



Wireless Telecommunications Bureau, FCC



**National Association of Telecommunications
Officers and Advisors**



Informational Forum

Augmenting Mobile Broadband In Your Community

**An Overview of Distributed Antenna Systems
and Small Cell Solutions**

February 1, 2012

OPENING REMARKS

Rick Kaplan, Chief, Wireless Telecommunications Bureau, FCC



Rick Kaplan is the Chief of the Wireless Telecommunications Bureau at the Federal Communications Commission (FCC); a position he assumed in June 2011. Prior to his current appointment, Mr. Kaplan served as Chief Counsel to FCC Chairman Julius Genachowski, where he managed the Commission's overall agenda, was responsible for policy coordination among the Bureaus and Offices, advised the Chairman on wireless, engineering and technology, and public safety issues.

Before joining the Chairman's staff, Mr. Kaplan was the Chief of Staff and Media Legal Advisor for Commissioner Mignon Clyburn, and served as deputy coordinator of the FCC DTV task force, where he oversaw a number of aspects of the Commission's role in the nation's successful transition to digital television. He practiced regulatory law and appellate litigation at Sidley Austin LLP, and served in the Office of the General Counsel at the U.S. House of Representatives.

Mr. Kaplan began his legal career as a law clerk for Judge Harry T. Edwards of the U.S. Court of Appeals for the D.C. Circuit. Prior to his legal career, Mr. Kaplan founded and operated a sports management and public relations agency that represented and served professional athletes and sports-related organizations.

Sharon Gillett, Chief, Wireline Competition Bureau, FCC



Sharon Gillett is Chief of the Federal Communications Commission's Wireline Competition Bureau. Prior to joining the Commission, Ms. Gillett served as the Director of the Massachusetts Broadband Institute and previously headed the Massachusetts Department of Telecommunications and Cable. From 1995-2006, Ms. Gillett was at the Massachusetts Institute of Technology (MIT), where she engaged in academic research, program management, and teaching focused on Internet and Telecommunications Policy, with a particular focus on broadband. She is a former software engineer and manager at Thinking Machines Corp. and BBN Communications Corp, where she worked on ARPANET computer networking technology.

Joanne Hovis, President of the National Association of Telecommunications Officers Association (NATOA)



Joanne Hovis is President of the National Association of Telecommunications Officers Association (NATOA). Joanne is also President of CTC Technology & Energy, a public sector engineering and business consulting firm. Joanne specializes in planning and implementation of public and non-profit broadband and technology strategies. Before joining CTC in 1997, she practiced law in Washington, DC and Chicago. She is a graduate of the University of Chicago Law School and the University of Wisconsin-Madison.

Ken Fellman, Partner, Kissinger & Fellman, P.C. and member of FCC Intergovernmental Advisory Committee



Ken Fellman is a partner in the Denver law firm of Kissinger & Fellman, P.C. FCC Chairman Julius Genachowski appointed Ken to serve on the FCC's Intergovernmental Advisory Committee. He serves as City Attorney for Cherry Hills Village, Colorado and general counsel for the intergovernmental consortium EAGLE-Net Alliance, which is building a statewide broadband network connecting Colorado's community anchor institutions. Ken is immediate Past President of the National Association of Telecommunications Officers and Advisors (NATOA). Ken served as chairman of the FCC's Local and State Government Advisory Committee (LSGAC), from 1997 through 2003. He served as the Mayor of Arvada, Colorado from 1999 – 2007, and as an at large member of the Arvada City Council from 1993 – 1999. His law practice emphasizes local government representation, particularly telecommunications, local government and utilities law nationwide. Ken is also an

adjunct professor at the University Of Colorado College Of Law, where he teaches Telecommunications Law and Policy.

Professor Dennis Roberson, Vice Provost, Executive Director and Research Professor of Computer Science, Illinois Institute of Technology



Professor Dennis Roberson has been Vice Provost, Executive Director and Research Professor with the Illinois Institute of Technology (IIT) since June 2003, where he established a new undergraduate business school focused on entrepreneurship and technology, a wireless research center (WiNCom), IIT's corporate relations initiative, and is developing research centers and business ventures in association with public and private sector partners. Professor Roberson is a member of the FCC Technical Advisory Committee (TAC). He co-chairs the Small Cell Technology Subcommittee. From April 1998 to April 2004, Professor Roberson was Executive Vice President and Chief Technical Officer of Motorola, Inc. From 1971 to 1998, he held senior executive positions with NCR Corporation, AT&T, Digital Equipment Corp. (now part of Hewlett Packard) and IBM. He holds Bachelor of Science Degrees in Physics and Electrical Engineering from

Washington State University and a Master of Science in Electrical Engineering from Stanford University. Professor Roberson is a Director of the National Advisory Council for the Boy Scouts of America.

