

10th Americas Spectrum Management Conference

October 12 & 13

Virtual Event

DAY 1

09:00 – 09:20 **Keynote Presentation**

Jessica Rosenworcel, Acting Chairwoman, FCC

Session 1: New administration, new priorities? Where are we currently and what lies ahead?

The arrival of the Biden administration earlier this year brought with it sweeping changes across all areas of federal Government. This session will look at what it may mean for the FCC, and for spectrum policy more broadly. It will focus on what lies ahead for the FCC under its new leadership, at the areas in which policy and enforcement priorities may shift, and crucially, what this might mean for the future spectrum policy framework in the US and the wider Americas.

- What should be the priorities for the new administration in order to ensure that the power and promise of spectrum is maximized for citizens everywhere?
- What key objectives and programmes remain from on the table from the previous administration? In which areas may there be a change in priorities and where is it like to see a continuation down the same path?
- With the challenge of addressing the country's digital infrastructure challenges and the digital divide a consistent priority for the Biden team, how may the approach in this area change?
- Definition of broadband – how do FCC define it? Will funding be dependent on speed, and if so, what should be the targets?
- What should be the balance with regards to making spectrum available on a licenced and unlicensed basis; and of spectrum sharing vs exclusive licences?
- What key bands are likely to be considered next in the spectrum 'pipeline'?
- With the ever increasing demand on spectrum that is being seen, is there a need to revisit relationships between federal agencies and explore closer co-ordination when it comes to allocating spectrum and resolving disputes?

Moderator: **Scott Walsten**, President & Senior Fellow, Technology Policy Institute

09:20 – 10:35 **Panel Discussion**

Umair Javed Acting Chief Counsel, FCC

Derek Khlopin, Senior Advisor, Office of the Assistant Secretary NTIA

Tom Power, SVP & General Counsel, CTIA

Tom Stroup, President, SIA

Alex Roytblat, Vice President, Worldwide Regulatory Affairs, WiFi Alliance

10:35 – 10:55 **Break**

Session 2: Maximising the potential of spectrum sharing – innovative new technology and policy thinking

Spectrum sharing isn't new, but with modern technologies continuing to evolve and the 'squeeze' on spectrum showing no sign of letting up, today there is a greater emphasis than ever before on using sharing to maximise efficiency. This is demonstrated in the US by President Biden requesting \$39 million be made available in his fiscal budget for 2022 to "...support the development and deployment of broadband and 5G technologies by identifying innovative approaches to spectrum sharing." This session will look at innovative approaches to spectrum sharing that are already being deployed in the Americas and all around the world, and at the emerging new technological and policy tools that can help further increase the potential of sharing. It will look at the tools and techniques that are available to both regulators and industry to ensure that spectrum is allocated and utilised in the most efficient way possible, and in a way that encourages innovation whilst protecting the rights of all.

- What policy and technological innovations are being seen that can help to increase spectrum efficiency, and what research is being done to identifying new and innovative approaches to spectrum sharing?
- What new methods and techniques of spectrum sharing are emerging both in the US and elsewhere?
- How are sharing techniques evolving and becoming more sophisticated, and how can these developments be best harnessed to increase efficiency and protect the rights of all users?
- What potential does IIC (Incumbent Informing Capability) technology offer in helping to facilitate additional sharing between federal and commercial users in the 3.45GHz band and other key bands?
- What challenges would sharing in this way bring for MNOs, and to what extent is there a way to ensure the require reliable and predictable access to spectrum that they require?
- What other models and coordination plans are being considered to enable sharing in the 3.45GHz band and other key frequencies?
- What is the current situation in the 3.1GHz – 3.45GHz band, and to what extent is there potential for the spectrum here to be made available on a shared basis?
- What future is there for TV whitespace technologies and sharing using dynamic spectrum access more generally?

