



Ofcom Spectrum Advisory Board

Annual Report 2023

Report

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Contents

Section

Foreword from OSAB Chair.....	1
Foreword from the Spectrum Group Director.....	2
1. Overview	3
2. Highlights of OSAB Discussions.....	5

Annex

A1. OSAB Terms of Reference.....	11
A2. OSAB Membership.....	13

Foreword from OSAB Chair

Radio spectrum continues to be a critical enabler for a vast range of products and services enjoyed by UK consumers, businesses and government organisations. The rapid rate of technology evolution gives rise to new use-cases every month. Since we can't manufacture more spectrum, efficient and effective use of this finite resource is key for stakeholders in many sectors. As such, members of OSAB can be called upon to analyse and provide expert insight on a huge range of spectrum related topics.

I would like to thank the OSAB board members for their input throughout 2023. The wide-ranging input from industry (operator and vendor), academia and government affiliated OSAB members spanned technical, economic and policy perspectives. 6G, spectrum sharing, and sustainability were among the key topics covered this year. I would also like to acknowledge the excellent support that the Ofcom spectrum team provides to OSAB, proving timely pre-read material to ensure that we maximise the productivity of OSAB meetings.

OSAB is not a static organisation, its board members are appointed for limited duration terms. I would like to thank our departing OSAB members Greg Bensberg, Alastair Macpherson, and David Meyer for their years of committed service.

Recent developments in space, mobile, telemetry and WiFi technologies together with the growth of connected devices will ensure that the demand for spectrum is not diminishing. Hence, I look forward to working with OSAB and Ofcom on a new range of important topics in the coming year.

Gavin Young

Foreword from the Spectrum Group Director

The Ofcom Spectrum Advisory Board (OSAB) has been an invaluable source of advice to Ofcom on Spectrum matters since its establishment. The Board continues to be instrumental in enabling Ofcom to remain at the forefront of innovation in technology and policy by contributing the breadth of perspectives necessary to carry out our remit effectively.

This year, as Ofcom set out its vision for hybrid sharing of the upper 6 GHz spectrum between Wi-Fi and mobile, the Board delivered some insights into the technical, regulatory and commercial challenges and opportunities involved. OSAB Have also looked at the implications of the UK Government's Net Zero objectives on spectrum regulation and management and discussed the role of 3GPP in the development of 6G standards. In support of our Shared Access Framework review OSAB members provided some expert advice regarding current user experience and potential future demand.

This year, the board has welcomed multiple new members who contributed their unique insight into academic and industrial trends in spectrum. In conjunction with our modified approach of deep-diving on prepared topics with question lists and pre-reads which we introduced last year, has contributed to further the depth and relevance of advice the board has provided Ofcom with.

I would like to recognize the significant contributions of the retiring Board members and thank them for their service while welcoming all our newcomers. I am grateful for the ongoing collaboration between Ofcom and OSAB and appreciate the valuable insights from its experts, which we will continue to integrate into our work and future plans.

David Willis

1. Overview

Background

- 1.1 The Ofcom Spectrum Advisory Board (OSAB) was established on 19 May 2004 to provide independent advice to Ofcom on strategic spectrum management issues. OSAB provides Ofcom with:
- a) A rapid way to test new ideas across a wide range of experts;
 - b) A means to identify issues that are beyond Ofcom’s regulatory “highlights”; and
 - c) A demonstration of Ofcom’s commitment to consult in an open and collaborative manner.

Organisational updates

- 1.2 This year Greg Bensberg, Alastair Macpherson, and David Meyer, former OSAB chair, stepped down from the board. We wish to thank Greg, Alastair and David for their efforts and contribution to OSAB.

Annual Report

- 1.3 This document reports on OSAB activity from April to October 2023. It is intended to provide highlights of discussions throughout the year and its content is based on minutes taken during the OSAB meetings.

Work programme for 2023

- 1.4 OSAB is responsible for agreeing its own work programme. During 2023, the discussions were primarily focused on the following topics:
- a) Hybrid sharing of wireless broadband
 - b) Sustainability – exploring the implications for regulation and spectrum management
 - c) The role of 3GPP in the development of 6G standards
 - d) Evolving the Shared Access spectrum framework in light of user experience and future demands
 - e) Inputs to the Ofcom spectrum plan of work for 24/25
- 1.5 OSAB’s membership spans a wide range of sectors and backgrounds (academia, industry, government, regulatory). Members’ observations form an important part of the session. Round-the-table exchanges about developments in their sectors provide useful ideas and insights.