PANEL II: DAS & SMALL CELL TECHNOLOGIES

Allen Dixon. Business Development Manager, Corning MobileAccess



Over a 20-year plus career in the optical fiber industry, Allen Dixon has held numerous positions at Corning Cable Systems (formerly Siecor) including field engineering, product line management, marketing, and market development. In his current role as Business Development Manager for Corning MobileAccess, Allen is focused on the increased deployment of distributed antenna systems in Enterprise installations.

A vocal proponent of the role of standards in industry, Allen is the current chair of the DAS Forum, sponsored by PCIA, and a veteran of the ATM Forum, TIA and IEEE standards organizations.

He is a 1985 graduate of the University of Florida.

Norine Luker, Sr. Director, Utility Administration, NextG Networks, Inc.



Norine Luker has spearheaded utility administration at NextG Networks since 2003 where her group has negotiated more than 150 pole-attachment agreements nationwide. She has collaborated with power companies, telephone companies, cable companies and municipalities to develop processes and standards for attachment of small cell and distributed antenna system components to utility poles and streetlights in the right-of-way, both directly and in federal and state regulatory forums. With over 16 years of telecommunications experience, Norine is a veteran of the right-of-way, and helped pioneer municipal franchising for wireless attachments as Network Real Estate Manager at Metricom. She has also worked as a consultant on numerous projects involving fiber placement and antenna siting at On Fiber, American Tower and at Tetra Tech Wireless.

Stephen Garcia, Senior Manager of Land Use - External Affairs, Crown Castle



Stephen Garcia is the Senior Manager of Land Use – External Affairs at Crown Castle with responsibility for managing all acquisition of permits and entitlements for distributed antenna systems, including rights-of-way and franchise agreements in the Western United States. Prior to joining Crown Castle, Stephen Garcia worked for 15 years as a director and senior level consultant in planning, public rights-of-way and government affairs for AT&T Wireless, SprintPCS, Cingular and Newpath Networks. In the past two years, Stephen has successfully secured entitlements for more than 400 DAS facilities in Arizona, Colorado and California. Stephen attributes much of his success to innovative design solutions and agreements that preserve Crown Castle’s CLEC rights and also support the needs of local government efforts to permit DAS in their communities.

James P. Seymour Ph. D., Senior Director, Wireless CTO Organization, Alcatel-Lucent



James Seymour received the B.S.E.E., M.S.E.E., and Ph. D. degrees from Purdue University, W. Lafayette, IN in 1989, 1991 and 1994 respectively where his research focused on improved phase synchronization techniques for mobile communication systems. In July of 1994, he joined AT&T Bell Laboratories in Whippany, NJ as a member of the technical staff for the network wireless Radio Performance and Analysis Group where his work focused on improved equalization schemes for TDMA PCS systems. In 2006 he received the Bell Labs Fellowship award for his outstanding and seminal contributions to wireless technology and standards spanning 2G, 3G and 4G systems and significant impacts on Alcatel-Lucent's business through outstanding technical support of Alcatel-Lucent's customers. He is currently working for Alcatel-Lucent in Naperville, IL as Senior Director of RAN

Strategy in the Wireless CTO organization focused on technology strategy for Alcatel-Lucent's broadband wireless solutions.

Alex Gamota, Vice President for DAS Real Estate, American Towers



Alex Gamota is currently American Tower's Vice President for DAS Real Estate. In this role, his responsibilities include identifying and acquiring the necessary real estate rights to operate distributed antenna systems (DAS) and other wireless networks throughout the United States. Overall, Alex has 20+ years of US and international experience achieving results for technology-driven infrastructure businesses in senior management, consulting, and board roles leading to over \$4.0B in bottom-line revenues, savings, and investment opportunities. He has a broad background in wireless communications, infrastructure financing and deployment, and asset management in regulated and dynamic environments.

Prior to Alex's current position, he held senior positions in two different utility-based wireless infrastructure companies: General Manager, Shared Wireless Networks for National Grid Wireless US and Senior Vice President, Operations for SpectraSite Transco UK.

Alex is a frequent panelist at industry events and contributor to trade regulatory activities. He holds a Masters degree from MIT and a Bachelors degree from the University of Michigan.

