Spectrum regulation in a changing world

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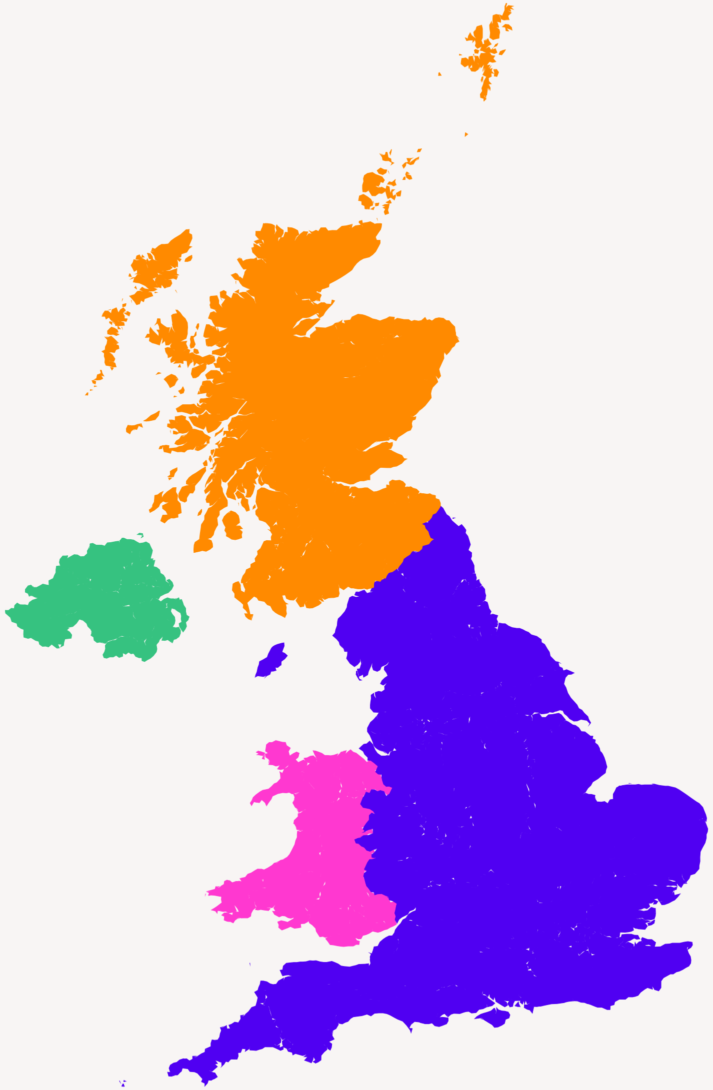
UK connectivity at a glance



Coverage data as of Spring 2025.

Fixed Networks

Homes Passed

74% Full Fibre

86% Gigabit (Full Fibre + Cable)

97% Superfast (> 30 Mbps)