Future meetings

- 1.6 OSAB sets its agenda from meeting to meeting depending on progress made in particular areas, time available and prominent topics arising. It deliberately does not plan a year ahead to allow for flexibility and responsiveness to development(s) in the telecommunications sector.
- 1.7 To ensure OSAB members can provide the most valuable input, whilst recognising the workload expected from them should remain manageable, OSAB meetings are now being held three times per year instead of the historical four.

2. Highlights of OSAB Discussions

Hybrid sharing of wireless broadband

- 1.8 Ofcom gave a presentation explaining its support for a hybrid approach in the upper 6 GHz band to deliver greater benefits to consumers and businesses by enabling both Wi-Fi and mobile use of the band. The presentation used the upper 6 GHz band as an example of Ofcom's interest in hybrid sharing in several bands in the future, as spectrum becomes scarcer, and sharing is required to ensure optimal use of available spectrum.
- 1.9 OSAB was broadly supportive of the exploration of hybrid sharing options.
- 1.10 The Board emphasised the importance of considering peaks in data consumption as well as geography over overall data consumption when establishing network needs. It was also flagged that cellular networks require stringent Quality of Service (QoS) Service Level Agreements (SLA) which are incompatible with fully dynamic spectrum access.
- 1.11 A discussion took place on the possibility of splitting licences based on power or geographical area. It was noted that an inconsistent experience for consumers could impact technologies being developed and deployed in the UK in the future, beyond the telecommunications sector.
- 1.12 OSAB suggested that the opportunity cost of permitting licence exempt use in relation to full power uses should be carefully considered. It was also said that spectrum prices should be considered alongside geographical and technical considerations in order to equalise the scarcity of different uses of spectrum.
- 1.13 The board noted that while there was demand for flexible licences allowing higher amounts of spectrum to be used over the short term, this could lead to governance issues. The provision of a safe environment to discuss with competitors legally was flagged as an important facilitator of cooperation.
- 1.14 OSAB recommended that resilience should be prioritised over speed to ensure the viability of a hybrid licensing model between Wi-Fi and mobile network, in order to ensure a seamless transition between them from a consumer's perspective.

Ofcom consultation: Hybrid sharing: enabling both mobile and Wi-Fi users to access the upper 6 GHz band

We are exploring options that would enable 'hybrid sharing' of the upper 6 GHz band between mobile and Wi-Fi use. To achieve this objective, we published a consultation in July 2023 where we proposed to identify appropriate sharing mechanisms, encourage the development of technology-based coexistence solutions, and continue pressing for international harmonisation of hybrid sharing of the band.

The consultation, responses, and next steps can be found [here](#).

Sustainability – exploring the implications for regulation and spectrum management

- 1.15 Ofcom gave a presentation on the impact of wireless use on sustainability, a topic mentioned in the Wireless Infrastructure Strategy recently released by the Department for Science, Innovation and Technology (DSIT). Although Ofcom does not have any specific statutory duties concerning the environment imposed on it in carrying out our functions, changes in energy and transport are key to enabling the UK to reach its Net Zero goals, and these require spectrum.
- 1.16 A discussion took place around the energy efficiency of Massive MIMO. While a densified network at high frequency will require more base stations, the actual energy efficiency of the network relies on a range of factors, including distance between transmitters. Additionally, Massive MIMO is more energy efficient on a per-unit basis than other networks as it makes use of energy saving technologies, enabling granular shutting down of transmitters not in use for instance.
- 1.17 OSAB flagged that the legacy infrastructure of traditional fixed network operators tends to use older copper wiring, which requires more energy. On the other hand, it was noted that knock-on benefits from improvements in mobile and telecom communications should be considered, such as the impact of GPS and wireless connections on driving time and congestion.
- 1.18 While members noted that common mast providers are looking at generating carbon neutral power for their mast sites, it was suggested that there was lack of good solutions for off grid power in terms of energy efficiency given the level of reliability required.
- 1.19 Members discussed the necessity from Ofcom to incorporate sustainability into spectrum management choices. OSAB flagged risks of market disruption and innovation hinderance but noted that existing incentives for industry tend to foster short term objectives over long term goals such as sustainability.
- 1.20 OSAB highlighted the distinction between carbon neutrality and energy reduction, and the importance of identifying auditable metrics to properly assess the trade-off between climate objectives and other spectrum goals. Ofcom noted the work done by ARCEP and BEREC in the area.
- 1.21 OSAB suggested that regulations and incentives could facilitate the replacement of energy-inefficient consumer devices, it was however noted that this was not necessarily an issue for Ofcom to tackle alone.