PANEL II: DAS & SMALL CELL – BROADBAND USES IN THE PUBLIC SPACE

Seth Buechley, President, SOLiD Technologies



Seth Buechley is President of SOLiD Technologies, USA, a leading provider of DAS and optical transmission solutions. Seth began his wireless career as a co-founder of CORD Communications, a turnkey network implementation company acquired by publicly-traded WesTower Corporation in 1998. He was then a founding investor and Vice Chairman of Washington Oregon Wireless (WOW), a Sprint PCS affiliate serving a total population of 1.5 million. In 2001, Seth co-founded Tri-Power Group, a leading DAS integrator based in the San Francisco Bay Area. After working in the investment banking and management consulting fields, in 2008 Seth returned to exciting DAS market.

David Tuttle, Director of Public Safety Solutions, Cellular Specialties, Inc.

A public safety veteran with more than 25 years of experience, David Tuttle is the Director of Public Safety Solutions at Cellular Specialties, Inc., which offers products and services to help public safety agencies secure mission-critical in-building solutions. Mr. Tuttle began his career as a Paramedic Firefighter and then served as Director of Emergency Services in Queen Anne's County, MD. He served as Director of Public Sector Strategy at Nextel and later as a Director at Sprint Nextel Custom Network Solutions prior to his current role at CSI.

Marty Miller, Chief Technical Officer, Children's Hospital Los Angeles



Marty Miller is the Chief Technology Officer at Children's Hospital Los Angeles (CHLA), the only Children's Hospital on the West coast ranked in all 10 pediatric specialties by U.S. News & World Report. Working with leaders from physicians, nursing, research, and administration, he leads the technology strategy development at CHLA. Recently, CHLA opened a new, 480,000 square foot, state-of-the-art, 317-bed facility featuring technology solutions designed to improve quality and safety, streamline clinical workflows, and improve clinical communications. He has been at Children's Hospital Los Angeles since 2006.

Previously, Marty spent four years as an IT executive in the Healthcare Payer market. He successfully completed 5 mergers, a community hospital acquisition, and was part of the executive team that took the company through IPO. Marty has also served as in various IT management positions at Ingram Micro and IBM Global Services, rounding out a 15-year career in Information Technology.

Marty has lived in Southern California for the past 18 years, is married and has two children.

Mary Eileen McLaughlin, University of Michigan



McLaughlin presently works for the University of Michigan directing a strategic effort to improve cellular services in 26 million square feet of campus and hospital space. Previously she was the Chief Technical Officer at a leading Research and Education (R&E) network in the country, where she implemented a key overhaul of backbone network infrastructure. Prior to her CTO role she was recruited to Verio, Inc. shortly after its founding as a Tier 1 Internet Service Provider (ISP). She established in Chicago Verio's first start-up ISP. She served as President of Verio's 10-State Midwest Region. At Bell Communications Research, she designed a national transmission quality of service test used by all carriers in landmark national studies and was pivotal in the defining and deploying of new data services. She served as the Technical Assistant to the Executive Vice President. She has served as a National Science Foundation (NSF) Proposal Reviewer and a

member of an NSF panel, which provided network architecture review and funding recommendations to the NSF on the current Internet architecture and advanced networking. She is an invited and active participant in the Institute of Electrical and Electronics Engineers (IEEE) and United Nations Foundation Humanitarian Technology Challenge task force. She has been a guest lecturer and taught Voice Over IP (VoIP) at Northwestern University's Master of Information Technology Program. She has given legislative testimony on expanding broadband networking.

Dave Fasshauer, Director of Implementation & Engineering, ExteNet Systems, Inc.



Dave has over 32 years of experience in telecommunications, 29 years in the engineering, construction and project management of fiber optic networks and seven of those years engineering, constructing, project managing, and implementing DAS networks.

Dave joined the ExteNet Systems team in early 1995 as their first Implementation and Engineering Director. Dave has been involved in the deployment of distributed antenna systems in numerous markets across North America, including Chicago, Houston, Dallas, Suburban Detroit, Ann Arbor, San Diego, Boston, Las Vegas, and Toronto, Canada; and is currently the Implementation Lead for The University of Michigan Campus Project. The University of Michigan Campus Project consists of as many as 60 outdoor nodes, indoor and outdoor coverage in 200 plus buildings,

seven hospitals, three sports arenas, and spans three cities. It also includes coverage in the 3rd largest stadium in the world, Michigan Stadium, which has a capacity of over 110,000 fans.

Before joining ExteNet Systems, Dave served as a Director of Engineering and Network Development for Global Crossing and prior to that spent 20 plus years with Ameritech and SBC. While with Ameritech, Dave played an integral part in the planning and roll out of their successful cable TV business in the Detroit and Chicago markets and also the implementation of Ameritech Communications, 2000 mile long distance fiber network which spanned across 5 states.

