



The 15th European Spectrum Management Conference

23 & 24 June 2020 - Hotel Bloom, Brussels

The 15th edition of the European Spectrum Management Conference will provide a meeting point for spectrum stakeholders to come together and discuss topical issues relating to the management and coordination of spectrum policy across the region.

Sessions will include a focus on issues such as the post-WRC landscape and the emerging mmWave ecosystem, tackling connectivity 'not-spots', the future of spectrum sharing, spectrum pricing for 5G awards and much more.

DAY 1

08:30 – 09:00 **Coffee and Registration**

Session 1: Spectrum Strategies and Visions in Europe

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

Fireside Chat - Where next for the new Commission?

The European electronic communications code was adopted in late 2018 and included updates rules for the management of spectrum in Europe. Building on this, in February this year, the Commission issued a request to the RSPG for an opinion on a new Radio Spectrum Policy Programme (to update the last one, which was adopted in 2012). Focussing on these key policy packages and more, this session will look at the key challenges, opportunities and priorities ahead for spectrum policy in Europe.

- What progress has been made with the implementation of the spectrum aspects of the Communications Code into national legislation in member states across Europe?
- Where are we now at with 5G deployment in Europe, and what are the next steps and the roadmap ahead? What should be the priorities for the new Commission be to build on the Communications Code and other recent legislation to deliver on these key objectives?
- Is it time for a new RSPP, and if so then what should the key objectives and priorities be?

09:20 – 10:00 **Fireside Chat**

Andreas Geiss, Head of Unit for Spectrum Policy, European Commission (confirmed)

Additional speakers to be confirmed

10:00 – 10:20 **Thinking Point**

Stefan Zehle, Co-Founder & CEO, Coleago (confirmed)

Session 2: Developing an EU-wide approach for the easy deployment of Small Cells

One of the objectives of the European Communication Code was to provide a light deployment regime for small cells and small-area wireless access points. As the first step to deliver this, the Commission have been gathering feedback and compiling a report on the definition of small cells, the likely scale of network densification and on the impact that a light deployment regime may have. This session will look at the measures that are being taken by the Commission and the next steps as they look to streamline rollout of small cells and 5G deployment more broadly.

- What are the major issues faced when considering the siting, deployment and mounting of small cells and what measures are being proposed by the Commission to reduce any regulatory burden on these?
- What physical and technical parameters have been identified by the Commission to be used to determine what should be considered as a small cell?
- How should it be dealt with in the situation where there are a number of small cells in the same location, possibly sharing some components of equipment?
- Where does the balance lie between delivering a simplified, co-ordinated and more predictable permit regime, and ensuring that member states retain control over the planning of cities and other areas?
- How can it be ensured that any measures taken by the Commission take into account potential environmental, economic and other possible issues raised by small cell deployment?
- To what extent will the work being done by the Commission help to speed up the densification of networks and ultimately 5G rollout around Europe?

10:20 – 11:15 **Panel Discussion**

Christos Datsikas, Policy Officer, Radio Spectrum Policy Unit, European Commission (confirmed)

Representative, EWIA (confirmed, speaker name tbc)

Other speakers to be confirmed

11:15 – 11:35 **Morning Coffee**

11:35 – 11:50 **Keynote Presentation: The post WRC landscape – implementation and next steps**

Mario Maniewicz, Director, BR, ITU (confirmed)

Session 3: The emerging mmWave ecosystem - A focus on the post-WRC landscape

Around the world, mmWave licences are being awarded for IMT, and services are beginning to be rolled out. And with one of the key focusses at WRC-19 being the identification of additional spectrum for IMT in the mmWave bands, the shape of the future mmWave landscape is starting to emerge. This session will look at this in a little more detail, examining the early results that are being seen where mobile services have already been launched in mmWave bands, and at the future shape of services in these bands more broadly.

- Where have mmWave bands now started to be used for 5G in regions around the world and what results are being seen? What mmWave ecosystem is developing?
- Have early results (particularly, for example, from Verizon in the US) started to change any opinions on the potential of these key bands?