DSIT Policy paper: UK Wireless Infrastructure Strategy

On the 11th of April 2023, the Department for Science, Innovation and Technology published the UK Wireless Infrastructure Strategy (UK WIS), outlining the government's vision for wireless infrastructure and its plan to harness it for economic and social benefits, including acceleration the transition to net zero.

The policy paper can be found [here](#).

The role of 3GPP in the development of 6G standards

- 1.22 Ofcom gave a presentation about the IMT 2030 Framework by the ITU, known as the 6G vision. The vision builds on 5G core elements and details features they want integrated into the network technology, such as artificial intelligence. Additionally, energy efficiency and cost effectiveness to enable global rollout would allow the technology to align with UN objectives.
- 1.23 OSAB said the 6G vision did not differ significantly from the existing 3GPP roadmap. It was noted however that features being developed by the research community in the UK include both 3GPP and non-3GPP elements, including the possibility to use terahertz and optical spectrum in the future.
- 1.24 OSAB discussed the necessity to strengthen government voices in the 3GPP process. Members said that the strength of the voice of large manufacturers within 3GPP means the standards it sets risks missing out on public policy benefits. It also noted that by giving weight to business use cases alongside public policy objectives, 3GPP allowed features to be deployed at scale.
- 1.25 Members noted that 3GPP could benefit from the inclusion of actors from the artificial intelligence and cloud sectors, enabling interoperability through standardization in those industries. It was also noted that structures representing the interests of small actors could be beneficial, although too many could dilute the strength of their individual voices.
- 1.26 While it was flagged that the market provides an incentive to develop and standardise features outside of 3GPP, members noted the benefit of the iterative 3GPP process, which allows features to be developed and delivered incrementally. The board also mentioned that policy provided a tool to ensure the inclusion of features beneficial to the public but which the market and 3GPP fail to standardise.
- 1.27 OSAB said potential users from every part of the supply chain being represented in the 3GPP standardisation process is crucial as long as every individual voice is heard.
- 1.28 Ofcom was encouraged to engage with standardisation processes and commended for its will and ability to enable experimentation of new ideas outside of 3GPP.

ITU-R Recommendation: IMT-2030 Framework (6G Vision)

In June 2023, the ITU-R finalized the 6G Vision Framework. IMT-2030 is expected to support enriched and potential immersive experience, enhanced ubiquitous coverage, and enable new forms of collaboration.

IMT-2030 is further expected to help address the need for increased environmental, social, and economic sustainability, and also support the goals of the Paris Agreement of the United Nations Framework Convention on Climate Change.

The recommendation can be found [here](#).

Evolving the Shared Access spectrum framework in light of user experience and future demand

