

The 11th Americas Spectrum Management Conference

11 & 12 October

The National Press Club | Washington DC

DAY 1

Moderator: **Rob Yates**, Co-Founder, LYA

09:00 – 09:40 **Keynote Session - Fireside Chat**

Jessica Rosenworcel, Chairwoman, FCC

Alan Davidson, Assistant Secretary of Commerce for Communications and Information

09:40 – 10:55 **Session 1: New thinking, new coordination, new National Spectrum Strategy**

In February this year, the FCC and NTIA announced a new initiative to improve government coordination on spectrum management, with the aim of introducing updated procedures, closer coordination and the sharing of information between the two agencies. As part of the initiative, the agencies have agreed to work together on the development of a new National Spectrum Strategy, and to develop a roadmap for a long-term national approach to spectrum use and planning to meet current and future demands. This session will look at the goals of this new initiative of increased co-ordination and at what the objective that has been set of delivering a 'whole-of-government' approach to spectrum policy will mean in practice. It will look at some of the high-level challenges that are faced by policymakers looking to manage and balance both federal and commercial spectrum bands and users, and at the key priorities that should be addressed within the scope of the new National Spectrum Strategy.

- What coordination is currently being seen amongst Government agencies when it comes to spectrum policy, and what impact can the spectrum coordination initiative have on increasing this?
- How can measures in this way be used in practice to make a positive impact on key priorities such as 5G rollout and tackling the digital divide?
- What should be the roles of FCC, NTIA and the other 'end user' federal agencies when it comes to making decisions on the future use of federal bands? To what extent is there a need to reassess where the balance of power lies?
- What should be the key aims, objectives and priorities of the National Spectrum Strategy?
- How can the National Spectrum Strategy, and the spectrum coordination initiative more broadly, help to increase the efficiency of spectrum usage by both federal agencies and commercial users?
- How can it be ensured that the need for ensuring national and homeland security is balanced with the need for efficiency and flexibility in the way in which federal spectrum is used?

Moderator: **Johanne Lemay**, President and Co-Founder, LYA

Umair Javed, Chairwoman Rosenworcel's Chief Counsel, FCC

Scott Blake Harris, Senior Spectrum Advisor, NTIA

Tom Power, Senior Vice President & General Counsel, CTIA

Tom Stroup, President, SIA

Tim Harrington, Chairman of the Board, UWB Alliance

Alex Roytblat, Vice President of Regulatory Affairs, WiFi Alliance

10:55 – 11:15 **Break**

11:15 – 12:20 **Session 2: WRC-23 preparation – key issues and emerging positions as we enter the final straight**

This conference is taking place just over 12 months before WRC-23, and regional positions both across the Americas and elsewhere in the world are starting to become clearer. This session will provide the opportunity to take stock and receive an update on the preparatory work that is being done, and at some of the challenges that still remain as stakeholders throughout the Americas work together to ensure a successful outcome for the region.

- Where are we with regard to preparation at the regional (CITEL) level for WRC-23?
- Are we seeing consensus starting to emerge with regard to the development of common regional proposals across the key agenda items?
- Which issues are expected to be the most challenging in finding agreement?
- Looking beyond WRC-23, with WRC-27 expected to be a crucial step in exploring options for the development of 6G, are any early trends or positions being seen here?

Moderator: **Cindy Cook**, Chair, Conference Preparatory Meeting (CPM) for WRC-23; Director, International Spectrum and Standards, ISED

Dante Ibarra, World Radiocommunication Conference Director, FCC

Victor Martinez, Chairman, PCC.II WG for the Preparation for WRC-23, CITEL

Daudeline Meme, Vice President & Associate General Counsel, Verizon

Kim Baum, Global Spectrum & Regulatory Policy, GSOA

Jose Ayala, Chairman, Spectrum Group for CITEL Region (Americas), GSA

12:20 – 13:20 **Lunch**

Session 3: The Spectrum Sweet Spot: Balancing the needs of key users across mid-band frequencies

13:20 – 14:20 **Session 3i: Gauging the success of CBRS: has the ‘shared spectrum superhighway’ been delivered?**

Born out of the 2012 PCAST report “Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth”, CBRS was envisaged as a ‘shared spectrum superhighway’, allowing a range of commercial networks to operate in the same band as DoD operations. Using an innovative 3-tier sharing system, it was launched with the hugely ambitious goal to open up the 3.55-3.7 GHz band to a wide range of new use cases, ranging from small, private deployments to large-scale operator networks. Now, with the new ecosystem in the band having been fully operational for over 2 years, this session will provide the opportunity to take a look at the extent to which it has been successful in achieving these goals.