- What is the true demand for mmWave spectrum? Will the increasing availability of mid-band spectrum (and with more in the pipeline for the near future) take the pressure off and mean there is less of a focus on mmWave for IMT?
- How much mmWave spectrum was allocated for IMT at WRC-19 and what will this do to the future mmWave landscape? To what extent has this changed plans within mmWave bands both in Europe and elsewhere around the world?
- What will the new '2-phase approach' for the emission limits in the 26GHz band mean for incumbent and future users of the band and does it strike the right balance between protecting satellite users and enabling the quick and efficient roll-out of 5G? What impact could the decision in Europe to move the transition date forward to 2024 (instead of 2027) have?
- What are likely to now be the key mmWave frequencies in the short and longer term, both in Europe and the rest of the world?

Moderator: **Lee Sanders**, Partner, Aetha Consulting (confirmed)

11:50 – 12:55 **Panel Discussion**

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

Luigi Ardito, Senior Director of Government Affairs, Qualcomm (confirmed)

Ethan Lavan, Director of Orbital Resources, Eutelsat (confirmed)

Other speakers to be confirmed

12:55 – 13:50 **Lunch**

Session 4: Looking Forward – key agenda items and prominent issues for WRC-23

With the dust still settling on WRC-19, attention has already moved on to starting to plan for WRC-23. The agenda for this was set by delegates in Sharm-el-Sheikh, and with WRC-19 having now settled a lot of the discussions around mmWave bands, focus is expected to switch to low and mid-band frequencies. This highly interactive session will hear the opinions from key industry stakeholders and the audience in the room more broadly on what they now see as their main priorities, opportunities and challenges ahead of WRC-23.; and look ahead at the next steps and timetable ahead as the build up to WRC-23 already begins.

- Following the outcomes of WRC-19, what are now the key priorities, opportunities and challenges for different stakeholder groups?
- What are set to be the most important (and most contentious) issues or agenda items at WRC-23 both for region 1 and globally?
- Will we still be talking about 'Spectrum for 5G' when we reach 2023, or will the focus have switched to B5G or 6G?

13:50 – 13:55 **Ask the Audience**

An opportunity for the audience to provide thoughts and feedback using interactive voting pads. The questions that will be asked will be the same questions that were posed to delegates at the Middle East edition of this conference earlier this year, allowing for a comparison on the results to be made.

13:55 – 15:00 **Quick-fire panel discussion**

Representatives from industry and policy will discuss what they see as the key issues for WRC-23.

Moderator: **Mario Maniewicz**, Director, BR, ITU (confirmed)

Panellists: **Alexandre Kholod**, Chairman, CPG23, CEPT (confirmed)

Representative, Global Satellite Coalition (confirmed – speaker name tbc)

Other speakers to be confirmed

Session 5: Spectrum for verticals - meeting the connectivity requirements of all users

A major focus area for regulators all around the world at present is on the best way to provide vertical industry users with access to 5G spectrum. A number of different licencing models are being explored by regulators around the world in order to deliver this, including the option to offer vertical users the opportunity to acquire spectrum directly, through localised 5G licences. This session will explore the pros and cons of the various approaches that are being seen and discuss the best way forward to ensure an efficient and flexible spectrum framework that satisfies the many varied 5G and vertical use cases.

- What approaches have been seen in different member states and how do these compare?
- What fee structures are being seen for access, and do these strike the balance between encouraging innovation and ensuring a fair and non-discriminatory approach?
- Taking things a step further, is there an argument for city councils to become spectrum holders?
- Is there an argument that dedicated spectrum should be allocated for IoT?
- Could the approach of reserving spectrum for industry be extended to other bands, for example mmWave spectrum?
- Which spectrum bands would be most appropriate for local licencing to ensure a balance of meeting demand, and how much should be reserved?