- 1.29 Ofcom gave a presentation detailing some early findings of our Call for Input on Shared Access Licences (SAL) and explaining the wider context for the review. Colleagues explained that the 3.8 to 4.2 GHz band attracted the greatest amount of attention, in which lower power uses are licensed nationwide, as well as medium power uses, mostly in rural areas. The presentation highlighted Ofcom's commitment to finding ways in which access to spectrum for a wide range of users can be ensured in the long term as spectrum becomes scarcer, through effective sharing.
- 1.30 There was a consensus within OSAB to say Ofcom's SAL framework stood out internationally as an example of innovative regulation supporting innovation and that Ofcom had been an early mover in this space.
- 1.31 The board discussed use cases that could drive SAL demand in the future. Members suggested that removing the barriers to the provision of neutral host services could trigger demand from the enterprise sector, both to improve indoor coverage, and as an additional benefit to be offered as part of the business case for private networks. It was also noted that growth in augmented and virtual reality and high-definition live video links could drive demand for SAL (including for large bandwidths)) and that active antenna systems might also support new use cases, especially if this enabled higher power levels to be authorised. It was noted that there was ongoing work in CEPT on this issue, which Ofcom should remain engaged with.
- 1.32 Members were broadly supportive of Ofcom's efforts to increase automation in the licence application system to support a potential growth in demand, in line with feedback received during the consultation.
- 1.33 OSAB discussed the pricing structure of SAL, noting the balance Ofcom needs to strike between incentivising careful spectrum use, without being unduly prohibitive to innovators.
- 1.34 A discussion took place on ways to add flexibility to the licence allocation process. It was noted that placing a higher burden on users to coordinate in relation to their local spectrum environment could allow more flexibility, but it could be inadequate for users who are unable to independently assess their issues and adjust their equipment.
- 1.35 OSAB also addressed equipment availability in the 3.8 to 4.2 band. It was observed that, at present, the UK and Japan stood out in use of the band for 5G technology, although noting the ongoing discussions in CEPT might lead to a broader take up in the future. Consequently, the equipment ecosystem for the band remains in development. While equipment is available, individual devices might not function across the whole band, and can be unaffordable or insufficiently robust for some sectors.

Ofcom Call for Inputs: Evolution of the shared access licence framework

Introduced in 2019, the Shared Access Licence (SAL) framework sought to promote innovation by providing localised access to spectrum under a simple, low-cost framework.

We launched a call for input in March 2023 to explore what has been learned from these deployments and consider if and where improvements could be made.

The call of input can be accessed [here](#).

What are the key topics for spectrum managers to consider for the next 2-3 years?

- 1.36 OSAB members shared their thoughts on the following trends in spectrum policy:
- i) Challenges in improving 5G coverage in rural areas and indoors,
 - ii) Funding from Department for Science, Innovation and Technology, the Wireless Infrastructure Strategy, and the UKRI into academic research which could enable the UK to be a leading voice on 6G,
 - iii) The necessity to follow a pragmatic approach regarding the spectrum requirements of non-terrestrial networks, considering the sensitivity of incumbent users in relation to the relevance of new use cases,
 - iv) Incentivising spectrum sharing through coexistence studies and the establishment of a long-term roadmap aligned with other regulators and intended for industry use,
- 1.37 The board detailed key economic issues faced by industry which impede the efficient use of licensed spectrum. Ofcom was urged to assess and establish the necessary incentives for the densification of networks, as well as develop innovative ways to auction spectrum which better incorporate the challenges in utilising it. Additionally, OSAB suggested further consideration should be given to how operators can monetise spectrum and potential barriers to innovation.
- 1.38 Members explored ways Ofcom could leverage its position and tools to achieve better spectrum outcomes. The board suggested cooperation with other authorities and new provisions in licensing, annual licence fees, and merger authorisations could be means to facilitate deployment of infrastructure, support net zero objectives, and manage orbital debris.
- 1.39 Customer satisfaction with networks was mentioned as an area that could be better assessed and supported by Ofcom. Members emphasised the necessity to increase the visibility of use cases of spectrum and foster a narrative of social value around spectrum, especially in the context of the future deployment of 6G. Members also suggested Ofcom could gather relevant data through surveys, assessments of network efficacy, and crowdsourcing from the public as well as other public bodies.
- 1.40 Cristina Data gave a presentation on Ofcom's initial thinking with regards to the plan of work for the coming year. A range of projects were listed under five intended outcomes: Keeping the lights on (BAU); Spectrum available for innovation; Spectrum available for key sectors; Accommodate more users through more efficient spectrum use; Represent UK interests effectively in international conversations.
- 1.41 OSAB noted that the projects listed were broadly aligned with the topics raised by members.