- What was initially envisaged by the 2012 PCAST report that was the starting point for CBRS, and to what extent has this vision been successfully delivered?
- What criteria should be used in order to gauge the success of CBRS?
- What can be said to have worked well, and what has possibly worked less well?
- What have been lessons learnt from experiences to date and what has been learnt more broadly about the challenges and the potential of real-time spectrum sharing in this way between different users in the same coverage areas?
- How much is the spectrum in the band actually being used by the various stakeholders across different use cases?

- To what extent can the band provide a genuine solution to meet the needs of enterprise users through the facilitation of private, localised networks?
- What power limits are currently in place across different use cases, and are these providing the correct balance in protecting against interference and allowing the band to be used to its maximum efficiency?
- What emerging trends and developments are being seen in the band, and how can it be expected that the ecosystem develops in the future?

Moderator: **Rebecca Hanson**, Media Executive Spectrum and Broadcasting, Summit Ridge Group

Matthew Pearl, Associate Bureau Chief, The Wireless Telecommunications Bureau (WTB), FCC

Rebecca Dorch, Acting Director, Institute for Telecommunication Sciences, NTIA

Dave Wright, President, OnGo Alliance

Justin Markle, VP, Wireless Partnerships & Development, Comcast

14:20 – 15:20 **Session 3ii: C-band – where are we now?**

Following some initial delays in order to find a solution to interference issues with altimeters, Verizon and ATT have now launched 5G networks using the first batch of spectrum that they were awarded in the C-band auction at the end of 2021. At the same time, the clearing process in the band continues, with the Phase II accelerated deadline for satellite companies to relocate services in the 3700-4000 MHz band set for December 2023. Meanwhile in Canada, following the record prices that were seen in the 3.5GHz auction that was held last year, preparations are now underway for a second auction of C-band spectrum to be held in the 3.8GHz band. This session will take stock of the situation across the band in both countries. It will look at the progress that has been made to date in the rollout of services in the band, and the difference that this is already starting to be seen with regard to how this is affecting 5G rollout more broadly. Going forward, it will look at expected timelines ahead as the process of rolling out new services and maximising the value of this key spectrum continues.

- What progress are satellite operators making with regard to the second stage of clearing the spectrum that was awarded in the band in the US and releasing it for 5G use? Are they on track to meet the phase II accelerated deadline?
- What impact on rollout was caused by the debate around interference with altimeters, and to what extent is this now solved?
- What initial strategies are being used by AT&T and Verizon for the launch of 5G using C-band frequencies? What early patterns in performance and capacity are being seen?
- What progress has been made in Canada since the 3.5GHz auction and what timeframes are expected for the rollout of 5G services in this spectrum?
- What plans are emerging for the 2nd C-band auction in the 3.8GHz band? How much additional spectrum is being freed-up?
- What impact has the reallocation of C-band spectrum had on satellite operators in both Canada and the US, and how can it be ensured that the long-term future of key satellite services are secured?
- What similarities and what differences are seen between the approaches taken in the US and Canada, and what lessons can potentially be taken from each side?

Moderator: **Janette Stewart**, Partner, Analysys Mason

Matthew Kellison, Senior Director, ISED Canada

Jeffrey Marks, Vice President, Global Technology Policy and Regulatory Affairs, Nokia

Patrick Welsh, Vice President of Federal Regulatory and Legal Affairs, Verizon

Gerry Oberst, Senior Counsel, Hogan Lovells

15:20 – 15:40 **Afternoon Coffee**

15:40 – 16:40 **Session 3iii: Fireside Chat - Maximising the efficiency of the emerging new 6GHz ecosystem**

Ever since the decision was taken in the US and Canada to make the full 1200MHz of spectrum in the 6GHz band available on an unlicensed basis, work has been taking place to develop the rules, standards and technologies that will shape the developing new ecosystem in the band. This session will look at the state of play on this, and the expected timelines ahead as the Wi-Fi industry and other stakeholders look to take advantage of the spectrum that is available and rollout services in the 6GHz band.