Moderator: **Tony Lavender**, Partner and CEO, Plum (confirmed)

15:00 – 15:10 **Presentation**

Tony Lavender, Partner and CEO, Plum (confirmed)

15:10 – 16:10 **Panel Discussion**

Jan-Hendrik Jochum, Senior Expert Public & Regulatory Affairs, Deutsche Telekom (confirmed)

Other speakers to be confirmed

16:10 – 16:30 **Afternoon Refreshments**

Session 6 – Breakout sessions

Delegates have the choice of attending one of the following parallel breakout sessions:

Breakout 1: Not just for the ‘digital-haves’! To what extent can 5G help to tackle connectivity ‘not spots’?

Around Europe, regulators are looking to work with mobile operators and other connectivity providers to help eliminate rural ‘not spots’ and continue the path towards the ultimate goal of universal coverage. Both directly and indirectly, 5G can play a part in achieving this. Directly, through initiatives to fund the roll-out of additional base stations and provide 5G in currently under-served areas; and indirectly, through the inclusion of ‘coverage obligations’ (or other agreements) as part of 5G auctions to ensure that winning bidders increase the coverage of 2G, 3G or 4G connectivity in rural areas. This session will look at the different approaches that are being seen in countries across Europe, and at how 5G can ultimately help to close rather than widen the digital divide.

- When can rural areas expect to start benefiting from 5G, and how can it be ensured that 5G does not widen the digital divide?
- What will 5G connectivity in rural areas look like, and how may it differ from that in cities?
- What approaches to tackling rural ‘not spots’ are being seen in different countries around Europe?
- What role should policymakers be playing in helping to deliver a solution, and what tools are available to them to do this?

- What work is being done to deliver connectivity along roads? By increasing the overall reach of infrastructure, could these then be used as 'branches' to make it easier to then extend connectivity to nearby rural areas?
- What are pros / cons of using coverage obligations as part of 5G auctions to increase rural connectivity, and what other approaches (for example infrastructure sharing) can also be part of the solution?
- How can mobile operators work alongside other public or private actors to improve rural coverage?
- What are the key spectrum bands that can be used and are necessary spectrum requirements in place?

Moderator: **Janette Stewart**, Principal, Analysys Mason (confirmed)

16:30 – 16:45 **Introduction from Moderator**

Janette Stewart, Principal, Analysys Mason (confirmed)

16:45 – 17:45 **Panel Discussion**

Panellists to be confirmed

Breakout 2: Spectrum pricing for 5G awards

Europe is about halfway through the process of selling 700 MHz and 3.5 GHz spectrum, and many regulators are now planning awards of mmWave bands. This session will offer us the opportunity to take stock, and to look at the outcomes of awards to date, both in Europe and beyond. It will examine pricing structures and models that are being used and trends that may be emerging, before discussing the implications of these for future 5G awards.

- What approaches have been used in awards of 5G spectrum across Europe and elsewhere to date, and what results have been seen?
- Are regulators using the right award formats, including types of auction?
- To what extent are auctions the best approach, or can other approaches (e.g. allocation in exchange for coverage obligations) offer a good alternative in some situations?
- Are there any patterns or trends that are emerging and what implications may these have for future 5G awards?
- Are spectrum costs sustainable given the huge increase in supply of frequencies for mobile?
- As we move from completing the current set of 700 MHz and 3.5 GHz spectrum awards to then starting the allocation of mmWave spectrum, are any changes to pricing models required and if so what?

Moderator: Representative, NERA Consulting

16:30 – 16:40 **Presentation: What factors explain the wide range of price outcomes for 5G spectrum?**

16:40 – 16:50 **Presentation: 5G Spectrum awards – what trends and patterns are emerging in auction design and results?**

Speaker to be confirmed

16:50 – 17:45 **Panel Discussion**

Panellists to be confirmed

DAY 2

Session 7: The future of Spectrum Sharing - making the most of the available spectrum in the digital age

Recent advances in technology and in the regulatory environment mean that today, increasingly complex and sophisticated models for spectrum sharing are being put forward, for example Licensed Shared Access (LSA), the three-tiered Citizens Band Radio Service (CBRS) model and a revolutionary localised sharing model recently introduced in the UK. This session will explore these innovative approaches and other options and look at the potential that they offer. It will also look more broadly at the traditional spectrum regulatory regime and discuss whether it is sufficiently flexible to meet the requirements of an innovative and fast-moving sector or whether a rethink on this is required.

