

12th Americas Spectrum Management Conference

October 10 & 11, 2023

The National Press Club, Washington D.C.

DAY 1

09:00 – 09:10 **Welcome and Introductions**

Session 1: Roadmaps to meet current and future connectivity needs across US and Canada - The National Spectrum Strategy and The Spectrum Outlook

Work in the US is underway on the preparation of a National Spectrum Strategy – a roadmap to set out the best way forward to manage the nation’s spectrum resources and provide a long-term plan to meet both commercial and federal spectrum needs. A request for comment (RFC) issued by NTIA relating to this received a total of 131 responses, indicating the level of interest in this key piece of legislation. Similarly in Canada, work by ISED is well underway on the production of a Spectrum Outlook, which will outline a plan for how spectrum policy can best support wireless telecommunications services in the country. This morning’s sessions will provide an update on the current state of play with these two key policy roadmaps and look at the key objectives that are being set, along with the candidate bands, technology innovations and regulatory models that are options to meet these. What are the hopes from stakeholders and what need to be the next steps to ensure that the spectrum needs across North America can be met now and into the future?

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

09:10 – 09:30 **The National Spectrum Strategy – State of Play and Next Steps**

Scott Blake Harris, Senior Spectrum Advisor, Office of the Assistant Secretary, NTIA

09:30 – 09:45 **Canada’s Spectrum Outlook – State of Play and Next Steps**

Chantal Davis, Senior Director, Regulatory Policy, Innovation, Science and Economic Development Canada (ISED)

09:45 – 10:00 **Q&A and Discussion**

10:00 – 10:25 **Break**

Session 2: A new spectrum pipeline – what are the candidate bands that can help to meet current and future spectrum needs?

The National Spectrum Strategy has set the ambitious target of identifying at least 1500MHz of spectrum to study for potential repurposing. A number of bands have been discussed as possible options to be considered as part of this ‘spectrum pipeline’ to meet future demands for spectrum capacity – 3GHz, 4GHz, 7/8GHz and most recently the 12.7- 13.25 GHz band, which the FCC announced in a recent NPRM would be authorised for mobile broadband and the expanded uses. This session will look at the different candidate bands that are being considered as part of the new spectrum pipeline, and at which can offer the

best option to meet the increasing demands for bandwidth that are being seen and to hit the targets that have been set as part of the spectrum strategy.

- How much spectrum is going to be needed going forward for the expansion and delivery of 5G, 6G and future connectivity systems?
- Where does the balance lie between meeting the increasing requirements for 5G with those of other key users and sectors?
- Which bands are being considered as part of the future spectrum pipeline, and which of these offer the most potential to identify the necessary bandwidth?
- What challenges would need to be overcome in order to make bandwidth in these bands available, and what would be the likely timeline ahead?
- Should exclusive licences or re-use and sharing of existing bands be the primary focus for identifying additional bandwidth?
- What bands are being considered to meet future needs in Canada, elsewhere in the region and around the world? To what extent is there synergy and where are there differences?

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

10:25 – 11:35 **Panel Discussion**

Tom Stroup, President, SIA

Michael Calabrese, Board Member, Dynamic Spectrum Alliance

Umair Javed, Senior Vice President, Spectrum, CTIA

Becky Tangren, Vice President & Associate General Counsel, NCTA

Amit Mukhopadhyay, Senior Spectrum Standardization Leader, Nokia Bell Labs

Session 3: Spectrum sharing – Maximising the potential and finding the right balance

In order to expand capacity and increase the efficiency and usability of the spectrum that is available, both the National Spectrum Strategy and the Spectrum Outlook are expected to have a considerable focus on spectrum sharing. There are already many examples across the region of different models being employed to enable both sharing between federal and commercial users and also between different technologies in existing commercial bands. This session will look at some of these different approaches and explore how successful they have been. It will look at the likely next 'wave' of sharing that will be seen both in terms of bands and approaches, and at the role that spectrum sharing can play in achieving the expected goals of both the National Spectrum Strategy and the Spectrum Outlook. With the region already leading the way globally in terms of the amount of spectrum that is allocated on a shared basis, it will explore whether the right balance is being achieved in terms of allocating spectrum on a shared, unlicensed and licenced basis, and how this can be maintained to maximise the value of spectrum across key bands.