Dave Schneider, Director, Municipal Relations, ExteNet Systems, Inc.



Dave has over 25 years of experience in land development, zoning, and governmental coordination within both the private and public sectors, providing a unique background touching on community planning, construction, carrier and tower company facility siting, government advocacy and DAS implementation.

As a charter member of the ExteNet Systems team, Dave has touched nearly every aspect of distributed antenna system deployment. Prior to joining ExteNet Systems, Dave served as the National Vice-President of Strategic Sites for TrinTel Communications, the industry's leader in innovative tower siting. Earlier in his wireless career, he also provided regulatory and site acquisition services for numerous wireless service providers.

Before entering the telecommunications industry Dave worked as a Community Planner for Ann Arbor, MI, Canton Charter Township, MI, and Coconut Creek, FL. He has also been a licensed building contractor for over 20 years. Dave served as the Chairman of the DAS Forum Market Development Committee and represents ExteNet on the DAS Forum Council of Founding Members, the DAS Advocacy Committee, and the Joint DAS Forum./UtiliSite Committee.

Dave holds a B.S. degree in Environmental Planning and a M.S. Degree in Geography, both from Eastern Michigan University.

Amos J. Loveday, President, Atchley, Hardin, Lane, LLC



Amos Loveday is founder and president of Atchley, Hardin, Lane LLC, a consulting firm that advises businesses and government agencies on historic preservation and related cultural issues. Clients have included major telecommunication corporations, tower and windmill builders, pipeline companies, law firms, and government agencies.

Before organizing AHL he was employed by Sonneschein Nath and Rosenthal, LLP ; served as the Cultural Resources Specialist for the Federal Communications Commission, Ohio's State Historic Preservation Officer; the Ohio Historical Society's Chief Curator and legislative liaison; and associate (adjunct) professor on the Ohio State University History Faculty. He has also served on the National Conference of State Historical Preservation Officers Board of Directors, The

National Trust for Historic Preservation Board of Advisors, the Editorial Board of the *Public Historian*, and as a Senior Fellow at the John Glenn Institute for Public Service and Public Policy. He is the recipient of the Ohio Academy of History's Distinguished Service Award, the A. Chapman Parson's Award for outstanding legislative service, and commendations for public service from two Ohio Governors and the Ohio General Assembly.

Dr. Loveday holds a Ph.D. in history with major fields of study in the history of science and technology and business history.

Joseph Mullin, Vice President of Engineering and Operations, InSite Wireless, LLC



Mr. Mullin has more than 25 years of experience designing and deploying wireless networks, including expertise developing specialized in-building coverage solutions for medical, industrial and entertainment venues throughout the US. Previously, Mr. Mullin was Vice President of Engineering for Arch Wireless where he was responsible for network design, facility management, and regulatory compliance. Mr. Mullin also has developed and marketed wireless network products with Glenayre Electronics and Harris RF Communications. He managed construction projects for the US Army Corps of Engineers in the US and Europe. Mr. Mullin holds a B.S. in Civil Engineering from Worcester Polytechnic Institute, and an MBA from Boston University. He is a Registered Professional Engineer and is a member of the IEEE and the Radio Club of America.

LUNCH PRESENTATION: SPORTS STADIUM DAS

Brian Domingo, Business Development Manager, CommScope



Brian is a Business Development Manager for CommScope's RF Applications organization and is based out of Chicago, IL. He is responsible for the strategic alignment of both indoor and outdoor fiber based DAS systems along with traditional multi-band over the air repeater solutions. In his current role, Brian works with both sales and engineering/project management teams to help qualify new business opportunities. He holds joint sales calls with Regional Account Managers and conducts high-level product training in all of CommScope's accounts.

Brian is also responsible for qualifying new features to existing products base off of customer feedback and trial in partnership with internal product line management. Prior to CommScope, Brian had a long tenure with Sprint in multiple positions. He was a Business Sales Manager of Sprint's 4G Business Unit and also held positions as a Sr. RF Engineering/Supervisor and Solutions Engineer. Brian also worked at Motorola as Business Quality Manager, and Agilent Technologies as Field Account Manager. His first engineering design position was with Andrew Corporation in the mid 90's as a RF Antenna Design and Production Engineer.

PANEL III: AUGMENTING BROADBAND IN CITIES & COMMUNITIES

Robert L. Delsman, Esq, SVP, Network Real Estate and Government Affairs, NextG Networks, Inc.