- What ecosystem has started to grow in the 6GHz frequency since the FCC decision to make the entire 1200MHz in the band available on an unlicensed basis?
- What potential does the band offer for the rollout of fixed wireless access services, and what progress has been made in testing and deploying networks?
- What rules are in place regarding power limits for low power indoor (LPI), very low power (VLP) and standard power unlicensed uses of the band? In what scenarios are each of these uses permitted and how will this work in practice?
- What work is being done on the development and certification of AFC services, and how could dynamic spectrum-allocation services of this type help to offer Wi-Fi networks operate in full-on power mode?
- What impact will this have on the use cases and service offerings that are enabled?
- What potential is there for other technologies such as 5G New Radio Unlicensed (5G NR-U) to operate in the band alongside Wi-Fi?
- How can it be ensured that the required safeguards are in place to protect incumbent (e.g. satellite and fixed links/backhaul) users in the band, and also users in adjacent bands (for example intelligent transport systems in the 5.9GHz band)?

Moderator: **Amit Nagpal**, Partner, Aetha Consulting

Ira Keltz, Deputy Chief, Office of Engineering and Technology, FCC

Omar AlSalik, Director of Spectrum Data Analysis, CITC

Alan Norman, Public Policy Director, Meta

Andy Palms, Executive Director - Infrastructure, Information and Technology Services, University of Michigan

16:40 – 17:40 **Session 3iv: Do we have the right balance across mid-band frequencies?**

The U.S. mid-band spectrum landscape has undergone dramatic change over the last few years as the FCC and NTIA have made significant moves to free up spectrum for commercial use. The spectrum in most key mid-band frequencies has now been released, with a mixture of bands being allocated using a variety of different licencing models and systems. This session will explore the broad ecosystem that has emerged across these key frequencies. Is the balance right between spectrum that is available on a licenced, unlicensed and shared basis; and that is available to the different users and technologies in the bands?

- To what extent do the users across mid-bands (IMT, satellite, WiFi etc.) now have sufficient spectrum to meet current needs and those that may emerge in the future?
- In instances where spectrum is allocated on an unlicensed 'opportunistic' basis, what statistics and indicators are available to gauge the extent to which this is being used? How can it be ensured that its overall value and efficiency is being maximised?

- To what extent should we still be considering bands as being allocated specifically on a licenced, unlicenced or shared basis, or are we seeing a blurring of the boundaries between these methods?
- Is the balance in mid-band frequencies right with regard to spectrum that is available on a licenced, unlicenced and shared basis; and the overall availability of mid-band spectrum to mobile, satellite, Wi-Fi and other key users?
- Is a structure now in place to ensure that the available spectrum in mid-band frequencies is being used to its full potential?

Moderator: **Michael O'Rielly**, President, MPORielly Consulting Inc.

Veena Rawat, Senior Spectrum Advisor, GSMA

Elizabeth Andrion, Senior Vice President, Regulatory Affairs, Charter

Donna Bethea-Murphy, Global Spectrum & Regulatory Policy, GSOA

Jennifer McCarthy, VP of Legal Advocacy, Federated Wireless

17:40 – 19:00 **Networking Cocktail Reception** kindly hosted by SIA

DAY 2

09:10 – 10:00 Session 4: Fireside Chat - Are we back on track with 5G rollout in the US?

Initial rollout of 5G in the US was arguably at a slightly slower pace than had been hoped. However, a huge amount of work has been done in recent years on freeing up vital mid-band spectrum, and good progress is now being made on network deployment and ensuring that the US remains at the forefront of 5G implementation on a global level. This session will provide the opportunity to take stock and look at where we are in our 5G journey, at the progress that has been made to date and at the challenges that still remain. What should the path ahead look like and what obstacles need to be overcome in order to ensure that the full benefits of 5G can be felt across all areas of society as soon as possible?