- How should the Strategy assess efficient spectrum use and the potential for sharing across different bands?
- What different sharing models and technologies are being seen in the US and elsewhere around the world? To what extent can any of these provide blueprints for use in additional bands?

- What lessons have been learnt from the different models that have seen sharing between federal and non-federal users to date (for example 3.45GHz, CBRS)?
- What security issues need to be considered when sharing spectrum, particularly between federal and non-federal users?
- What will be the next 'wave' of sharing? What innovative new approaches and technologies are being explored, and which bands offer the greatest potential for the introduction of shared models?
- What impact can emerging technologies such as AI and machine learning have on increasing the efficiency of sharing models through improved coordination or interference protection?
- Where are we currently at in terms of the amount of spectrum allocated on a shared, unlicensed and licensed basis, and what trends have been seen in recent years?
- Has the correct balance been achieved, and what needs to be done going forward to ensure that the benefits of the numerous different spectrum access models can be felt?

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

11:35 – 12:55 Panel Discussion

Derek Khlopin, Deputy Associate Administrator, Office of Spectrum Management, NTIA

Art DeLeon, Director, Strategic Spectrum Policy, Department of the Navy

Justin Markle, Head of Wireless Partnerships & Development, Comcast

Jeff Stewart, Assistant Vice President, Global Public Policy, AT&T

Mark Gibson, President and Chair of the Forum, WinnForum

Tim Harrington, Chairman, UWBA

12:55 – 13:55 Lunch

Lunch Salon hosted by LYA

Session 4: CBRS 3 years in – what has worked, what has not, and what comes next?

3 years after the launch of the innovative 3-tiered sharing model in the CBRS band, there are 2 distinct sides emerging when it comes to assessing the extent to which the model has been a success or not. Proponents of the model claim that it has allowed for faster, more widespread deployment, by a more diverse range of users, than any other spectrum band in history; whilst critics claim that the band is actually seeing low levels of adoption and limited use cases, citing factors such as low power levels and small license sizes as reasons for this. This session will look at the discussion points from both sides, look at what elements are working well and what possibly not so well, and look at the next steps and at what the future holds for both the band and the CBRS sharing model more broadly.

- What level of uptake and adoption have been seen in the CBRS marketplace, and how does this compare to the targets that were originally set?
- What lessons have been learnt in the 3 years since its launch in areas such as sensing and power limits?
- What elements are working well and which ones possibly not so well?

- What progress has been made with regard to the development of Incumbent Informing Capability (IIC) in the band, and what impact could this have on the uptake that is seen?
- What has been learnt about the current power limits that are in place? Is there an argument that the introduction of higher limits could be considered and, if so, then under what conditions? Could this approach be exported into other bands?
- What is the future for the CBRS sharing structure? How may it be adapted and optimised in the CBRS band itself going forward and should it be considered as a possible model to use for future bands in which relocation is not possible?

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

13:55 – 15:05 **Panel Discussion**

Jessica Greffinius, Assistant Chief, Wireless Telecommunications Bureau, FCC

Scott Patrick, Executive Director, Office of Spectrum Management, NTIA

Andy Clegg, Spectrum engineering lead, Google; & Representative, OnGo Alliance

Patrick Welsh, Vice President, Federal Regulatory & Legal Affairs Verizon

Manish Jindal, Group Vice President, Wireless, Charter

Session 5: Unleashing the potential of the 6GHz band – has the right balance been struck with the power limits and sharing framework that is in place?