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

10:55 – 12:00 **Panel Discussion**

Ron Repasi, Chief, Office of Engineering and Technology, FCC

Charles Cooper, Head of Spectrum, NTIA

Tim Harrington, Chairman, UWB Alliance

Martha Suarez, President, Dynamic Spectrum Alliance

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

12:00 – 12:45 **Lunch**

Session 3: Private 5G networks – access mechanisms, spectrum bands and emerging new business models

As they look to meet the many varied connectivity requirements of different vertical industries, regulators are increasingly moving away from the traditional model of solely allocating spectrum to MNOs, and instead looking at the option of providing access directly to these end-users, enabling them to develop their own private, localised networks. In the US, a spectrum sharing framework in the CBRS band has been set up to deliver spectrum for vertical businesses alongside a number of other key users, whilst in other countries, some regulators have set-aside a portion of spectrum in priority 5G bands for enterprises so they can build their own private 5G networks. This session will look at the different approaches that are being considered, and the best way forward to deliver connectivity to enterprises in the most efficient and reliable way possible. With this exploration of models that are different to the traditional method of networks being solely operated by MNOs, it will also look at the impact that this may have on business models and relationships between network operators and vertical users, and at the potential for new partnerships to develop for the benefit of all.

- What access mechanisms and spectrum bands are being used around the world to provide spectrum to meet the varied use cases of vertical users?
- What approaches and incentives can be used to incentives use of spectrum and to make sure that bandwidth is not left lying fallow?
- How can it be ensured that power limits are set at the right level to ensure no interference across the range of different environments that private networks may be set up?
- What is the situation in the US, and to what extent can bands such as the CBRS and UHF band help to meet connectivity needs to deliver private networks?
- How can governments and regulators develop spectrum policies that maximise value of spectrum and deliver connectivity to enterprises in the most efficient and reliable way possible? What can be done to deliver the required flexibility whilst avoiding the possible pit-falls of under-utilisation and fragmentation?
- What examples of network operators working alongside private enterprises and other parties to deliver vertical connectivity are being seen, and what innovative models are emerging?
- To what extent can the emergence of private local networks provide a new business case for MNOs, and how may business models change?

Moderator: **Richard Marsden**, Managing Director, NERA Economic Consulting

12:45 – 13:50 **Panel Discussion**

Ethan Lucrelli, Legal Advisor to the Acting Chairwoman on Wireless & Public Safety, FCC

Branimir Stantchev, Head of Sector, "Spectrum for Wireless Broadband", European Commission

Dave Wright, President, OnGo Alliance

Campbell Massie, Advocacy Manager, North America, GSMA

Brett Kilbourne, Vice President of Policy & General Counsel, Utilities Technology Council

Session 4: Meeting the spectrum needs of the next generation of space-based connectivity

With the emergence of a rapidly increasing number of NGSO and SmallSat networks alongside more traditional GSO networks it is estimated that more satellites will be launched in the next 2-3 years than in the last 50 years combined. Alongside the exciting new opportunities that this will bring, this also brings with it a dramatic increase in satellite demand for spectrum, as well as a number of regulatory challenges, including with regards to licencing rules and frameworks. This session will look at this in more detail. It will explore the innovative new technologies and business models that are being seen within the space sector today, and the challenge and opportunities that this provides. It will look at the extent to which current rules and regulations governing access to spectrum are still sufficient in this rapidly evolving sector, and discuss the best way forward to ensure a future-proof and flexible spectrum licencing system to protect all users and allow the next generation of space based connectivity to flourish.

- What licencing models and rules currently guide access to spectrum for satellite systems?
- With the current framework designed for GSO satellite networks, are they still appropriate for more complex NGSO systems?
- Is a first come, first served (FCFS) licencing procedure still appropriate in this rapidly evolving and fast moving sector?
- What measures have been taken by the FCC to streamline licencing laws for constellations smaller than 10 satellites and what impact will this have?
- Should NGSO satellites be allowed to operate within the same spectrum bands as GEO satellites, and to what extent is there a risk of interference in this scenario?
- What is the current situation regarding access to spectrum for launch vehicles, and is there a need to revisit current frameworks around this in order to provide the flexibility and predictability that is required within this growing sector?
- What innovative new examples are being seen of satellite operators working directly with MNOs to deliver connectivity using LTE frequencies?
- What is the future of this new model of co-operation between satellite and mobile, and how can it be managed? To what extent is there/should there be a regulatory framework for these emerging new uses?