A1. OSAB Terms of Reference

Roles and Responsibilities

- A1.1 Section 3 of the Communications Act, 2003 requires Ofcom to secure optimal use of the radio spectrum taking account of the different needs and interests of all users.
- A1.2 The Ofcom Spectrum Advisory Board was established by Ofcom on 19 May 2004 and is a continuation of a group originally established by the Government in the 1990s to advise on wireless and which transferred to Ofcom with the Radiocommunications Agency.
- A1.3 The role of OSAB is to provide independent, strategic advice to Ofcom on matters that directly, or indirectly, have a bearing on policy issues to do with future communications architectures; access methods; physical layer technologies; and spectrum services and applications. The provision of independent strategic advice will help Ofcom to carry out its remit.
- A1.4 In formulating its advice, OSAB is to consider the future communications landscape from technological, economic, and societal perspectives, consonant with Ofcom's statutory duty to further the interests of citizens in relation to communications matters.
- A1.5 In particular, OSAB is to advise on:
- a) Ofcom's spectrum strategy, major UK national allocation decisions, spectrum management, and the application of spectrum pricing and trading
 - b) Issues that are currently "beyond Ofcom's headlights", to which Ofcom should start to give attention
 - c) New communications technologies
 - d) New means of managing the radio spectrum and their implications for Ofcom
 - e) Whether Ofcom's current and developing policy stance is appropriate and where new policy might be needed
- A1.6 The OSAB may also be asked to advise on:
- a) The extent to which future wireless and fixed communications infrastructure and services may be complementary or compete with one another
 - b) New and novel technologies
 - c) Emerging uses of spectrum in various sectors, for example, transport, healthcare, and scientific research
 - d) Ways to measure and assess the effectiveness of spectrum management policies
 - e) The development of market-led initiatives
 - f) The balance between licence and licence exempt spectrum
 - g) The stimulation of innovation through spectrum policy
 - h) Trends in international relations

- i) Ways that spectrum policy could be used to further the interests of the citizen and consumer.

Membership

- A1.7 Members of OSAB should be drawn from a mix of commercial, academic, and consulting backgrounds, in order to address topics in a multidisciplinary manner, and to advise Ofcom on matters of strategic significance in such areas as future communications architectures, access methods, physical layer technologies, spectrum, services and applications.
- A1.8 Membership of OSAB will include ex-officio members from His Majesty's Government and relevant experts who work for Ofcom; such ex-officio members participate fully in discussions but reserve the right to abstain from agreement on substantive matters. All members shall be appointed by Ofcom, following the advice of the Group Director of Spectrum. The Group Director of Spectrum also seeks the approval of the Ofcom Chief Executive for the appointments.
- A1.9 OSAB shall have a quorum of 6 members, one of whom must be the Group Director, Spectrum Group or their designated Alternate and excluding ex-officio members. Members attendance through telephone or video link is acceptable for the purposes of determining a quorum.

Conduct of Meetings

- A1.10 An independent member (not an employee of Ofcom) will be appointed by Ofcom to chair OSAB meetings.
- A1.11 OSAB shall meet four times per annum. Ad-hoc meetings of OSAB can be arranged, if necessary, with the agreement of the Chair.
- A1.12 Where the Chair of OSAB considers it appropriate, matters may be considered in between meetings by email.
- A1.13 Papers shall be circulated at least 3 working days before each OSAB meeting. Extensions to this will be on an exceptional basis and must be agreed by the Chair.
- A1.14 To avoid any conflict of interest, members of OSAB will not have access to confidential information pertaining to Ofcom decisions affecting specific companies. This does not however preclude the discussion by members of potential Ofcom policies.
- A1.15 Persons other than Members are permitted to attend meetings for particular items if the Chair of OSAB agrees.
- A1.16 OSAB meetings will be supported by a Meeting Secretary and minutes and an action log will be prepared after each meeting.
- A1.17 The Terms of Reference shall be reviewed periodically, as, and when required by Ofcom. Any amendments shall be approved by the Ofcom Chief Executive, usually via the Ofcom Policy Management Board (PMB).

A2. OSAB Membership

External Members

Gavin Young (Chair)

Gavin's current role is as Head of the Fixed Access Centre of Excellence within Vodafone. He is responsible within Vodafone Group for the fixed broadband access strategy, architecture, and deployment practices across the 17 countries where Vodafone currently has fixed access assets.