The decision taken by the FCC to make 1200 megahertz of spectrum in the 6 GHz band available for unlicensed use came with some pretty significant power restrictions and rules in order to protect incumbent users in the band. Part of this meant that any device operating outside must have an Automated Frequency Coordination (AFC) system in place. More than 3 years on from the initial decision to open the band, testing on AFCs has now finally begun, and it is expected that they could be certified by the time of this event and standard power devices will be up and running. This session will look at the results of the testing that has been done, and the lessons that have been learnt from this. With the ecosystem in the band now starting to really emerge and services starting to roll out, it will look at the sharing framework and power limits that are in place, and at the best way forward to ensure the most efficient use of this key spectrum for all users involved.

- What ecosystem has started to grow in the 6GHz frequency since the FCC decision to make it available on an unlicensed basis, and how is this expected to develop now that the certification of AFC systems and services has begun?
- What results have been seen from the AFC tests and demonstrations that have taken place to date, and what lessons can be taken from these?
- What new use cases and service offerings may start to become enabled now that AFCs are starting to be used?
- Is it sufficient for AFCs to be in place for standard power devices only, or should they also be considered to protect against interference from low powered devices?
- Do the power limit rules that are in place strike the right balance between protecting incumbent users in the band from interference and allowing the best possible use of the band by WiFi devices?
- To what extent could the system that is being seen in the 6GHz band be a template that could be replicated in other bands and in other countries around the world?

Moderator: **Stephan Sloan**, Director, Like Spectrum

15:05 – 15:55 **Fireside Chat**

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

David Willis, Group Director, Spectrum, Ofcom

Stuart Strickland, Vice President & Wireless CTO, HPE

15:55 – 16:20 **Break**

Session 6: Delivering Rural Connectivity - Policy and Technological Solutions to Connect Unserved and Underserved Areas

A huge amount of money has been invested over recent years in projects and programmes designed to help close the digital divide and deliver connectivity to unserved and underserved areas. The recent Rural Digital Opportunity Fund (RDOF) allocated a subsidy of upto \$20.4 billion to be spent over ten years, and now an additional \$42 billion is set to be distributed as part of the Broadband Equity, Access, and Deployment (BEAD) Program. Against this backdrop, this session will hear from key technology providers on the impact that this funding has had and will have in the future on supporting them connect unserved and underserved areas. It will explore the different connectivity solutions that are already part of the technology mix to help tackle the solution, and at how technological developments over the next few years could also play a part in achieving the ultimate goal of universal connectivity.

- To date, how successful have the previous funds and programs been in tackling the challenge of delivering rural connectivity?
- 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? What role can satellite play moving forwards?
- What recent technological advancements have been seen that could help to play a part in delivering a solution?
- What is the latest situation with RDOF in the US? What are the reasons that some connectivity providers have defaulted on winning bids, and how is this being dealt with? How much of the initial funding that was allocated remains available, and what are the plans for this going forward?
- What is the status of the 5G mobility fund and what timeline is it expected lies ahead?
- How is the BEAD program being implemented and how is the available funding being allocated?
- With an increasing reliance on the FCC's National Broadband Map to allocate funding, how successful has the work to increase the accuracy of the mapping of unserved and underserved areas been?
- How has this helped to ensure funding is directed towards those communities most in need, and what challenges still remain in this area?

- What should be the process going forward to ensure the most accurate mapping possible? Is the six-monthly update of maps sufficient to ensure that data is up to date and accurate?