Moderator: **Gerry Oberst**, Senior Counsel, Hogan Lovells

13:50 – 14:55 **Panel Discussion**

Karl Kensinger, Chief of the Satellite Division, FCC

Jennifer A. Manner, Representative, SIA

Margo Deckard, COO, Lynk

Ruth Pritchard-Kelly, Senior Advisor, OneWeb

14:55 – 15:15 **Break**

Session 5: Delivering Universal Service

The recent pandemic has shone a light on digital inequalities and the importance of broadband connectivity. Against this backdrop, President Biden has said that addressing the digital divide and extending broadband internet into as many homes as possible is one of his key priorities. The next 2 sessions will focus on these key issues. Firstly, we will focus on the recent awards as part of the Rural Digital Opportunity Fund (RDOF) and the extent to which this can be deemed to have been successful in meeting its objectives; before moving on to look more generally at the strategies, plans and technologies that are being considered across the US and wider Americas region to achieve the ultimate goal of universal broadband availability and affordability.

Session Si: A focus on...The Rural Digital Opportunity Fund (RDOF)

Phase I of the RDOF reverse auction took place late last year, with 180 winning bidders gaining funding to deploy high-speed broadband to more than 5.2 million unserved homes and businesses. The winners included cable operators, electric cooperatives, incumbent telcos, satellite companies and fixed wireless providers. Bidding was so competitive that only \$8bn of the budgeted \$16bn was awarded in the end, leaving \$12bn left for phase 2 of the auction which will focus on 'underserved' areas. This session will look in details at the design, structures, outcomes and 'winners and losers' of the phase 1 awards. Looking forward, it will assess the extent to which the auction is likely to be successful in achieving its objectives of helping to deliver universal service, and what the outcomes might mean for phase 2 of the auction as well as for future auctions and awards more broadly.

- What auction design and structures were used in RDOF phase 1, and how did this impact the outcomes?
- Who were the big winners and losers?
- With a lot of successful bids coming from fibre providers, might this have any impact on the future of wireless broadband solutions and specifically FWA in rural regions?
- Did the FCC authorise bidders in a way that ensure they were in a position to be able to serve the respective areas?
- Should it be the case to be qualified in a state to receive should somehow be tied to existing operations of the bidding company?
- Were the rules prioritising higher tiers a fair way to organise things?
- To what extent can the new approach and design taken with the RDOF auctions be deemed to be a success, and what might this mean for future auctions and awards?
- As we move towards phase 2 of RDOF, how much of an impact might the updates being made to the FCC broadband maps have of the scope of areas that are being designated as 'underserved'?

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

15:15 – 16:00 **Panel Discussion**

Johanne Lemay, Co-President, LYA

Alexi Maltas, SVP & General Counsel, CCA

Brian Regan, Senior Vice President of Strategy & Chief of Staff, Starry

Session Sii: Where next? Standing up to the challenge of delivering universal, affordable broadband across the Americas

Having focussed specifically on RDOF in the last session, this session will now turn more broadly to focus on the work that is being done to connect communities all over the US, Canada and the wider Americas region. Alongside broadband availability and universal service, it will also consider affordability – according to a recent study, more Americans today have access to broadband but choose not to subscribe than Americans who have no access – principally because of cost. Speakers will look at the different policy and technology tools that exist to deliver the universal, affordable broadband across the region that is required. It will look at work that is being done to smooth network deployment on tribal lands and elsewhere, and the extent to which these efforts and initiatives across the Americas can finally make a difference in successfully closing the digital divide.

