

# INNOVATION AT THE HEART OF THE UK'S WIRELESS FUTURE AND OFCOM'S SPECTRUM STRATEGY

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Legal Briefings

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Following a [consultation](#) period which closed earlier this year, on 19 July 2021 Ofcom [published](#) its [spectrum management strategy](#) for the UK over the next ten years. The strategy prioritises the growth and innovation of wireless communication services, focusing on key areas, such as spectrum sharing, which have a critical role to play in fulfilling this vision.

Given the increasing reliance on wireless communication services across a range of sectors, the limited availability of spectrum as a natural resource, and the fact that specific spectrum bands are needed for particular purposes, Ofcom is required to carefully manage this valuable finite resource to ensure its use is optimal and in the best interests of the UK.

## **A SPECTRUM MANAGEMENT VISION FIT FOR THE FUTURE**

The spectrum strategy sets out how Ofcom intends to achieve this aim, helps to ensure that Ofcom's short and medium term decisions fit within a longer term framework and enables spectrum users to manage their own longer-term decisions. The strategy called for a shift in Ofcom's approach to spectrum management since the previous 2014 iteration, given that wireless communications have changed significantly since then (informed by changes in the market, uptake of new and evolving technologies and demand from businesses and individuals).

The principle objectives of the new spectrum strategy are to:

- drive continued improvements and growth for 'mass market' wireless services (such as Wi-Fi and cellular mobile services);

- ensure businesses, public sector and other organisations with specialist requirements are able to access the wireless communication or spectrum options they require;
- provide increased flexibility in spectrum use to support innovation, with appropriate assurances for continued use; and
- ensure efficient use of spectrum.

## **AREAS OF INCREASED FOCUS: ACHIEVING THE VISION**

Ofcom identified three key areas of increased focus (set out below) to help achieve this vision. These areas sit alongside its long-established approach to spectrum management which relies on market mechanisms (such as spectrum pricing and auctions) to determine the use of spectrum where possible, whilst also undertaking regulatory action where necessary.

1. **Promoting spectrum sharing:** encouraging spectrum users to share access to spectrum with others, where possible. As innovation stimulates greater demand for spectrum, Ofcom considers spectrum sharing as a key tool to ensure it is used efficiently. Alongside Ofcom's flexible authorisation options, advances in technology are expected to assist by providing new sharing tools and creating the opportunity for a new approach to sharing spectrum in higher frequencies. In particular, Ofcom aims to promote greater spectrum sharing by encouraging:
  - i. use of better data and more sophisticated analysis when assessing the conditions for sharing spectrum;
  - ii. wireless systems that are more resilient to interference from neighbouring systems; and
  - iii. an efficient balance between the level of interference protection given to one service and the flexibility for others to transmit.

Ofcom also considers there may be circumstances where the application of differential pricing may be appropriate to allow more efficient use of spectrum (recognising that it will not suit all cases). However, setting different protection pricing levels can be complex so the regulator will consider this on a case by case basis, looking at creating the right incentives without distorting competition or preventing fair access to spectrum.

In timely guidance for communications regulators wanting to support innovative mobile services, on 23 June 2021 the Global System for Mobile Communications (the "[GSMA](#)") [published its own policy paper on spectrum sharing](#). Whilst the GSMA acknowledges the potential that spectrum sharing holds, it clarifies the *complimentary* nature of that role relative to exclusively licensed mobile spectrum on which the global success of mobile services relies (supporting widespread services and the certainty needed for long-term heavy network investment and high quality service). The paper also provides guidance on successful spectrum sharing, including with reference to both the nature of the proposed spectrum band (i.e. where mobile operators are seeing growing demand and ensuring the band is usable in sufficient quantities in areas and at times where required) and the sharing framework itself (i.e. who can share the band as well as related usage rights and limitations, with operators often favouring a simple sharing framework that is investment friendly and supports reliable, high quality mobile services).

2. **Supporting wireless innovation:** making spectrum more easily accessible by a broad range of users by:

- i. making more spectrum available for innovation before its long term future use is certain;
- ii. supporting innovation in new wireless technologies, including influencing international standards and technical conditions so that they are sufficiently flexible to support new uses; and
- iii. expanding Ofcom's work to understand, assist and inform the broad range of organisations who may benefit from wireless technologies in the future.

3. **Licensing to fit local and national services:** supporting the growing diversity of wireless services and providers by considering further options for localised spectrum access when authorising new spectrum use. Local access can suit a range of businesses

and specialised services which do not need access to spectrum coverage across the whole of the UK (such as airports and remote farms). Whereas licensing to cover larger areas, including national licences, is more appropriate to support wider coverage for public mobile services.

There are also a range of existing activities undertaken by Ofcom which remain essential for achieving its spectrum management vision as well and are likely to be influenced by the focus areas above. These include: (i) reviewing emerging demand across different sectors (as the role of spectrum continues to evolve to support the changing nature of the services it enables); (ii) making spectrum available for new uses (such as supporting trials for various commercial applications of beyond line of sight drones and assessing the impact of spectrum options for drone wireless control and data delivery); (iii) developing automated spectrum management tools (including exploring fully automating access to shared spectrum bands); (iv) taking a leading role in international spectrum forums; and (v) taking proportionate and robust enforcement action.

## **EMBEDDING THE STRATEGY IN PRACTICE**

The spectrum strategy does not rely on a single set of deliverables or decisions. It sets out the approach to future spectrum management challenges and to drive long term change that is expected to provide a strong foundation for new and improved services throughout the UK.

To ensure the strategy remains effective in practice, among other initiatives, Ofcom will: (i) take it into account when prioritising and approaching future spectrum management work (including as part of its proposed 'spectrum roadmap' which will set out future spectrum plans across a range of sectors and bands); (ii) track progress (including a report setting out how spectrum is allocated, the extent to which it is shared and the different ways it can be accessed); and (iii) engage in global conversations on future spectrum challenges.

## **FUTURE TECHNOLOGY TRENDS**

The focus of the spectrum strategy on innovation and growth will no doubt be welcomed by industry stakeholders across the wireless communications sector. As the use of new and emerging technologies continues to evolve, the wide range of potential benefits for future spectrum management will become clearer as well (such as the use of artificial intelligence and blockchain technologies as part of automated spectrum management tools). Watch this space.

## **KEY CONTACTS**

If you have any questions, or would like to know how this might affect your business, phone, or email these key contacts.



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