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

16:20 – 16:30 **Setting the Scene - Introduction from the moderator**
Hector Lopez, Director, NERA Economic Consulting

16:30 – 16:40 **The role of IMT in delivering rural connectivity**
Campbell Massie, Advocacy Director, North America, GSMA

16:40 – 16:50 **The role of Satellite and NTN in delivering rural connectivity**
Gonzalo de Dios, Head of Global Licensing, Project Kuiper at Amazon

16:50 – 17:00 **The role of the unlicensed community in delivering rural connectivity**
Mark Gibson, President and Chair of the Forum, WinnForum

17:00 – 17:30 **Panel Discussion**
Campbell Massie, Advocacy Director, North America, GSMA
Gonzalo de Dios, Head of Global Licensing, Project Kuiper at Amazon
Mark Gibson, President and Chair of the Forum, WinnForum

17:30 – 19:15 **Cocktail Reception** (*hosted by SIA*)

DAY 2

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

09:00 – 09:20 Keynote Presentation

Steve Lang, Deputy Assistant Secretary of State for International Information and Communications Policy, US Department of State; Head of US Delegation for WRC-23

Session 7: Final preparation and positions ahead of WRC-23 – what should be the key goals for the region and how can it be ensured that these are achieved?

This conference takes place just over a month before the next World Radiocommunication Conference - WRC-23. With preparations now almost complete, this session will look at the positions that are being seen in the region and elsewhere on the key agenda items and at what this may mean for the direction of discussions in Dubai. It will look at the overarching objectives of the US, Canadian and broader CITEL regional delegations, and at what now needs to be done to ensure the best possible outcomes for stakeholders across the region.

- What common positions have now been agreed at a CITEL level on the key agenda items for WRC-23?
- In which areas is there general alignment between countries across the region and in which areas are more split views being seen?
- What positions are being seen elsewhere around the world and which are likely to be the most contentious and challenging agenda items?
- What are the hopes and objectives of the US, Canadian and regional delegations for the conference?
- What needs to be done to ensure the best possible outcome for the region?
- With WRC-23 also set to see the setting of future agenda items to be discussed at WRC-27, what should be the priorities here, and what will likely be the next 'wave' of bands and issues to be focussed on?

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

09:20 – 09:35 Introductory Presentation

Oscar Leon, Executive Secretary, CITEL

09:35 – 10:45 Panel Discussion

Nese Guendelsberger, Deputy Chief, Office of International Affairs, FCC

Veena Rawat, Senior Spectrum Advisor, GSMA

Alan Norman, Public Policy Director, Meta

Prakash Moorut, Global Head, Spectrum and Regulatory Affairs, Shure

Hazem Moakkit, Global Spectrum & Regulatory Policy, GSOA

10:45 – 11:10 Break

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

11:10 – 11:30 Keynote Presentation

Austin Bonner, Deputy U.S. Chief Technology Officer for Policy, White House Office of Science and Technology Policy

11:30 – 11:50 Shaping the Evolution of 5G and the Development of 6G – spectrum policy to meet economic and security goals

Matthew Pearl, Director of Emerging Technology, White House National Security Council

Session 8: Where are we at now? What progress and trends are being seen with 5G rollout and use cases?

By the end of this year, it is expected that more than 350 million people across North America will be connected to 5G, and it is expected that by 2025, 5G will account for more mobile connections than 4G. On a global level, a recent study by GSMA suggested that, at its current momentum, 5G is the fastest generational roll-out compared to its predecessors 3G and 4G. At the same time however, many would say that the true benefits of 5G have yet to be fully felt, and that possibly to date, its impact has not been as great as was initially hoped. This session will explore the progress that has been made in the 5G journey and the work that still needs to be done. With 5G standalone rollout now starting to pick up pace, it will look at the road ahead, and at the best way forward to ensure that the full benefits of 5G are felt by all businesses and communities across the region as soon as is possible.

- Where are we with 5G and are we on track to achieve what we set out to achieve?
- What key use cases are emerging and what are being seen as the leading 5G drivers?
- How is 5G currently delivered across the US and Canada, and using what spectrum?
- How does this compare to approaches that are being seen elsewhere around the world?
- What levels of 5G coverage are currently seen across North America and are we on track in this area?
- What different approaches and strategies are being taken by the main carriers when it comes to 5G rollout and how successful have these been?
- How much more spectrum is going to be needed to meet growing needs for the evolution of 5G and 5G standalone, and to ensure global leadership in this area?
- How is the 5G ecosystem evolving and what different connectivity providers are playing a part in delivering services?
- What uptake is being seen when it comes to enterprises deploying their own private 5G networks? How do the approaches and results that are being seen in this area in the US compare to those elsewhere in the world?
- What challenges remain in this area, and how are providers working alongside enterprises and other stakeholders to overcome these and deliver mass market adoption?
- What progress is being seen regarding the rollout of 5G standalone networks and what obstacles to this still remain to be overcome?