- What are the goals for Universal Service delivery in the US and elsewhere across the Americas, and how can regulators work alongside other stakeholders to ensure that these goals are met?
- With now more money than ever available to support the delivery of universal service, what should be the next steps?
- 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?
- To what extent can fixed wireless access be 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?
- What can be done to address the issue of affordability, and how can it be ensured that this is prioritized alongside infrastructure rollout?
- What work is being done to ease broadband deployment on tribal lands and to encourage collaboration among federal agencies and individual tribes?

- What progress is being made to deliver rural connectivity in Canada and elsewhere across the Americas?
- What impact can 5G have on delivering rural connectivity – can it be the ‘silver bullet’ that some have claimed?

Moderator: **Andy Hudson**, VP, Strategy, Sitenna

16:00 – 17:15 **Panel Discussion**

Michael Janson, Assistant Chief, Office of Economics & Analytics, FCC

Beth Fujimoto, AVP, Public Policy, AT&T

Will Adams, Vice President, Strategic Policy, T-Mobile

Gabriela Lago, Global Spectrum & Regulatory Policy, ESOA

Jean-Charles Fahmy, President & CEO, Centre of Excellence in Next Generation Networks (CENGN), Canada

Antonio García Zaballos, Lead Specialist Telecommunications - Broadband Platform Coordinator, Inter-American Development Bank

DAY 2

Session 6: Emerging mid-band ecosystems

A number of awards and other key decisions have taken place over the past 12 months on some of the most sought after mid-band frequency ranges. This morning's sessions will look at the ecosystems that are now emerging, and what the next steps are from here.

Session 6i: What next for the C-band in Canada and US?

Auction 107 took place in the US last year, allocating 280MHz of prime C-band spectrum to mobile operators. Over \$80 billion was raised in total, with Verizon, AT&T and T-Mobile snapping up a large percentage of the 5,684 licences that were available. Satellite operators will receive \$9.7 billion in incentive payments to vacate the band relatively quickly, and will also be reimbursed for the costs of changing their networks. C-band auctions are also underway in Canada, with the first awards expected to take place before the date of this conference and more set to follow shortly. With spectrum in the C-band now finally becoming available for operators across North America, this session will take stock, and ask 'what next'? It will look at the progress being made in the transition and in clearing the band in the US, and at the likely timeframe ahead across the region for services to come live.

- What progress has been made in the transition and in clearing the band since the US C-band auctions, and what timeframe can be expected to see services go live?
- Given the record prices seen in the auctions, what strategies and plans are in place from operators to find the additional investment now required for network infrastructure and rollout?
- What results were seen in the first C-band auction in Canada, and what can be expected in the second round?
- What mechanisms are in place across the auctions to ensure the delivery of contiguous bands that are needed for the delivery of 5G?
- What will this availability of C-band spectrum across the region mean for the broader 5G ecosystem?
- Where next? Is there now sufficient spectrum available for 5G in the C-band and mid band frequencies more broadly across the US and Canada, or could there still be potential for push for additional bandwidth at some point in the future?
- What might this mean for satellite services in the band, and how can it be ensured that the needs of all key users and technologies are met?

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

09:00 – 10:20 **Panel Discussion**

Matthew Pearl, Assistant Chief, Wireless Telecommunications Bureau, FCC

Rachael Bender, Vice President & Associate General Counsel, Verizon

Chantal Davis, Senior Director, Regulatory Policy, ISED Canada

Jared Carlson, Vice President, Government Affairs, Ericsson

Allan Ingraham, Principal, Secretariat Economists

Gerry Oberst, Senior Counsel, Hogan Lovells

10:20 - 10:40 **Break**

Session 6ii: The emerging 6GHz ecosystem and the different perspectives

Earlier this year, Canada took the decision to join the US in making the full 6GHz band available for WiFi devices, with the power limits that they are permitting in the band meaning that they are actually freeing up an additional 100MHz of spectrum compared to their US counterparts. Meanwhile, the future of the band elsewhere around the world is less certain – most countries are still yet to make a decision on this. Whilst part of the industry supports the RLAN usage of this spectrum, another part of the industry supports this band for licensed use. This session will look at what the approach taken across Canada and the US, at the new use cases that opening up this spectrum is going to enable, and at the measures that have been put in place within different scenarios to help avoid interference. It will look at what the decisions that have been taken might mean for various different stakeholders – WiFi providers, incumbent users and users in adjacent bands, other industries also interested in this spectrum and most importantly, consumers.