Gavin was previously Head of Strategy and Planning at Cable & Wireless Worldwide, leading a team of architects responsible for the technology architecture and strategy. He had previously worked at Bulldog Communications (later acquired by C&W Worldwide) where he held a variety of responsibilities from product development through to network operations and CTO. Prior to that Gavin led the Access Architecture & Design team at BT.

Gavin was a founding director of the Broadband Forum where he was overall Technical Chair for twelve years. In addition, he has been co-chair of the UK21CN consultation's Broadband Group, chair of the UK NICC's DSL Task Group and vice-chair of the NICC Ethernet Access Task Group. Gavin also serves on the IET (Institution of Engineering and Technology) Communications Policy Panel, the Ofcom Spectrum Advisory Board (OSAB) and the Broadband Forum's executive advisory board. Gavin is a member of the IEEE, Fellow of the IET and Distinguished Fellow of the Broadband Forum.

Professor Mischa Dohler

Mischa Dohler is vice president of emerging technologies at Ericsson in the Silicon Valley. He is a Fellow of the IEE, the Royal Academy of Engineering, the Royal Society of Arts (RSA), the Institution of Engineering and Technology (IET); and a Distinguished Member of Harvard Square Leaders Excellence. He is a serial entrepreneur; composer and pianist with five albums on Spotify/iTunes; and fluent in six languages. He acts as policy advisor on issues related to digital, skills and education. He has had coverage by national and international press and media.

He is a frequent keynote, panel, and tutorial speaker, and has received numerous awards. He has pioneered several research fields, contributed to numerous wireless broadbands, IoT/M2M and cyber security standards, holds a dozen patents, organised and chaired numerous conferences, was the Editor-in-Chief of two journals, has more than 200 highly cited publications, and authored several books.

He was the Director of the Centre for Telecommunications Research at King's from 2014-2018. He is the co-founder of the Smart Cities pioneering company Worldsensing, where he was CTO from 2008-2014. He also worked as a Senior Researcher at Orange/France Telecom from 2005-2008.

Greg Bensberg

Gregory Bensberg is the Managing Director of Digital 3&4 Limited, the UK's main commercial public service DTT (Digital Terrestrial Television) multiplex, carry ITV and Channel 4 services to over 98% of UK households. He is a leading authority on both the technical and regulatory aspects of digital

broadcasting and has over 30 years' experience as a regulator and digital broadcast engineer. He is also the chair of the 5G Media Action Group's regulatory, spectrum and policy group.

He has previously worked as a policy and technical expert for Ofcom, the UK government, and the Independent Television Commission for over 20 years. He acted as a key technical and regulatory adviser to the UK government during the development of the UK government's switchover policy. He was also responsible for leading Ofcom's spectrum clearance programme (800 MHz and 2.6 GHz) which enabled the UK's 4G spectrum auction in 2013 and the development of the UK's UHF strategy.

Gregory is a chartered engineer and holds an MBA and BSc. He joined the ITC in 1992 after spells working for Marconi, the IBA, Quantel and Thames Television. He was awarded an MBE in 2014 for services to communications and media.

Wassim Chourbaji

Wassim Chourbaji is Qualcomm's Senior Vice President and Head of Government Affairs for Europe, the Middle East, and Africa. He oversees Qualcomm's public policy, regulatory affairs, and senior government relations in the region. Mr Chourbaji leads a senior team dealing with innovation, 5G, intellectual property, digital economy, spectrum, standardisation, data protection and anti-trust policy. Mr Chourbaji studied engineering and mathematics.

Peter Pitsch

Peter Pitsch currently consults for the C-Band Alliance. Peter Pitsch was Associate General Counsel at Intel Corporation, specialising in communications policy matters. Peter was Chief of Staff to the Chair of the FCC from 1987 to 1989 and Chief of Office of Plans and Policy from 1981 to 1987. From 1980-1981, Peter was a staff member of the Reagan Administration Transition Team.

Peter received a B.A. in Economics from the University of Chicago in 1973 and his J.D. from Georgetown University Law Centre in 1976.

