Science (Course 6 in MIT-speak) and was based in the Laboratory for Information and Decision Systems. In 2001 he was on the theoretical/algorithmic side of a team at the startup Enuvis, Inc. developing new adaptive software radio techniques for GPS in very low SNR environments (such as those encountered indoors in urban areas). He joined the Berkeley faculty in 2002. He currently serves also as faculty adviser to UC Berkeley's chapter of Eta Kappa Nu. He has previously served as the Treasurer for the IEEE Information Theory Society. ('07-'09 inclusive)

His research interests span information theory, decentralized control, and wireless communication --- with a particular interest at the intersections of these fields. Within wireless communication, he is particularly interested in Spectrum Sharing and Cognitive Radio.

Steve Sharkey

Steve Sharkey is Senior Director, Chief Engineering and Technology Policy in T-Mobile's Government affairs office in Washington, DC. He has overall responsibility for T-Mobile's technical policy agenda. A priority focus is policies that ensure that T-Mobile has access to sufficient spectrum as it deploys the next generation of broadband services. Prior to joining T-Mobile, Mr. Sharkey was Senior Director, Regulatory and Spectrum Policy for Motorola with overall responsibility for Motorola's global regulatory and advocacy efforts. Prior to joining Motorola, Mr. Sharkey was the lead regulatory technical representative for AirTouch Communications. Prior to AirTouch, Mr. Sharkey served in a variety of roles at the Federal Communications Commission.

Mr. Sharkey has a Bachelor of Science in Electrical Engineering from the University of Delaware.

Rangam Subramanian

Rangam Subramanian is a Technology strategy, spectrum policy, business development and general management professional, with over 22 years of experience in Telecommunications. He is currently serving the National Telecommunications Information Administration (NTIA) within the United States Department of Commerce, as a Lead Technology and spectrum policy strategist. Dr. Subramanian is focused on Spectrum strategy for the nation and the related rulemaking to enable collaborative next generation wireless communications technology development and implementation, that is critical to the national economic development and security. Prior to joining the NTIA, Dr. Subramanian served the Idaho National Laboratory, as a Chief of Technology and Business strategy. In his previous work with the industry, he has made significant contributions to technology innovation, business strategy, R&D, operations management, mergers & acquisitions, telecom network services, international customer management. In 2012, Dr. Subramanian delivered a United States Congressional testimony on, "Avoiding the Spectrum Crunch: Growing the Wireless Economy through Innovation". He is a serving member of the White House, Office of Science and Technology Policy (OSTP)/ National Information Technology R&D (NITRD) initiated Wireless Spectrum Sharing R&D (WSRD), Senior Steering Group (SSG). Dr. Subramanian holds an MBA from the Kellogg School of Management, Northwestern University, Evanston, IL and a PhD in Computer Science & Systems Engineering from the Oakland University, Rochester, MI, USA.

Neeti Tandon

Neeti Tandon has over 25 years of experience as a subject matter expert on a broad range of topics including technology evaluation, spectrum protection, new band acquisition, interference mitigation and radio capacity modeling. Internally, as a lead member of the technical team, Neeti supports AT&T's regulatory and strategy teams on technical position for various FCC's NPRM proceedings including AWS, 700 MHz, 600 MHz, 3.5 GHz. Externally, she has chaired position papers and sub committees under CSMAC, 4G Americas etc. on RF and spectrum related topics . Neeti has experience in developing modeling tools to perform network capacity and TV repacking analysis for AT&T's strategic business needs. Neeti has been involved in ongoing discussions between the FCC and Industry Canada and Mexico on spectrum management

and network co-existence efforts for the 700 MHz band along the border. She has received her Master's in Computer Science from George Mason University.

Tom Taylor

TBA

Wade Trappe

Wade Trappe received his B.A. in Mathematics from The University of Texas at Austin in 1994 and his Ph.D. in Applied Mathematics and Scientific Computing from the University of Maryland in 2002. He is currently a Professor in the Electrical and Computer Engineering Department at Rutgers University, and Associate Director of the Wireless Information Network Laboratory (WINLAB), where he directs WINLAB's research in wireless security. He has led several federally funded in the area of cybersecurity and communication systems, projects involving security and privacy for sensor networks, physical layer security for wireless systems, a security framework for cognitive radios, the development of wireless testbed resources (the ORBIT testbed, www.orbit-lab.org), and new RFID technologies. Prof. Trappe led a DARPA initiative into validating and prototyping physical layer security mechanisms, an Army Research Office project on the theory of physical layer security, and is currently leading an Army CERDEC project on cognitive radio networks and MIMO communications. He has developed several cross-layer security mechanisms for wireless networks, jamming detection and jamming defense mechanisms for wireless networks, and has investigated privacy-enhancing routing methods. He has published over 100 papers, including six best papers awards (two in media security, one in Internet design, one in cognitive radio systems, one in mobile computing, and one in wireless security). His papers have appeared in numerous IEEE/ACM journals and premier conferences, spanning the areas of signal processing and security (e.g., "Subverting MIMO Wireless Systems by Jamming the Channel Estimation Procedure," in Proceedings of the third ACM Conference on Wireless Network Security; "Security and Privacy Vulnerabilities of In-Car Wireless Networks: A Tire Pressure Monitoring System Case Study," in Proceedings of the 19th USENIX Security Symposium). His experience in network security and wireless spans over 15 years, and he has co-authored a popular textbook in security, Introduction to Cryptography with Coding Theory, as well as several notable monographs on wireless security, including Securing Wireless Communications at the Physical Layer and Securing Emerging Wireless Systems: Lower-layer Approaches. Professor Trappe has served as an editor for IEEE Transactions on Information Forensics and Security (TIFS), IEEE Signal Processing Magazine (SPM), and IEEE Transactions on Mobile Computing (TMC). He served as the lead guest editor for September 2011 special issue of the

Transactions on Information Forensics and Security on "Using the Physical Layer for Securing the Next Generation of Communication Systems" and also served IEEE Signal Processing Society as the SPS representative to the governing board of IEEE TMC.