Moderator: **Armand Musey**, President and Founder, Summit Ridge Group

11.50 – 12.40 **Fireside Chat**

John Hunter, Director of Spectrum Policy, T-Mobile

Rachael Bender, Vice President & Associate General Counsel, Federal Regulatory & Legal Affairs, Verizon

Jennifer Manner, Global Spectrum & Regulatory Policy, GSOA

Session 9: The long-term future of FWA in North America - Continual growth or has a peak been reached?

5G Fixed Wireless Access (FWA) has seen significant growth across the US and North America in recent years, dominating the broadband market and contributing to last year seeing a fall in subscriber growth for the US cable industry for the first time ever. Despite this undoubted success, some are saying that the pace of growth in FWA is starting to slow, and that as more and more people are signing up to FWA services, networks risk becoming overloaded and there will not be enough spectrum available to deliver the capacity that is required to meet this demand. This is disputed by MNOs, and this session will look at the current trends that are being seen in FWA, the spectrum that is being used to power its growth, and at what its future may be in the long term.

- What recent growth and trends have been seen with FWA services across US and North America? What is powering the success that is currently being seen here compared to other regions around the world?
- What spectrum bands are being used to power the rollout of networks?
- How can the network capacity be found to ensure that FWA networks do not become too overloaded as more and more customers come on board?
- What spectrum resources are available to help with this and what role can mmWave spectrum play as part of the solution?
- What is the long-term future of FWA? Can the growth that is currently being seen be sustained, or should it be considered a transition or temporary solution that has now peaked?

Moderator: **Mike O’Rielly**, President, MPORielly Consulting

12:40 – 13:30 **Fireside Chat**

Natalie Modesto, Customer Solutions Manager, Ericsson

Chris Wiczorek, Senior Director, Spectrum Policy, T-Mobile

Darrin Mylet, Wialan Technologies - Telosa Network

13:30 – 14:20 **Lunch**

Session 10: Where are we going next? Identifying the required spectrum to power the 6G evolution

Discussions are well underway across the US and the wider Americas on identifying spectrum to power the rollout of 6G. Spectrum in the 7-16GHz range has already been identified by the FCC as "...prime mid-band airwaves for the 6G era" is expected to form the backbone of initial 6G connectivity. However, a number of challenges exist with making this spectrum available, not least the extensive use that is currently seen in the band by incumbent users, including satellite services. This session will look at the work that has already started in identifying key bands across these frequencies and beyond, and at the work that needs to be done to ensure the delivery of a strategic spectrum roadmap to ensure global leadership in the 6G era.

- How much spectrum is it expected will be needed to meet the needs of 6G in terms of both capacity and coverage?
- What lessons have been learnt from 5G that can be taken into account when identifying the required spectrum for 6G?
- What initial work is being done in the US and across the broader region to identify bands for 6G and to develop a strategic spectrum roadmap to ensure global leadership in this area?
- What early approaches are being seen elsewhere around the world, and to what extent is it important that there is coordination and alignment?
- How should spectrum for 6G fit into the broader discussion around the future spectrum pipeline? Should bands be considered separately as being allocated for 5G and 6G, or should it all be taken collectively as going into the pot to provide bandwidth for future connectivity needs?
- With spectrum across the 7- 16GHz frequencies likely to form the backbone of early 6G rollout, what candidate bands can offer the best potential to find the contiguous blocks of spectrum that will be required for 6G?
- What potential is offered by the 12.7-13.25GHz band, which has been identified by the FCC to be studied for new commercial use?
- What role are NTN's set to play in delivering 6G connectivity, and what work is being done by the FCC to develop a unified satellite/terrestrial standards framework?