Rosalind Singleton

Rosalind Singleton is a CEO, board chair, NED, advisor, and investor with over 30 years of experience in the technology sector. She is the CEO of Spring Fibre, an FTTH start up and the Chair of the Telecoms Supply Chain Diversification Advisory Council. The Council represents an opportunity to provide independent challenges and advice to the government in policy development and act as a voice for the industry on the topic of 5G supply chain diversification.

For the last five years Rosalind has been an active angel investor and mentor and has led several deals, focussing on tech businesses with a female founder. She is a member of the Angel Academe Advisory Board.

Rosalind joined UK Broadband in 2013 and was Managing Director from 2017 until it integrated into its parent company in 2019 following its delivery of the ThreeBroadband 5G launch network. She has previously held senior roles at BT Openreach, Cable and Wireless, Vodafone, various VNOs, and other international operators from start-ups to incumbents.

Rosalind is a member of the UK Government's Telecoms Supply Chain Diversification Advisory Council and Ofcom's Spectrum Advisory Board. She is an Independent NED on the board of Alphawave IP (Internet Protocol) Group PLC, a silicon IP business providing high speed connectivity solutions for global large and hyperscale customers.

Peter Hadinger

Peter Hadinger is the Chief Technology Officer at Inmarsat. Peter and his high calibre engineering team are developing next generation technologies and satellite infrastructure that will enable innovative connectivity services and solutions across land, sea and in the air. These services and solutions sustain operational, safety and mission critical applications for businesses and governments across the world.

After joining Inmarsat in 2011 to help develop the market-leading Global Xpress programme, Peter became President of the business unit responsible for US Government sales and programmes at Inmarsat and subsequently became CTO in late 2017. Prior to joining Inmarsat, Peter spent 30 years as a leader in technology development, engineering, and government spacecraft programmes at Northrop Grumman. He holds multiple patents in advanced communications technology and systems.

He also has a diverse regulatory and policy background, having successfully led industry efforts in the World Trade Organisation (WTO) Telecom Services Agreement, the Federal Communications Commission (FCC) World Radio Conference Advisory Committee, the President's National Security Telecommunications Advisory Committee, plus a one-year fellowship in the United States Senate.

Peter received his Bachelor of Science in Electrical and Electronic Engineering from California State Polytechnic University, an MBA with emphasis in finance strategic planning from George Mason University and serves on engineering advisory boards at Virginia Tech. He was inducted into the Cal Poly Pomona Engineering Hall of Fame in 2014.

Alastair Macpherson

Alastair Macpherson was the partner leading PWC's economic practice and specialising in the communication and other regulated sectors. He has advised numerous operators, regulators, and governments around the globe. A major part of his interest and work has focused on the debate defining the appropriate form of regulatory intervention in the case of market failure in the communications and technology sectors in the face of technology change. He also advises clients in other regulated sectors including posts, health, and water. Alastair has acted as an expert in regulatory, competition and arbitration proceedings including the UK Competition Commission, Competition Appeals Tribunal, European Commission DG Competition, and the London Court of International Arbitration.

Prior to joining PWC, Alastair worked at BT PLC where he held various roles in corporate finance, new businesses, and regulatory affairs.

David Meyer

David Meyer is a former central government Chief Information Officer and was previously a senior army officer in the Royal Corps of Signals. In the course of his career, he has worked in the UK Government digital and cyber risk fields, and on electromagnetic spectrum policy issues with Ofcom, industry, and the Government.

David chairs a private limited company, DMSL, trading as 'at800', and has been a member of the Ofcom Spectrum Advisory Board since 2009, acting as chair prior to Linda Doyle. He has also chaired an industrial technical body, the Spectrum Policy Forum, since 2016.

Dr Robert Pepper

Robert Pepper is Head of Global Connectivity Policy and Planning at Meta focusing on global, regional, and national infrastructure and connectivity including new technology development, deployment, adoption, and policy/regulation. Robert was previously Cisco's Vice President for Global Technology Policy, helping governments develop national digital strategies, address wireless and spectrum policy, security, privacy, and internet governance.

Pepper was Chief of the Office of Plans and Policy and Chief of Policy Development at the United States FCC for fifteen years, where he led teams designing and implementing the first U.S. spectrum auctions, developing policies promoting the development of the Internet, implementing telecommunications legislation, and planning for the transition to digital television. He also led the Office of Policy and Development at United States' National Telecommunications and Information Administration.

