

# LatAm Spectrum Management Conference 2024

"Espaço Cultural Renato Guerreiro" ANATEL's Headquarters, Brasília, Brazil – February 20 & 21 2024

## DAY 1

### Session 1: Keynote Presentations

Moderator: **Andre Gomes**, Head of Global Trend Services, Cullen International

09:20 – 09:50 **Keynote Presentations & Welcome Addresses**

**Hermano Tercius**, Secretary of Telecommunications, Ministry of Communications, Brazil

**Carlos Baigorri**, President, Brazilian Telecommunications Regulatory Agency, ANATEL

09:50 – 10:10 **Keynote Presentation**

**Mario Maniewicz**, Director, BR, ITU

### Session 2: WRC-23 – Debrief, outcomes and next steps

The dust has just about settled following 4 weeks of intensive discussions at WRC-23. Decisions have been taken on key agenda items, and stakeholders across the Americas and globally are now starting to consider what this means for them, and what are the next steps? This session will look to answer these questions and more and discuss the timeline ahead in order to implement the outcomes and decisions that have been taken. As a first opportunity to digest WRC-23, we'll dive into questions and answers that have come out of Dubai and what this means for Latin American countries, stakeholders and citizens and their immediate and long term objectives.

- What decisions were taken on the key agenda items at WRC-23, both in Region 2 and elsewhere?
- In which areas are there now clarity in the decisions that have been reached, and where are there still potential questions remaining?
- How are these decisions set to affect the future spectrum landscape across the Americas region and the bandwidth that is going to be available to different industry groups and technologies?
- To what extent do key industry groups now have access to sufficient spectrum to meet their future connectivity requirements and to secure the continued growth and evolution of their sector?
- What are now the next steps to implement the decisions that have been taken and to make spectrum available as quickly and efficiently as possible? What is the likely timeline ahead?
- To what extent can WRC-23 overall be said to have been a success for CITELE and the Americas region? Are there any lessons that can be taken into future conferences?

Moderator: **Andre Gomes**, Head of Global Trend Services, Cullen International

10:10 – 10:20 **Introductory Presentation**

**Victor Martinez**, Chairman, WRC-WG, Inter-American Telecommunication Commission, CITELE

10:20 – 11:20 **Panel Discussion**

**Hector Bude**, Head of Spectrum Management Department, URSEC Uruguay

**Luciana Camargos**, Head of Spectrum, GSMA

**Michelle Caldeira**, Global Spectrum & Regulatory Policy, GSOA

**Jose Ayala**, Chairman, Spectrum Group for CITELE Region - Americas, GSA

**Martha Suarez**, President, Dynamic Spectrum Alliance

11:20 – 11:45 **Morning Refreshments**

**Session 3: Maximizing the value of mid-band frequencies – has the right balance been achieved?**

Spectrum in the mid-band frequencies has been hotly contested over the past decade or more, with key users jostling for access to what has been described as the spectrum ‘sweet-spot’. Following key decisions at WRC-23 on (amongst others) the 3.3 - 3.4 GHz, 3.6 – 3.7 GHz, 3.7– 3.8 GHz, 4.8 – 4.99 GHz and 6 GHz bands, there is now a clearer perspective of identified spectrum for IMT both across the Americas and globally. This session will look at the shape of the spectrum landscape that has developed, the balance of different technologies that have access to frequencies and the access models that are used to provide this. It will explore the extent to which key technologies now have access to sufficient mid-band frequencies to meet their future requirements, and whether the correct balance has been achieved when it comes to making spectrum available on a licensed, unlicensed, and shared basis. Are these key bands being allocated in a balanced manner that meets all stakeholder needs? What is now the best way forward to ensure that maximum value is obtained from these key bands in order to deliver the best possible outcome for consumers and businesses across the region?