- What initial targets were set for 5G rollout, and to what extent are these being met?
- What obstacles remain to be overcome when it comes to ensuring 5G spectrum is available (e.g. infrastructure bottleneck, lower than expected demand, complications relating to incumbent users in bands etc.)?
- Whilst on paper there is now a huge amount of mid-band 5G spectrum available – 2.5GHz, 3.5GHz, 3.45GHz, 3.7GHz; as we learnt yesterday, there are a number of mitigating factors or complications that mean accessing spectrum across these bands is not as simple as it can be. How much of this spectrum that has been allocated to 5G is actually available? And how much of this is currently being used?
- What additional bands are being considered in the spectrum pipeline as additional 5G bands?
- What technological progress has been made in areas such as slicing and multi-access edge computing, and what will these mean for the continued roll-out of 5G and new use cases that may emerge?
- What progress has been made with regards to the deployment of 5G standalone?
- What timeframe can be expected for the full benefits of 5G to be felt for use cases requiring mMTC or URLLC services?

Moderator: **Paul Kirby**, Senior Editor, Wolters Kluwer's TR Daily

Steve Sharkey, Vice President, Government Affairs, Engineering and Technology Policy, T-Mobile

Matthew Hussey, Director, Government Affairs & Public Policy, Ericsson

Martha Suarez, President, Dynamic Spectrum Alliance

10:00 – 10:30 Session 5: Fireside Chat - Avoiding harmful interference: Are current interference standards and protection sufficient in the 5G era?

With 5G rollout continuing and the increased focus on spectrum sharing and unlicensed models meaning that bands are increasingly being occupied by more than one technology type, the need for a robust and reliable interference avoidance framework is greater today than ever before. This in-depth fireside chat will explore the framework and processes that are in place to govern interference avoidance and management, and the extent to which they are still appropriate in the fast-evolving ecosystem that is seen today.

- What should be considered as the definition of 'harmful interference'?
- What is the current process in place to address any potential interference issues, and how can agencies and government bodies work together to ensure that there is confidence in the way this is being done?
- What should interference standards and protection look like? Are current interference limits and 'harm claim' thresholds at the right level to ensure the protection of users whilst also enabling the most efficient use of the available spectrum?

- Are there specific interference challenges raised by 5G and other future network technologies? What work is being done in specific areas such as measuring 5G filter strength?
- How can it be ensured that the protection framework that is in place is future-proof, and suitable for the technologies of tomorrow as well as today?
- How do approaches to protect against interference that are seen in the US compare with those elsewhere around the world?

Barlow Keener, Senior Division Counsel, Womble Bond Dickinson LLC

in conversation with...

Charles Cooper, Associate Administrator - Office of Spectrum Management, NTIA

10:30 – 10:50 **Break**

Session 6: Is the current regulatory framework appropriate for the rapidly changing space industry?

10:50 – 11:05 **Presentation: Setting the scene - meeting the connectivity needs of an evolving satellite sector**

Ethan Lucarelli, Legal Advisor, Wireless & International, to Chairwoman Rosenworcel, FCC

11:05 – 12:05 **Panel Discussion: Is the current regulatory framework appropriate for the rapidly changing space industry?**

Satellite services over the past few years have evolved beyond recognition. A huge number of innovative new technologies and business models are emerging. This rapid evolution is bringing with it a swathe of exciting new opportunities, but also a number of regulatory challenges. This session will look at the current regulatory regime that governs access to spectrum for GSOs and NGSOs, and at the work that is being done to ensure that it is still appropriate given the way that technologies and services are evolving. It will explore the measures that are in place to ensure the protection of spectrum rights, and the licencing and sharing rules that govern access to spectrum for satellite services. With the FCC recently launched a notice of proposed rulemaking (NPRM) focused around this issue of licencing, it will explore the measures that are included here and the impact that they may have. What is the best way forward to deliver a regulatory framework for satellite services that both protects the rights of users and encourages innovation and competition?