- To what extent do traditional models of spectrum management offer the flexibility that is required to maximise the potential of spectrum sharing?
- What examples of flexible, shared spectrum models are already being seen and in which bands?
- Does spectrum licencing on a national basis remains the most efficient way to meet demand for new wireless applications, or are there other cross-border approaches involving spectrum sharing that could also be considered?
- What role can cross-border trials play in helping to advance the development of spectrum sharing systems?
- Is there an argument that there may be a need more broadly for a reconsideration of current spectrum management guidelines to maximise the potential of spectrum sharing and help to fully meet the connectivity requirements of a 5G future?

Moderator: **Colin Thomson**, Head of Practice, Infrastructure, Access Partnership (confirmed)

09:00 – 09:10 **Introduction from Moderator**

Colin Thomson, Head of Practice, Infrastructure, Access Partnership (confirmed)

09:10 – 10:10 **Panel Discussion**

Jennifer McCarthy, VP, Legal Advocacy, Federated Wireless (confirmed)

Frank Krueger, Chair, RSPG (confirmed)

Other speakers to be confirmed

10:10 – 10:30 **Thinking Point: Unleashing the 'Killer Apps' for 5G**

10:30 – 10:45 **Morning Coffee Break**

Session 8: A focus on key mid-band spectrum

Session 8i: Meeting the needs of all users in the 6GHz band

The 6Ghz band has started to emerge as one of the most sort-after frequency ranges for a number of key stakeholders. It is currently used around the world by satellite and microwave systems, but both unlicensed and licensed services deem access to spectrum in the band as critical. This discussion came to a fore at WRC-19, where a decision was made to leave the lower portion of the band (5925-6425 MHz) for licence-exempt use, whilst the upper portion of the band (6425-7125 MHz) is to be studied ahead of a possible IMT identification at WRC-23. This session will look at the likely long-term future of the band, and how the needs of all the key users can be balanced.

- Where does the balance lie between licenced and licence-exempt use of the 6Ghz spectrum?
- What approaches in both the upper and lower portions of the band are being seen around the world?

- What work is being done by CEPT and Commission to develop a harmonised EU approach in the band?
- To what extent is sharing between IMT and Wi-Fi users in the band a viable option in both indoor and outdoor conditions?
- Which of these technologies is best suited to delivering interference free co-existence in the band alongside current incumbent services?

10:45 – 11:50 **Panel Discussion**

Mark Gibson, Senior Director, Business Development, Comsearch – a CommScope company (confirmed)
Other speakers to be confirmed

Session 8ii: Co-existence of satellite and 5G services in the C-band

Ever since the early 2000s, there has been debate on the fixed-satellite service (FSS) sharing with IMT services in the C-band. With more than 20 countries globally now having licensed parts of the band for mobile broadband (and a large proportion of these being in Europe), plus consideration of a primary mobile allocation at 3600—3800 MHz for Region 1 on the agenda for WRC-23, the debate continues. This session will look at current and future usage of C-band, and at the best way forward to meet the requirements of both satellite and mobile in a frequency range that is critical for both sectors.

- What is the current situation regarding 5G deployment and coverage in the C-band both in Europe and around the world?
- With C-band issues featuring prominently on the agenda for WRC-23, how are discussions around the band likely to progress in region 1 in the period up to 2023 and beyond?
- To what extent is interference-free co-existence between mobile and satellite in the C-band possible?
- What approaches are being considered across Europe and the rest of the world to deliver this?
- How can the needs of satellite and other incumbent users in the band and adjacent band services be protected?
- What guard band is necessary to ensure protection against interference? What other technological and regulatory solutions can also help be part of the solution?
- How can countries work together to ensure that appropriate cross-border agreements are in place to protect border regions, both within Europe, and also at borders with other regions (for example with Russia)?