- What is the shape of the overall spectrum landscape across the 1GHz – 6GHz mid-band frequencies, and how much bandwidth is available to different users?
- What proportion of spectrum across the mid bands is now available on a licensed, unlicensed and shared basis? What impact does this have on efficiency of bands and on the ‘value’ that connectivity providers can obtain from the available bandwidth?
- To what extent do IMT, satellite, WiFi and other key users in the band now have access to sufficient mid-band spectrum to meet current and future needs?
- How have the decisions at WRC-23 on key bands such as the 3.3-3.4GHz, 3.6-3.7GHz, 3.7-3.8GHz, 4.8-4.99 GHz and 6GHz impacted the overall balance in the range?
- Given the extremely extensive use that is seen within the bands and the presence of a large number of incumbent users, to what extent is there still scope for space to be found within the spectrum for new technologies and stakeholders in the future?
- How important is harmonization at a regional and global level across mid-band frequencies and to what extent is this being achieved?
- To what extent is the potential of these key bands now being maximized, and are there still ways that they can be utilized more efficiently and effectively?

Moderator: **Cameron Currin**, Manager, Aetha Consulting

11:45 – 13:00 **Panel Discussion**

**Tania Villa Trapala**, General Director of Spectrum Planning, IFT Mexico

**Glenn Fallas**, Director General of Quality and Spectrum, SUTEL Costa Rica

**Cristiane Corrêa**, Counsel Leader, ABRINT

**Sérgio Garcia Alves**, Policy Manager, ALAI

**Hazem Moakkit**, Vice President, Spectrum Strategy, Intelsat

**Hu Wang**, Head of Radio Spectrum Policy, Huawei

13:00 – 14:00 **Lunch**

**Session 4: Developing a regional strategy to deliver vertical connectivity**

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 end-users and users in hard-to-reach areas, enabling them to develop their own private, localized networks. A number of different bands and approaches are being seen around in different regions around the world. This session will look at the different approaches that are being seen, and at the licensing models and bands that are emerging as options to provide the ultra-reliable 'industrial' grade connectivity that is required by key vertical sectors. It will explore the pros and cons of approaches sharing and localized licenses, and at the technical conditions, parameters and power limits that may be necessary to ensure interference free access for both incumbent and new users.

- What different approaches to delivering the required spectrum for verticals are being seen in countries across the Americas and elsewhere globally?
- What options should be considered to find the required spectrum for localized private networks both in terms of bands and licensing models?
- How important is it that a coordinated approach is seen across Latin America and what work is being done in this area?
- How can a framework and parameters be implemented for the delivery of vertical connectivity that ensures the protection of incumbent and existing users? What technical conditions and power limits may be required?

Moderator: **Sebastian Cabello**, CEO, SmC+ Consulting

14:00 – 15:05 **Panel Discussion**

**Vinicius Caram**, Superintendent of Grants and Resources, ANATEL Brazil

**Wilmer Azurza**, Coordinator, Networks & Radio Spectrum Management, MTC Peru

**Larissa Jales**, Policy & Regulatory Manager, GSMA

**Angelo Canavitsas**, Spectrum Manager, Petrobras

**Carlos Riopedre**, COO & Managing Director, Sateliot

### **Session 5: Unleashing the potential of 5G across Latin America and the Caribbean – what progress is being made 5G and what challenges are still ahead?**

5G rollout across the region is gathering pace, with an increasing number of countries now having deployed networks over the past 12 months, and more expected in 2024. This session will look at the current state of play across the region, and the extent to which a coordinated approach across the region is emerging. With progress across countries at varying stages, it will look at the different solutions that are being found to drive 5G connectivity forward. It will explore lessons that can be taken from those experiences seen to date of 5G rollout, as well as lessons learned from previous 'G' rollouts. How can stakeholders across the region work together to accelerate the pace of 5G deployment across the region in order to meet the increasing needs of stakeholders and emerging new use cases across the region?

- Where are we with 5G rollout across the region? What were the initial targets and objectives, and are we on track to deliver these?
- What experiences have been seen so far in countries that have already launched 5G? What lessons can be taken from these and also from experiences of rollout of previous 'G's?
- What are the key factors that countries should be considering when considering timings and strategies to launch 5G services in their markets?
- What key use cases are emerging and what are being seen as the leading drivers for 5G?
- Which 5G bands have now been assigned across the continent, and what progress has been made in actually awarding the available spectrum?
- With the 3.5 GHz band seen globally as the 5G band, what progress has been made in this band specifically?