- How does the decision to make the full 6GHz band available for WiFi affect different industry stakeholders?
- How do the approaches taken in the 6GHz band in the US and Canada differ, and how much additional spectrum is realistically going to be made available in each case?
- What is classified as low power indoor (LPI), very low power (VLP) and standard power unlicensed uses of the band, and in what scenarios are each of these uses permitted?
- What measures have been put in place to protect incumbent (eg 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)?
- What results have been seen in the testing done to date, and to what extent has any interference been seen with backhaul services and others?
- What is the current status with the development of AFC (Automatic Frequency Coordination) standards and what progress has been made on AFC certification? Is this considered to be sufficient for the protection of fixed services?
- What is the timeframe ahead for likely rollout of full commercial services across the band?

Moderator: **Brent Skorup**, Senior Research Fellow, Mercatus Center, George Mason University

10:40 – 12:00 **Panel Discussion**

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

Josette Gallant, Senior Director, Terrestrial Engineering and Standards, ISED Canada

Mark Gibson, Director, Business Development, CommScope

Stacey Black, AVP, Federal Regulatory Affairs – Spectrum, AT&T

Veena Rawat, Senior Spectrum Advisor, GSMA

Alan Norman, Director, Public Policy, Facebook

Session Giii: The emerging CBRS Band ecosystem

Now almost a year on from the award of licences in the CBRS band, this session will look at the progress that has been made on the development, launch and commercialisation of services in the band and the landscape that is developing. It will look at the rules and power limits that govern access to spectrum in the band, and consider whether there may be the need to re-examine this either now or sometime in the future.

- What number of deployments have been seen by both PAL (Priority Access License) and GAA (General Authorized Access) users, and what have been the experiences for both?
- What real-world experiences have been seen with regards to uses of the CBRS band, and what has this taught us as to whether the protections that are in place are sufficient?
- How do power limits differ between users in the CBRS band and users in the neighbouring 3.7GHz band and the soon to be allocated 3.45GHz band? What are the challenges relating to co-existence between services in these respective frequencies?
- What would be the impact of higher power CBRS operations?
- To what extent could IIC be a realistic option to explore in the CBRS band and what benefits could this bring?
- To what extent are the current methods and processes in place enabling an effective and efficient use of this valuable spectrum in terms of cost/usage benefit? What options exist for the different stakeholders and users in the band to best take advantage of the available bandwidth?

Moderator: **Rhys Robinson**, Director of Business Development, North America, ATDI Group

12:00 – 13:00 **Panel Discussion**

Jennifer McCarthy, VP, Legal Advocacy, Federated Wireless

Lynna McGrath, CIO Office, DoD

Colleen King, Vice President, Regulatory Affairs, Charter

Dave Wright, President, OnGo Alliance

13:00 – 13:45 **Lunch**

Session 6iv: Fireside Chat - Maximising the potential of the 12GHz band

The 12 GHz band was once considered high on the cellular spectrum charts, but is now starting to become hotly contested by a number of users. The band is currently used by digital broadcasting service (DBS) providers, and Multi-Channel Video and Data Distribution Service (MVDDS) and NGSO licensees operating on a non-harmful interference basis to DBS. It was recently however described as one of the best positioned mid-band spectrum bands potentially available for 5G, with proponents including Dish saying it offers the potential of 500MHz of contiguous spectrum. Earlier this year the FCC voted to issue a Notice of Proposed Rulemaking (NPRM) on the band, exploring whether rules may be changed to accommodate 5G services. This session will look at the current use of the band, and the potential that may exist to accommodate new services without causing harmful interference to existing users.