<1% below 10 Mbps

Mobile Networks

> 99% 4G outside premises

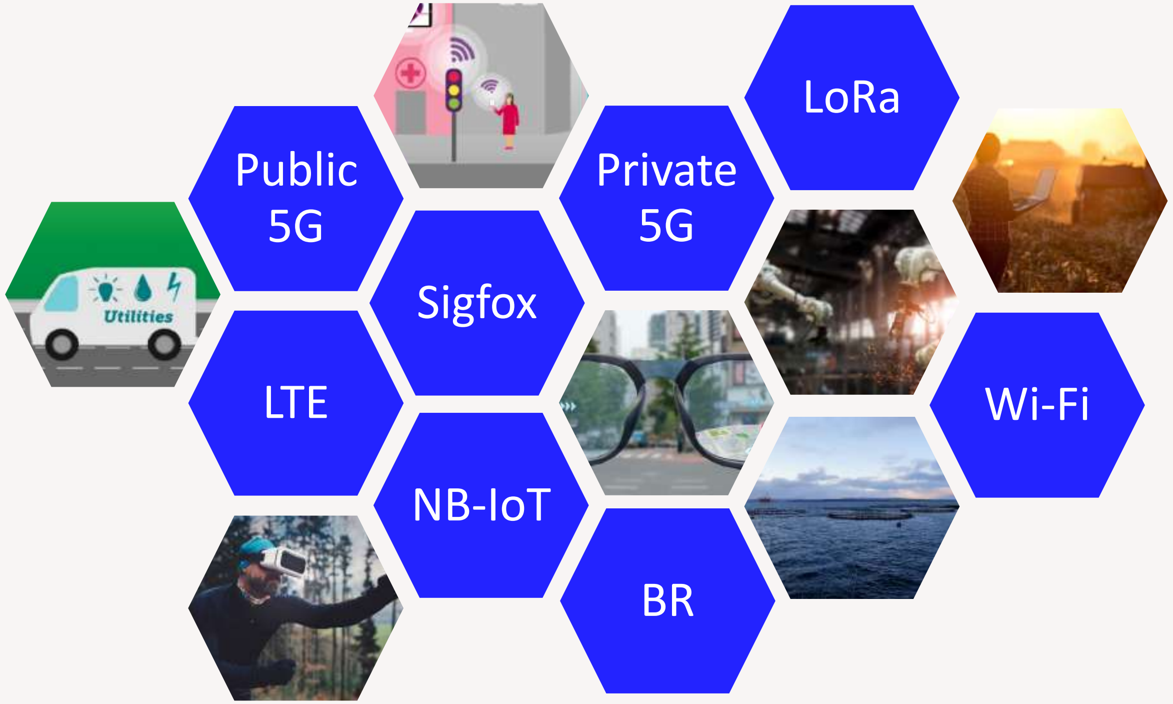
> 96% 5G outside premises

95% 4G geographic coverage WIP

Authorising D2D in IMT bands

c. 500 C-Band Shared Access Licences

Different users and use cases want different technologies...



In the UK, spectrum frameworks are enabling different types of networks to serve different user needs

Spectrum sharing underpins initiatives to support wireless broadband growth in the UK

Shared Access for Local Networks

- Launched in UK in 2019
- Enabling local networks in 3.8-4.2 GHz for industry and enterprise

mmWave (26 and 42 GHz)

- Local licences available across the UK
- Auction in areas of high population completed October 2025

1.4 GHz Supplementary Downlink

- Co-existence with adjacent channel satellite terminals

Framework to support Satellite Connectivity

- Statement on Direct-to-Device published September 2025

Effective spectrum management is helping to drive innovation and growth

Spectrum management needs to be increasingly flexible and agile

Spectrum sharing is underpinning many initiatives and enabling more efficient use of spectrum

6 GHz Spectrum (5925–7125 MHz)

Ofcom consultation published February 2025

Lower 6 GHz (500 MHz of spectrum)

- Already available for indoor Wi-Fi in UK
- Consulting on allowing higher power outdoor Wi-Fi via AFC database control

Upper 6 GHz (700 MHz of spectrum)

- Target for both mobile and Wi-Fi proponents (but mobile and Wi-Fi don’t share easily)
- Mobile has higher impact on incumbent users – typically requiring clearing rather than coexistence
- Europe also exploring shared use between both Mobile and Wi-Fi:
  - UK contributing to technical work which is ongoing in CEPT
  - Work expected to continue over next two years.

Upper 6 GHz – why does it matter in UK?

Lots of spectrum

- Would significantly increase available mobile and/or Wi-Fi spectrum
- Excellent for capacity in high demand locations but relatively poor for coverage / building penetration

Wi-Fi

- Could offer more very wide channels (80, 160, 320 MHz) → very high-capacity applications
- Particular interest from the enterprise market
- Interest in accessing the band as soon as possible (using existing Wi-Fi equipment ecosystem)

Mobile

- Ecosystem under development but not expected before 2028–2030 (needs harmonisation) → less urgency around ongoing technical work
- UK demand currently 2030/2031 → would more than double capacity on congested 5G macro sites
- But relatively poor at getting indoors (worse than the main 5G band at 3.5 GHz)

Ofcom consultation proposes shared use of upper 6 GHz band and a phased approach to release

Phase 1 – Wi-Fi: Consultation Feb 2025

- **Propose** opening up the entire band for low power indoor Wi-Fi as soon as possible – based on existing Wi-Fi technical standards
  - additional sharing mechanisms to be implemented later
- **Outline options** for future sharing approach (pending European harmonisation outcome), likely either:
  - Indoor/outdoor split, or
  - Prioritised spectrum split
- **Explore possible mobile authorisation options** (e.g. auction in high demand areas)

Phase 2 – Mobile: Linked to Harmonisation decision (likely post 2028)

- **Implement enhancements to Wi-Fi** to facilitate sharing with mobile (once harmonised)
- **Confirm sharing approach,** likely either
  - Indoor/outdoor split, or
  - Prioritised spectrum split
- **Open access to mobile** post harmonisation on a shared basis with Wi-Fi

Aim is to provide certainty of access to Wi-Fi and mobile, enable early realisation of benefits and incentivise industry to get on with harmonisation

Spectrum sharing increasingly important to support connectivity needs of the future

- Agenda Item 1.7 at WRC-27 (spectrum bands for IMT) is already proving very challenging
  - Finding cleared and globally harmonised solutions likely to be very difficult

Region 1	Region 2	Region 3
4 400-4 800 MHz		4 400-4 800 MHz
7 125-7 250 MHz 7 750-8 400 MHz	7 125-8 400 MHz	7 125-8 400 MHz
14.8-15.35 GHz	14.8-15.35 GHz	14.8-15.35 GHz

- International spectrum regulatory frameworks are being increasingly tested
  - Discussions and negotiations becoming more complex
  - We need to ensure that regulatory frameworks remain fit for purpose
  - Flexibility required both domestically and internationally

- Spectrum sharing at the heart of promoting efficient use of spectrum, enabling innovation and delivering benefits to businesses and consumers

Thank you

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