His academic appointments included faculty positions at the Universities of Iowa, Indiana, and Pennsylvania, and as a research affiliate at Harvard University. He is a member of the Board of Trustees of the Internet Society and the board of the US Telecommunications Training Institute and is a member of advisory boards at Columbia University and Michigan State University. He has chaired the US Department of State's Advisory Committee on International Communications and Information Policy and served on the US Department of Commerce's Spectrum Management Advisory.

Pepper received his BA and PhD from the University of Wisconsin-Madison.

Alastair Davidson

Alastair has spent over 20 years in the communications industry working in the mobile infrastructure, public safety, cable tv and fibre sectors, and is Chair of the Digital Infrastructure Working Group of the Digital Connectivity Forum (DCF), Board member of the European Wireless Infrastructure Association (EWIA), and Director of Strategy at Wireless Infrastructure Group (WIG).

At WIG, Alastair is responsible for strategy, regulation and public affairs, and until recently led the roll-out of 5G fibre connected small cells at WIG - an independent wireless infrastructure operator that has pioneered the neutral host model in the UK. The company builds and operates communication towers (masts) in rural and suburban areas together with indoor networks to improve mobile coverage inside buildings, stadiums and on city streets. The company is fully independent of any network operator and invests in higher capacity 'neutral-host' infrastructure that is made available to all mobile and wireless networks to use on an open and shared basis.

Alastair gained a first class degree in Engineering & Economics from Oxford University, and qualified as a Chartered Accountant, with an early career in management consultancy at Deloitte / Coopers & Lybrand.

Dr. Abhaya Sumanasena

Dr. Abhaya Sumanasena is a results-driven and influential leader with over 20 years of hands-on experience developing and delivering forward-spectrum strategies and policies. Abhaya is the Head of Policy and Regulation at Real Wireless (an independent wireless advisory firm) and the Chairman of the UK Spectrum Policy Forum (UK SPF), a cross-industry 'sounding board' to Government and Ofcom on future policy and approaches to spectrum.

Previously Abhaya led and delivered multimillion-pound strategic network capacity programmes at Three UK. At Ericsson, Abhaya provided technical leadership to deploy the UK's first HSDPA network. He has also played an influential role in maintaining UK propositions and developing spectrum policies at Ofcom. As a consulting leader, Abhaya provides leadership to multi-disciplinary teams to deliver projects and provide independent advice to global clients in the technology, spectrum, policy and regulatory areas.

Abhaya holds a PhD in Mobile Communications from the University of Surrey and an MSc from King's College London. He is a University Lecturer, a Chartered Engineer, a member of the IET and, as a volunteer, Chaired several IET local networks.

Dimitra Simeonidou

Dimitra Simeonidou is a Full Professor at the University of Bristol, the Co-Director of the Bristol Digital Futures Institute and the Director of Smart Internet Lab. Her research is focusing on the fields of high-performance networks, programmable networks, Future Internet, wireless-optical convergence, 5G/6G and smart city infrastructures. In the past few years, she is increasingly working with Social Sciences and Humanities on topics of climate change and responsible innovation. Dimitra has been the Technical Architect and the CTO of the smart city project Bristol Is Open. She is currently leading the Bristol City/Region 5G and Open RAN pilots.

Dimitra is a member of the DSIT Supply Chain Diversification Advisory Council, a founding member of UKTIN and has led major research projects funded by UKRI and the EC. She is currently coordinating the DSIT project REASON developing blueprint architectures and technologies for 6G.

She is the author and co-author of over 700 publications, numerous patents and several contributions to standards. She has been co-founder of three spin-out companies developing solutions for connected smart infrastructures.

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Cristina Data

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Raj Sivalingham

Raj Sivalingham is Head of Spectrum Policy at the Department for Science, Innovation and Technology. His career spans senior roles in industry, regulation and central Government. In industry, he worked in the space, defence and communications sectors. While at the former Radiocommunications Agency, he was responsible for regulatory policy for a number of spectrum using sectors. His previous roles in Government includes responsibility for civil space policy. He holds a Bachelor of Electronic Engineering Degree (Sheffield University) and an MBA (Imperial College).