- What users and services currently operate in the 12GHz band, and what are the rules governing access to the available spectrum?
- To what extent is the available spectrum in the band being utilised to its full potential? Is there a need to look at revising rules in order to ensure the band is put to best use?
- Would it be possible for satellite and terrestrial services to co-exist in the band?
- What is contained in the NPRM that has been put forward by the FCC, and what impact could this have for users of the band?
- What is the situation in the adjoining Cable Television Relay Service (CARS) band, and to what extent could spectrum in this band also be explored as a possible option for 5G?
- What is the situation regarding the 12GHz band in other countries and regions around the world?

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

13:45 – 14:30 **Fireside Chat**

Eric Graham, Director, Government and Regulatory Engagement, North America, OneWeb

V Campbell, Co-Founder and CEO, RS Access

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

Session 7: Regulator's corner – Future plans and expectations for mmWave 5G

Allocation of the mmWave frequencies in the US have now been completed, with awards having taken place in the 37 GHz, 39 GHz and 47 GHz last year following previous successful allocations of the 24 GHz and 28 GHz bands. The urgent demand for spectrum in these bands has however at least partially been driven by a shortage of available bandwidth in key mid-band frequencies - an issue that has recently been addressed, with the release of spectrum in the CBRS band and C-band and more to soon follow. Against this backdrop of the change in the overall spectrum landscape, this session will bring together regulators from the US, Latin America and Europe to talk about their future plans for 5G in mmWave frequencies and the role that mmWave will likely play in the broader 5G ecosystem.

- Now that there is a large amount of mid-band spectrum available, what might this mean for the future of mmWave in the US and elsewhere around the world?
- Will there be an adjustment in the way mmWave spectrum is being used and the use-cases seen in the band?
- Will mmWave spectrum remain the central for 5G network rollout, or is it likely to move to more of a 'support' role in specialized applications as part of primarily mid-band or low-band based 5G networks?
- What demand for mmWave spectrum has been seen in countries outside North America and how is this likely to develop in the future?
- Are more countries looking to make spectrum available and if so then what is the likely timeframe ahead?

Moderator: **J. Armand Musey**, President & Founder, SummitRidge Group

14:30 – 15:15 **Roundtable – Regulator's corner**

Joel Taubenblatt, Acting Chief, Wireless Telecommunications Bureau, FCC

Javier Juárez, Commissioner, IFT, Mexico

Philip Marnick, Group Director, Spectrum, Ofcom

15:15 – 15:35 **Break**

Session 8: Towards the next frontier: delivering the required connectivity for next generation technologies and applications

5G may still be in its infancy, but it has already enabled a vast swathe of new use cases and applications, often with very varied connectivity requirements. As we now begin to move beyond 5G and start out on the path towards 6G and next generation technologies, maintaining US prominence and global leadership in this area will require foresight and a strategic vision articulated at the national level. This session will look at the work being done to deliver this and the path ahead. It will look at how the future spectrum landscape is likely to develop. It will examine some of the emerging technologies and use cases that are likely to emerge, and at what needs to be done to meet the connectivity requirements of the future and ensure US's position as leading the way on next generation connectivity.

- What is the vision for 6G? How will B5G and 6G differ from 5G?
- What roadmap towards 6G is starting to emerge in North America, and how can the US ensure a collaborative strategy that advances its position as a global leader as we move towards next generation technologies and applications?
- What public funding is in place across North America for research and development of emerging technologies and how does this compare to funding programmes being seen elsewhere around the world?
- What are some of the new use cases and applications that are starting to emerge? What are their likely connectivity requirements, and how can it be ensured that these are met?

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

15:35 – 15:55 **Keynote Presentation**

Evelyn Remaley, Acting Assistant Secretary of Commerce for Communications and Information, NTIA

15:55 – 16:15 **Presentation**

Brian Daly, Steering Group Co-Chair, Next G Alliance

16:15 – 16:35 **Case Study – meeting the future connectivity requirements of unmanned arial vehicles and urban air mobility**

Sergio Bovelli, Head of Spectrum Management Aero-Connectivity, Airbus