- What rules and regulations currently govern access to spectrum for GSO and NGSO operators?
- Is the framework sufficient given the huge surge that has been seen in NGSO satellites in recent years, and the rapid evolution of the sector more broadly? What steps are being taken by the FCC to ensure that a regulatory framework is in place to meet both current and future needs of a fast evolving sector?
- What measures are in place to protect the rights of existing spectrum users?
- To what extent do these find the right balance in both protecting users and encouraging innovation and competition, allowing next generation space-based connectivity to flourish?
- What approaches are proposed in the FCC NPRM to streamline licence processing times and revise rules governing satellite spectrum sharing?
- What would these changes mean for the spectrum rights and protection of services for GSO and NGSO operators?
- How should spectrum be shared amongst operators who participate in different processing rounds? Should operators that are awarded spectrum in earlier rounds be offered any level of protection and, if so, should this first-mover protection be permanent or phased out after a period of time?

- How would the changes that are proposed fit with international regulation, and in particular the ITU's 'first-come-first-served' approach?

Moderator: **Stephan Sloan**, Director, Media Services Group

Jennifer A. Manner, Senior Vice President, Regulatory Affairs, EchoStar Corporation

Margo Deckard, Co-Founder and COO, Lynk

Shari Scott, Senior Director, Space Services and International, ISED Canada

Kalpak Gude, Head of Domestic Regulatory Affairs, Project Kuiper, Amazon

12:05 – 13:00 **Lunch**

13:00 – 13:15 **Thinking Point: Exploring the Market Potential for FWA**

Johanne Lemay, President and Co-Founder, LYA

13:15 – 14:15 **Session 7: Cracking the rural broadband challenge – delivering connectivity and affordability**

Whilst big steps have been taken in recent years to narrow the digital gap between urban and rural areas in North America, recent studies indicate that 28% of Americans and 54% of Canadians in rural areas still don't have access to internet. And it is not just connectivity that is the challenge. For low-income households, the affordability of broadband is also a huge issue. With billions of dollars being made available in both Canada and the US to tackle this problem, this session will look at the work that is being done to understand the connectivity needs of citizens in businesses in unserved and underserved areas, and the programmes that are being rolled out at both at a federal and state level in order to deliver this connectivity at affordable prices.

- What funds and programmes are being made available at both a federal and state level to tackle the challenge of delivering rural connectivity in both the US and Canada?
- What coordination is being seen across different levels of government and with industry players?
- How accurate is current mapping of unserved and underserved areas and the overall understanding of connectivity black-spots in rural areas? What new indicators and data are being utilised by the FCC for the new mapping that is currently under development, and to what extent can this help to improve this understanding and ensure funding is directed towards those communities most in need?
- What are the plans for the \$11 billion dollars left in the pot for RDOF stage 2? Will this still likely go ahead as envisaged or are alternative options being considered?
- What work is being done to tackle the affordability issues? To what extent could the Affordable Connectivity Programme and the plan for subsidized internet plans for low-income households help to provide a solution?
- What mix of different technologies will be required in order to help to meet the ultimate goal of universal broadband availability and affordability across the region?
- How can regulators look to deliver a flexible approach to licencing spectrum that accommodates innovative new technologies as part of the solution?
- What should be considered as the definition of 'broadband', and what should minimum acceptable levels be in terms of key aspects such as speed and latency?
- How can policymakers work alongside rural business communities in sectors such as agriculture, mining, forestry and more to understand their connectivity needs and ensure that these are met?

Moderator: **Hector Lopez**, Associate Director, NERA Economic Consulting

Giulia McHenry, Chief, Office of Economics and Analytics, FCC

Campbell Massie, Director of Regulatory Policy, North America, GSMA
Fernando Carrillo, Global Spectrum & Regulatory Policy, GSOA
Allan Ingraham, Managing Director, Secretariat International

14:15 – 15:20 **Session 8: The evolution of Spectrum Sharing - Future models to increase the efficiency of spectrum usage across federal and commercial bands**

We are reaching the stage that across the vast majority of the most sought after spectrum bands, there is now no free 'greenfield' spectrum remaining unassigned. This means that in order to meet ever increasing demands for additional bandwidth, there is a need to explore new measures to increase the efficiency of spectrum use, and new ways of thinking about repurposing and sharing spectrum. This session will look in depth at some of the innovative new sharing models that have been used across different bands both in Americas and elsewhere, and at how successful they have been. It will look specifically at the 3.1-3.45GHz band and the discussions around different sharing models that are taking place there, but also more broadly at the relative success of different sharing approaches that have been introduced across different bands and scenarios.