- What obstacles are holding things up in the cases where the assigned spectrum has not yet been awarded, and what can be done to accelerate deployment?
- To what extent are mmWave frequencies forming a part of the early 5G ecosystems in the country, and how can this be expected to develop in future years? Will it play an integral part, or is it more likely to be limited to specialist use cases?
- How can stakeholders work together to develop and accelerate the deployment of 5G?
- How can the need to find additional spectrum for 5G be balanced with other key priority areas and with meeting the spectrum needs for emerging technologies in other sectors?

Moderator: **Carolina Limbatto**, Head of Americas, Cullen International

15:05 – 16:10 **Panel Discussion**

**Sidney Nince**, Advisor to Superintendent, Licensing & Resources for Provision of Services, ANATEL Brazil

**Alberto Delgado**, Radio Spectrum Director, INDOTEL, Dominican Republic

**Cesar Funes**, Vice President, Latin America Public Affairs, Huawei

**Celso Birraque**, Director of Mobile Access Networks, Claro, Brazil

16:10 – 16:35 **Afternoon Refreshments**

### **Session 6: Best Practice in pricing, licensing and renewals - Balancing economic and societal goals**

Regulators across Latin America are faced with the constant challenge of finding the best way to bring spectrum to market whilst designing fair and competitive award processes for both spectrum acquisitions and license renewals. A range of different approaches are being seen, with regulators increasingly introducing regulatory tools such as coverage obligations, regional licensing and the full reallocation of auction proceeds into connectivity infrastructure to bring balance between social and economic goals when designing awards. This session will look at some of the innovative new approaches that are being seen across the region, and at the results that these are delivering. It will discuss the importance for regulators to implement fair and clear pricing strategies when it comes to both license awards and renewals, looking at examples of best practices and the impact that uncompetitive pricing can have, as well as how legacy challenges can be overcome. It will move on to more broadly address processes that should be used to ensure spectrum prices for both initial spectrum awards and renewals of licenses, and on the effect that high spectrum prices can have on consumers as well as impacting the level of investment and rollout speed of networks.

- What license awards and renewals have been seen in the region over the past year and what is expected over the next 12 months?
- What examples of best practices have we seen in licensing and awards across the region and how can regulators ensure that they are taking account of both economic and societal goals when selecting award processes?
- How can creativity in auction design help to lead to more efficient spectrum use?
- What innovative new pricing models are being used by regulators across the region and what impact are these having on auction outcomes and the overall speed of network rollout?
- What factors need to be taken into account when looking to design the process and set fair pricing for the renewal of spectrum licenses?
- Given the more mature markets that are being seen today, is there an argument to rethink the broad approach of how license renewals are handled?

- What purpose is served by the renewal license fee that is seen in most cases; and are these the best way to deliver socio-economic value? Are there any market-based or other alternatives that can be considered?
- What factors have led to some of the examples that have been seen in the region of spectrum remaining unsold in award processes or of licenses not being renewed by operators? How can regulators look to avoid these going forward?

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

16:35 – 16:45 **Presentation**

**Stefan Zehle**, CEO, Coleago Consulting

16:45 – 16:55 **Presentation**

**Nilo Pasquali**, Superintendent of Planning & Regulation, ANATEL Brazil

16:55 – 17:30 **Fireside Chat and Discussion**

17:30 – 19:00 **Networking Cocktail Reception** (*hosted by Intelsat*)

## **DAY 2**

08:00 – 08:30 **Chicas TIC Networking Breakfast**

### **Session 7: The road to Universal Connectivity – harnessing new technologies and strategies to tackle connectivity and usage gaps**

Concerted efforts across Latin America to overcome the digital divide have seen significant progress, with exponential growth in connectivity achieved over recent years. Progress has now slowed slightly however as more communities are brought online, as naturally it is those areas which are the most economically and technically challenging areas that are the last to be connected - the majority of the estimated 7% of the population in the region (40 million people) that still remain unconnected live in the very remote areas or in locations with complex terrain. And in addition to this coverage gap, there also remains a significant usage gap, with millions of people in both rural and urban areas having access to connectivity but not using it due to barriers such as device affordability and lack of digital skills. Increasingly collaboration is becoming part of the strategy to tackle these remaining challenges, with regulators and different industry sectors all working together in order to deliver sustainable and economically viable solutions. This session will look at some of the different approaches that are being seen across different countries, and how policymakers and industry are coming together to utilize innovative new technologies and strategies to tackle both connectivity and usage gaps across the region.