Mr. Delsman has held various executive and legal positions at NextG since joining as a senior director in 2002, and served as General Counsel from 2009-2011. From 1996 to 2001, Mr. Delsman was senior director of government relations and network real estate for Metricom, Inc. Before that, he practiced real estate law. Mr. Delsman received his B.A. in classics and philosophy from Gonzaga University, his M.A. Oxon. in Literae Humaniores from Oxford University, and his J.D. from Hastings College of the Law (University of California).

Christopher Sinclair, Senior Director, Network Real Estate, NextG Networks, Inc.



Mr. Sinclair has been involved in managing network real estate and governmental relations for wireless and wireline providers focused on the deployment of telecommunications in the public right-of-way since 1996, securing agreements and equivalent approvals in jurisdictions across the country. He joined NextG Networks in 2004 and presently is responsible for municipal interface in the Southeast. Prior to NextG, he worked in similar capacities with CSX Fiber Networks (a subsidiary of CSX Corporation), OnFiber Communications, and, Metricom, Inc., in its nationwide Ricochet wireless roll-out. Mr. Sinclair received his Bachelor of Science degree, *magna cum laude*, from the University of Colorado, Boulder

Robert A. Sutton, Divisional Deputy Solicitor, City of Philadelphia



Robert Sutton is Divisional Deputy City Solicitor and heads the Intellectual Property division of the City of Philadelphia Law Department. His division is responsible for handling technology and telecommunications contracts for the City. The division also provides legal support for public right-of-way management, cable television franchise oversight, public safety communications and other wireless networks. Mr. Sutton earned his BA and JD degrees at the University of Pennsylvania. He worked for three years with corporate mergers and acquisitions with Skadden Arps Slate Meagher & Flom, before joining the City of Philadelphia Law Department in 1989. During his first decade with the City, Mr. Sutton worked with environmental litigation, handling air pollution enforcement and superfund defense. He then moved on to telecommunications and cable franchising, and worked with representatives of the telecom industry, utilities, and several municipal departments to achieve reform of right-of-way management procedures.

Mr. Sutton speaks Swedish and Portuguese, having spent a junior year in Stockholm studying local government consolidation, and having worked in Brazil as a human rights volunteer in the 80's during a popular movement for democracy that ended twenty years of military rule.

Stephen Garcia, Senior Manager of Land Use - External Affairs, Crown Castle



Stephen Garcia is the Senior Manager of Land Use – External Affairs at Crown Castle with responsibility for managing all acquisition of permits and entitlements for distributed antenna systems, including rights-of-way and franchise agreements in the Western United States. Prior to joining Crown Castle, Stephen Garcia worked for 15 years as a director and senior level consultant in planning, public rights-of-way and government affairs for AT&T Wireless, SprintPCS, Cingular and Newpath Networks. In the past two years, Stephen has successfully secured entitlements for more than 400 DAS facilities in Arizona, Colorado and California. Stephen attributes much of his success to innovative design solutions and agreements that preserve Crown Castle’s CLEC rights and also support the needs of local government efforts to permit DAS in their communities.

Biography for Mary Hamway, Vice Mayor, Town of Paradise Valley, Arizona



Mary has been on the Paradise Valley Town Council for eight years and is currently serving her second term as vice mayor. During her time serving the community of Paradise Valley, Mary has worked on many projects including a public/ private partnership to renovate a school athletic field, major resort redevelopment projects and she serves on the Board of Directors for the Scottsdale Convention and Visitors Bureau. Earlier in her career, Mary spent 20 years in information technology specializing in database design, operating systems management, document imaging and application workflow design.

Karmen Rajamani – Regional Director, DAS Strategic Relations, American Tower



Karmen has over 12 years of experience in the tower and wireless industries with a focus on municipal outreach. Currently, Karmen is a Regional Director (South Plains and Southeast Regions) where she and her team negotiate agreements with pole owners, fiber providers, municipalities, and perform community outreach. Karmen has extensive experience in zoning, permitting, tower development, and site acquisition nationwide and was American Tower Corporation’s National Zoning Manager before joining ATC Outdoor DAS, LLC. Prior to joining American Tower, Karmen was a Corporate Portfolio Manager with a fixed wireless company where she negotiated several large portfolio agreements with national office REITs. Karmen earned a J.D. from Tulane School of Law and is a licensed attorney in Maryland and New Jersey. She can be reached at (C) 215-868-3738.

Kruti Desai, Right of Way Section Manager, Charlotte Department of Transportation

Kruti Desai , PE is the Right of Way Section Manager for the Charlotte Department of Transportation. Kruti worked as an engineer for 11 years with the Charlotte City Engineering Department as a Project Manager for Transportation projects and 5 years with the North Carolina Department of Transportation. She holds a Bachelor of Science in Civil Engineering from N.C. State University.