- What different models of sharing have been seen both in the US and elsewhere and how successful have these been?
- How efficiently are different federal and commercial spectrum bands being used currently and are there ways that this could be increased?
- To what extent should the authority to make decisions on possible sharing within bands, currently used by federal users, sit with the agency that is using the spectrum, or should final decisions be taken at an NTIA/FCC level?
- Economically, what is the best way to handle the ever-increasing need for additional spectrum across bands which are in the main already fully assigned?
- Should we be looking to introduce 'sharing by default' or 'share it or lose it' type policies?
- What methods of sharing exist and which are the most appropriate across different bands and use cases?
- What specific sharing models are currently being considered to help free-up spectrum in the 3.1-3.45GHz and the 3.45-3.55GHz frequencies, and what work is being done to analyse the feasibility of these? How can it be ensured that a sharing solution is found which overcomes the complexities that are in place relating to the release of this key spectrum?

Moderator: **Monisha Ghosh**, Professor, University of Notre Dame

Omneya Issa, Director of Dynamic Spectrum Access, ISED Canada
Steve Averett, Deputy Director for Infrastructure and Data, DoD
Mark Gibson, Director, Business Development, Commscope
Jeff Stewart, Assistant Vice President, Global Public Policy, AT&T
John Hunter, Director of Spectrum Policy, T-Mobile

15:20 – 15:40 **Break**

15:40 – 16:45 **Session 9: Future spectrum pipeline – finding the required spectrum for the evolution of 5G and beyond**

Whilst 5G rollout continues, attention is also very much turning to what comes next, and to the evolution of 5G services and the path towards 6G. Given how crowded spectrum frequencies today have already become, delivering the bandwidth to meet the needs of the future gigabit society is going to require innovative thinking from policymakers and connectivity providers alike. This session will look at how overall spectrum requirements are going to evolve as we move beyond 5G, and at the bands that are being considered as part

of the spectrum pipeline to deliver the required additional connectivity in low, medium and high frequency bands.

- What are the next bands in the spectrum pipeline that could be available to help meet the needs for 5G evolution and beyond?
- Looking a step further, what are going to be the key bands for 6G rollout? What mix of terahertz, mid-band and other frequencies are going to be used?
- At MWC-22, when discussing spectrum for 6G, Chairwoman Rosenworcel stated that "...we need to start planning now to identify spectrum in the 7-15 GHz range that can support faster speeds and wider coverage". What is the current situation across these bands, and what bands could offer the greatest potential to help deliver the required connectivity as we move beyond 5G?
- What would an extension of the mid-band in this way mean for current incumbent users in these bands?
- What is the latest with the Spectrum Horizons programme? Given the limited success of mmWave and costs of deployment, what could this mean for the development of Terahertz frequencies as commercial and viable options for future connectivity systems?
- How can it be ensured that sustainability is kept at the centre of work being done to develop 6G, and what impact can 6G have on helping the world meet the UN 2030 Sustainable Development Goals?
- How can it be ensured that 6G is truly a technology for all and how can the target of fully global coverage be delivered? What needs to be done at the early stage of development to ensure that this is once again central to thinking, and what role can satellite, unlicensed and other key stakeholders play in delivering this?

Moderator: **Andy Hudson**, CEO, Spectrivity

Carl Povelites, Assistant Vice President, Global Public Policy, AT&T

Kim Baum, VP Spectrum Engineering, OneWeb

V. Noah Campbell, Co-Founder & CEO, RS Access

Aspasia Paroutsas, Vice President, Federal Regulatory Affairs, Qualcomm