11:50 – 12:55 **Panel Discussion**

Panellists to be confirmed

12:55 – 13:45 **Lunch**

Thinking Point: Coverage from the sky – innovations in delivering connectivity to ‘hard to reach’ areas

The satellite sector has always been key in delivering connectivity to rural and outlying areas, complementing mobile and other technologies to increase overall coverage areas. Recent and forthcoming innovations within the sector mean that this is truer today than it ever has been before. From the most remote, rural locations to ships and aircraft, this session will look at examples of how technologies such as LEO satellites and high altitude platforms offer to provide coverage in areas that it has not been possible before, and the challenges and opportunities ahead.

13:45 – 14:15 **Presentation**

Speaker to be confirmed

14:15 – 14:35 **Presentation**

Speaker to be confirmed

Thinking Point: Greening with Spectrum Management – how can spectrum policy help contribute to the EU pillar of sustainability?

A key objective for the new European Commission is to look at how it can integrate sustainability considerations into all aspects of its policy frameworks. 5G and the development of smart technologies can play a big part in meeting these sustainability goals, especially in the areas of energy and transport, and increasingly spectrum managers are looking at approaches to provide access to the required spectrum in order to support the development of greener, more sustainable systems. The 400MHz band is one frequency that is being considered to assist with this, with a number of different approaches being seen across Europe. This session will look at some of these, and more generally at how spectrum managers can integrate sustainability into key decisions that they are making in order to contribute to a greener society for all.

- How can spectrum managers best look to support the development of smart grids and greener transport systems, and use spectrum to help contribute to a switch to a low carbon energy future?
- What potential does spectrum in the 400MHz band offer to provide the required connectivity, and what is the best approach to allocate this?
- What work is being done within the European Commission and RSPG to support initiatives designed to 'green' through innovative spectrum management approaches?

14:35 – 15:20 **Fireside Chat**

Panellists to be confirmed

15:20 – 15:35 **Afternoon Coffee Break**

Session 9: Mapping the long-term future of the UHF band in Europe and elsewhere

In Europe, the long-term future of the UHF band is relatively stable, with 700, 800 & 900 MHz bands available for IMT, and an agreement in place providing terrestrial broadcasters with access to UHF spectrum below 700 MHz until at least 2030. In other regions around the world however (and even in within region 1), this is not always the case. At WRC-19, there was a proposal from Arab states for a change in the WRC-23 UHF agenda item to propose a harmonised band at 470—694 MHz with a co-primary allocation to IMT. Both Europe and Africa opposed this position and the proposal was rejected, but it is expected to again be one of the key topics for conversation both in the build-up to WRC-23 and at the conference itself. This session will look at the approach to the UHF band in Europe and how it differs to that in other regions. It will examine the future shape of the UHF band in Europe, and more broadly in region 1 and globally, and explore what this means for the future development of the terrestrial broadcasting sector and other incumbent users.

- What is the current thinking regarding the short-term and long-term future use of UHF spectrum in Europe, across region 1 and beyond?
- How much spectrum UHF spectrum is actually required by mobile operators to meet the coverage requirements of 4G and 5G? How can this be balanced with also meeting the requirements of broadcasters and other incumbent users?
- Given that the sub-700 MHz is available for broadcasting in Europe until at least 2030, are there any actions that can be taken by member states (for example those in which the band is not heavily used by broadcasters) ahead of that date that will allow access to mobile services without disrupting the use of the band for terrestrial broadcasters?
- With a revision of the 470-960 MHz UHF band in Region 1 potentially on the agenda for WRC-23, what work needs to be done in study groups in order to prepare for this?
- To what extent should approaches in other regions (for example the Americas, where US and other countries have allocated 600MHz for IMT) have any impact thinking in region 1?

- To what extent are there possibilities for sharing between IMT and incumbent users of the UHF band, and what challenges are there to this? Would making the frequencies available on a paired (FDD) or an unpaired (TDD) basis make any changes to this?

15:35 – 16:45 **Panel Discussion**

Panellists to be confirmed