- What different approaches to closing connectivity and usage gaps are being seen across the region, and which are having the most effect? What regional and national targets have been set and to what extent are we on track to meet these?
- What specific challenges are faced when looking to connect some of the most challenging areas that remain unserved in the region? How are innovative new technologies and strategies being harnessed to deliver this?
- To what extent is collaboration between different connectivity providers increasingly becoming part of the solution? What examples of different sides working together in this way are being seen and how is this increasing connectivity across the region?
- How are regulators working with industry, using innovative regulation to match innovative technologies and services? What countries are leading the way in this area, and are there lessons that can be taken from the approaches that they are using?
- Can efficient and clever spectrum management, such as network sharing, be utilized to collectively meet connectivity requirements?
- What impact have Universal Service Funds had on helping to tackle the problem and how successful have these been? What other Government programs and funding assistance has been provided and which approaches have seen the greatest success?
- How can it be ensured that the connectivity requirements of communities are understood, and that delivery of connectivity is coupled with addressing issues that ensure that businesses and households are in a position to take advantage of this (eg, digital education, affordability etc.)?
- How can governments and industries work together to lower costs for data and devices and mitigate affordability as a key usage gap barrier?
- What initiatives are being seen in this area, and to what extent is policy action necessary in order to address affordability barriers for both devices and data?

Moderator: **Rodrigo Robles**, Program Officer, Regional Office for Latin America, ITU

09:00 – 10:05 **Panel Discussion**

**Nathalia Lobo**, Director of Public Policies, Ministry of Communications, Brazil

**Maria Myers-Hamilton**, Managing Director, Spectrum Management Authority of Jamaica  
**Fabio Alencar**, President, SindiSat  
**Milene Franco Pereira**, Senior Manager, Government Affairs, Qualcomm

10:05 – 10:30 **Morning Refreshments**

### **Session 8: Delivering the required connectivity for an evolving space and satellite sector**

The global space and satellite sector is currently experiencing a period of rapid transformation and development. The increasing number of NGSO networks and ‘mega constellations’ that are being seen today is creating exciting new opportunities, but also a dramatic increase in satellite demand for spectrum and a number of regulatory challenges, including licensing rules and frameworks. This session will examine the current regulatory framework for spectrum access for geostationary (GSO) and non-geostationary (NGSO) satellites, exploring the extent to which an update is required in order to keep pace with the new technological advancements and innovations that are being seen, as well as protecting spectrum rights of existing and new users. It will examine some of the exciting new business models that are emerging (such as direct satellite-to-device connectivity) and how these are impacting the way in which satellite operators are accessing and using spectrum, and discuss the best way forward to ensure the satellite sector can continue to thrive as we move towards 6G.

- What exciting new innovations are being seen in the satellite sector today, and what can be expected over the next five years and more?
- What licensing models and rules currently guide access to spectrum for satellite systems across LatAm countries and globally? How can we ensure the protection of spectrum rights for both incumbent users and new market entrants, and that sufficient spectrum is available for all users?
- To what extent can coexistence of GSO and NGSO satellites in the same band a possibility? What current rules and limits are in place to ensure protection against interference and are these fit for purpose?
- Is a first-come, first-served (FCFS) licensing procedure still appropriate in today’s evolving market?
- What role can the ITU play in providing a coordinated framework and more harmonized frequencies for current and future satellite systems and what work is expected to be done to look into this ahead of WRC-27?
- How are technological developments and evolving business models changing the relationship between satellite and mobile operators?
- Will direct-to-device present challenges and interference for current spectrum stakeholders, how can properly managed spectrum mitigate these challenges before they arise?
- What are the technical and regulatory challenges of using either MNO’s existing spectrum or alternatively spectrum that has been specifically allocated to Mobile Satellite Services?
- How do services in this way fit within the ITU regulations?
- 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: **Alexandra Contreras**, Advisor, Spectrum Policy, Forum Global

