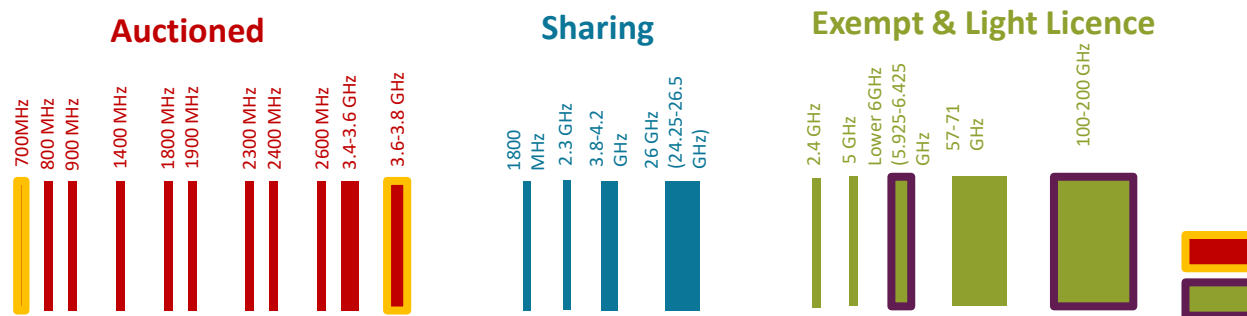


Ofcom is already seeking to identify whether additional demand is likely to arise for specific frequency ranges or authorisation models

Spectrum is critical for wireless. We have sought to make sure that spectrum bands, with different characteristics, can be accessed by a wide range of players, including MNOs, system integrators and directly by businesses, to deploy the connectivity solutions that meet their requirement. Our consultation process will seek to identify how demand may change in future, and the spectrum implications.



Auction: Spectrum mostly authorised on a nationwide basis. MNOs can offer slices of their network to meet business requirements.

Sharing: Low cost licences enabling localised access to spectrum. Can be used for private networks and to extend coverage.

Exempt and light licence: Access to spectrum with low barriers is an important enabler of innovation. Wi-Fi technology is currently common across many businesses.

6G Research – Ofcom perspective on spectrum

- The key need from a spectrum point of view is efficient and effective radio networks, there is a need for research into enhancing spectral efficiency across all frequency bands
- 6G will be deployed in existing frequency bands currently used for mobile, we need ways of effectively migrating these bands from previous generations to 6G (such and improved DSS)
- We should not assume 6G will be deployed first in ‘new’ bands. ‘New’ bands should only be identified if there is a clear demand that cannot be satisfied in exiting spectrum
- There is already a significant amount of spectrum allocated for mobile in Low, Mid, and High (i.e. mmWave) bands. Low and Mid bands are extensively used and additional Low and Mid band spectrum is coming on stream following the recent 700 MHz, 3.6-3.8 GHz auction. 1175 MHz (almost 30 %) of spectrum under 4 GHz is already allocated to mobile – including the 400 MHz of shared access spectrum at 3.8-4.2 GHz brings this to just under 40%.
- It is very unlikely that further Low frequency spectrum can be made available for the foreseeable future given the Governments decision on renewal of the DTT licences to 2034 (notwithstanding the new revocation clause). As well as DTT there is important use by other services (e.g. PMSE, Railways, Utilities, SRDs, etc) in Low frequency spectrum that also needs to be accommodated. Coverage issues cannot be solved by throwing more Low frequency spectrum at the problem, we need innovative ways of using a range of different spectrum bands and technologies to provide the services people need, where they need them.
- A significant quantity of mmWave spectrum was identified at WRC-19. We need to look at how networks can make effective use of this as it is made available (e.g. at 26 and 40 GHz)
- THz spectrum (e.g. > 100 GHz) is interesting for applications requiring extremely wide bandwidths but has development challenges and is most likely some way off. We have already facilitated innovation in this spectrum by releasing over 18 GHz of EHF spectrum above 100 GHz
- Shared access spectrum needs to play a key role in 6G (in bands such as 3.8 – 4.2 GHz, 26 GHz, etc). Mobile networks will increasingly need to share spectrum resources with other users and technologies – finding ways to allow better more effective sharing is vitally important.
- And the evolution and integration of a range of different access technologies (e.g. Wi-Fi, Satellite, etc) is vital for the development of 6G