Moderator: **Barlow Keener**, Senior Counsel, Womble Bond Dickinson

14:20 – 15:30 **Panel Discussion**

Arpan Sura, Senior Counsel, Wireless Telecommunications Bureau, FCC

Aspa Paroutsas, VP, Federal Regulatory Affairs, Qualcomm

Jose Ayala, Chairman, Spectrum Group for CITELECOM Region, GSA

Hazem Moakkit, Vice President, Spectrum Strategy, Intelsat

Carl Povelites, AVP Global Public Policy, AT&T

Session 11: Powering the new space race - ensuring a spectrum strategy to deliver on the potential of satellite and non-terrestrial networks

The space economy is booming with the sector seeing rapid evolution and a whole range of exciting and innovative new technologies and business models emerging. This is bringing with it a swathe of exciting new opportunities, but also a number of regulatory challenges, particularly in the area of connectivity. Against this backdrop, the FCC is looking to lead the way globally by taking steps to adapt the regulatory framework that governs access to

spectrum for satellite operators. The last 12 months have seen the launch of a new Space Bureau at the agency, and also the release of 2 NPRMs which focus on i. improving and streamlining the rules and processes relating to satellite applications; and ii. establishing a regulatory framework to govern how satellite operators can partner with MNOs to use terrestrial spectrum in order to deliver direct to device connectivity. This session will explore the evolution of the space sector and the innovation that is currently being seen. It will look at the current regulatory framework that governs access to spectrum for GSOs and NGSOs, and at the work that is already being done to ensure that this keeps pace. Looking at the possibilities offered by direct satellite to device connectivity and some of the other exciting innovations that are emerging in the sector, it will discuss the best way forward to ensure the satellite sector can continue to thrive as we move towards 6G.

- What exciting new innovations are seen within the satellite sector, and how can it be ensured that a regulatory framework is provided that encourages new entrants and competition whilst also protecting the rights of incumbent users?
- What progress is being made on global standards, and what steps are being taken to update the current rules and processes that govern access to spectrum for GSOs and NGSOs?
- To what extent is the US leading the way globally when it comes to the delivery of a regulatory regime fit for the rapidly evolving space sector that is seen today? What work is happening in regions outside the US and at a global level through ITU, and what expectations are there in this area for WRC-23?
- What are the key challenges that the FCC are looking to address with the NPRMs that have been released, and what is being proposed to tackle these?
- What potential is offered by direct to device satellite connectivity services and what services and capabilities is it expected will ultimately be possible?
- What are the pros and cons of using traditional mobile and satellite spectrum to power these services? What are the technical and regulatory challenges associated with each approach?
- Will one connectivity model ultimately prevail, or will there be space in the long term for services using each model respectively or even using a hybrid of the two?
- Should services be limited to only using spectrum bands where a single mobile operator has contiguous rights on as nationwide basis, and if not, how can any possible interference be avoided? How can interference issues at borders be managed?
- What role can satellite systems play in both 5G-advanced and 6G wireless ecosystems going forward? Can 6G finally herald the emergence of a fully integrated network of networks?

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

15:30 – 15:40 **Introductory Presentation**

Julie Kearney, Chief, Space Bureau, FCC

15:40 – 17:00 **Panel Discussion**

Julie Kearney, Chief, Space Bureau, FCC

Alexander Kuehn, Head of International Spectrum Affairs, Spectrum Planning and Innovative Spectrum Usage, BNetzA Germany

Margo Deckard, Co-Founder and COO, Lynk

Patrick Wilson, Vice President, Government Relations, Mediatek

Julie Zoller, Head of Global Regulatory Affairs, Project Kuiper at Amazon

Ivan Suarez, Director, Space and Spectrum Policy, Access Partnership