10:30 – 11:45 **Panel Discussion**

**Luciana Ferreira**, Satellite Processes Coordinator, ANATEL Brazil  
**María Fernanda Sánchez Zavala**, Director, Technical Analysis & Orbital Resources, IFT Mexico  
**Kalpak Gude**, Head of Domestic Regulatory Affairs, Project Kuiper, Amazon  
**Felipe Rodrigues**, Senior Product Manager, Lynk

**Mindel De La Torre**, Chief Regulatory and International Strategy Officer, Omnispace  
**Hazem Moakkit**, Vice President, Spectrum Strategy, Intelsat

**Session 9: Developing a coordinated and forward-looking spectrum framework for the Americas region – delivering on national and regional objectives**

Striking the balance between coordinated development of spectrum policy across the region, and the need to take into account national differences and to provide strategic autonomy for each country is a challenging objective. The benefits of coordinated regional policies are well documented - harmonization increases economies of scale, widening the availability of equipment and reduces prices. Simultaneously, individual countries have individual requirements and there is the need to consider these national differences when delivering spectrum policies to deliver maximum benefits to citizens and businesses. Coupled with this fact, in recent years, the spectrum framework that has been developing across some of the countries that have traditionally led the way in many areas of spectrum policy in the region has taken a different path than that seen in other regions around the world. This session will look at the importance of harmonization on key spectrum policy decisions in the region, and where the balance lies between this approach and also taking into account national differences. How can countries make the best decisions on a national and regional level to ensure policies that obtain maximum value from the available spectrum and deliver on both country specific and wider regional objectives?

- Which areas of spectrum policy are currently seeing harmonization across the Americas, and where are national differences appearing?
- To what extent has the right balance been seen between these 2 approaches?
- To what extent should smaller countries across the region be looking to follow band plans and decisions taken in countries offering larger markets in order to take advantage of the economies of scale that this can offer?
- With some countries in the Americas exploring options and approaches in key bands that are different from those seen in other regions globally, how should this affect decisions on a regional and national level across the Americas?
- Can alignment lead to a more competitive marketplace, encouraging more stakeholders to join national and wider regional spectrum activities?
- What work is being done across the region to simplify regulations, allowing more decisive decisions to be made, at a quicker rate? How important is regulatory certainty on both a national and regional level in order to encourage investment and innovation?
- What work is being done to deliver this through national future-facing roadmaps and how can regulators plan ahead whilst also ensuring that they are keeping pace with the future needs of a fast-evolving industry?

Moderator: **Agostinho Linhares**, General Coordinator of Telecommunications Regulatory Monitoring, Ministry of Telecommunications, Brazil

11:45 – 13:00 **Panel Discussion**

**Neşe Guendelsberger**, Deputy Chief, Office of International Affairs, FCC

**Rodrigo Robles**, Program Officer, Regional Office for Latin America, ITU

**Wilmer Azurza**, Coordinator, Networks & Radio Spectrum Management, MTC Peru

**Josh Baggett**, Head of Global Spectrum Policy, HPE

**Prakash Moorut**, Global Head of Spectrum & Regulatory Affairs, Shure

**Jose Arias**, Head of Global Policy and Regulatory Affairs, Nokia

13:00 – 14:00 **Lunch**



## **Session 10: Creating the 6G Connectivity Landscape – evolving access models and advancing technologies**

Whilst work across the LatAm region is continuing on the rollout of both 4G and 5G networks, attention is also starting to turn to what comes next, and on delivering the required spectrum to meet the future needs of 6G. There will be a need to balance the need to find spectrum for 6G with the continued demand for additional spectrum for 5G and intensified competition from a diverse range of both existing and new players. Against this backdrop, and also considering the fact that it seems very likely that 6G is going to require large blocks of contiguous spectrum in an already highly crowded ecosystem, it will be impossible to meet these needs through the identification of new bands alone. Creative and innovative approaches from both policymakers and connectivity providers will be required, with emerging technologies and innovative new access and licensing models likely to play a part in helping to deliver the required connectivity. This session will explore the likely evolution of the connectivity environment and the framework that governs access to spectrum as we move towards the era of 6G. It will look at trends that may emerge and at how creative policy measures and advancing technologies can help maximize the efficiency of the available bandwidth and ensure that the needs of 6G are met alongside other key future connectivity technologies.

- What are expected to be the connectivity requirements for the numerous use cases that are set to be enabled by 6G? How may these differ from those which are seen for 5G, and what are regulators and connectivity providers going to need to do in order to deliver these?
- What innovative new licensing models and approaches can help deliver this required connectivity?
- What role can the reframing of legacy 2G and 3G spectrum play?
- How may regulators have to adapt traditional methods of assigning and licensing spectrum and what innovative new ways of using the spectrum in these bands could be used?
- How can regulators balance the need to find spectrum for 6G with the need to also consider growing needs of other future technologies?
- To what extent can advancements in technologies such as Next Generation Massive MIMO & AI Driven Systems help to optimize connectivity system performance and contribute to enabling the 6G future?

Moderator: **Mario Maniewicz**, Director, BR, ITU

14:00 – 14:10 **Introductory Presentation: ITU's IMT 2030 Vision**

**Mario Maniewicz**, Director, BR, ITU

14:10 – 15:15 **Panel Discussion**

**Marcelo Rute**, Head of Telecommunications Development Fund, SUBTEL Chile

**Luciano Leonel Mendes**, xGMobile Coordinator and Professor, Inatel

**José Arias**, Head of Global Policy and Regulatory Affairs, Nokia

**Ryan Johnson**, Co-Lead of Americas Region, GSOA

15:15 – 15:40 **Afternoon Refreshments**

## **Session 11: Where next? Starting out on the path towards WRC-27 – Key agenda items, expectations, challenges and opportunities**

With WRC-23 behind us, we now look forward to WRC-27. The first preparatory meeting for this next conference (CPM27-1) took place in the week immediately following the conclusion of discussions in Dubai, and the key agenda items and bands to be studied have been set. This session will look at the work that will now begin and the timeline ahead as working parties and studies start to take shape. It

will explore the issues that are set to be most prominent in discussions over the next four years both in Region 2 and internationally, and what this could possibly mean for the development of the spectrum landscape across Latin America. How will all stakeholders be involved over the next four years, what are their priorities, and how can the region come together to ensure that WRC-27 brings with it a better and more prosperous spectrum policy at national and regional levels?

- What are the key agenda items and bands to be discussed at WRC-27, and what are the first steps in the build-up to this?
- With WRC-23 and WRC-19 both critical in setting spectrum bands for 5G, to what extent will spectrum for 5G still be part of the discussions for WRC-27 or is it likely the focus will switch entirely to 6G?
- What usage is currently seen both across the LatAm region and globally in each of the 3 candidate bands that have been identified for study for IMT use ahead of WRC27 (4400 – 4800 MHz; 7125 – 8500 MHz and 14.8 – 15.35 GHz)?
- What are the key technical and regulatory challenges that would need to be overcome in order to introduce IMT services in each of these bands, and what mechanisms may be available to do this?
- With frequencies across this range already experiencing extensive usage from satellite, fixed links, military, and more, are there other bands outside this range that can also be studied in order to try and release pressure on these extremely sought-after frequencies?
- What agenda items have been put forward to study the rules that govern satellite access to spectrum? How could this potentially affect the way in which direct-to-device connectivity and other services are delivered; and what work needs to be done over the next 4 years to deliver a framework that balances the protection of existing services with the need to encourage innovation and new entrants?

Moderator: **Rodrigo Gebrim**, Manager, Spectrum, Orbit & Broadcasting, ANATEL Brazil

15:40 – 16:45 **Panel Discussion**

**Hector Bude**, Head of Spectrum Management Department, URSEC Uruguay

**Neşe Guendelsberger**, Deputy Chief, Office of International Affairs, FCC

**Jose Ayala**, Global Policy Advocacy Director for Latin America, Ericsson

**Geraldo Neto**, Vice President, TMG

**Michelle Caldeira**, Senior Legal and Regulatory Counsel, SES

16:45 – 17:00 **Closing Presentation**

**Cristiana Camarate**, Superintendent, Consumer Relations, ANATEL Brazil