5G Spectrum Positions

5G has the potential to support significantly faster mobile broadband speeds and expand mobile data usage – as well as to enable the full potential of the Internet of Things.

However, for 5G to reach its full potential, mobile operators are dependent on getting more widely harmonised spectrum across three frequency ranges.

Three key ranges

Sub-1 GHz

1-6 GHz

AND ABOVE

6 GHz

The speed, reach and quality of 5G services will depend on the support of governments and regulators for timely access to the right amount and type of spectrum, and under the right conditions. This spectrum access will be a critical component in bringing 5G technologies to market.

Which bands are emerging as key to 5G?

3.5 GHz

While certain spectrum, such as the 3.5 GHz range, is being readied for 5G, other bands are already under discussion. Importantly, bands above 24 GHz are being considered for 5G, both through the WRC and through existing mobile allocations.

26 GHz and 28 GHz

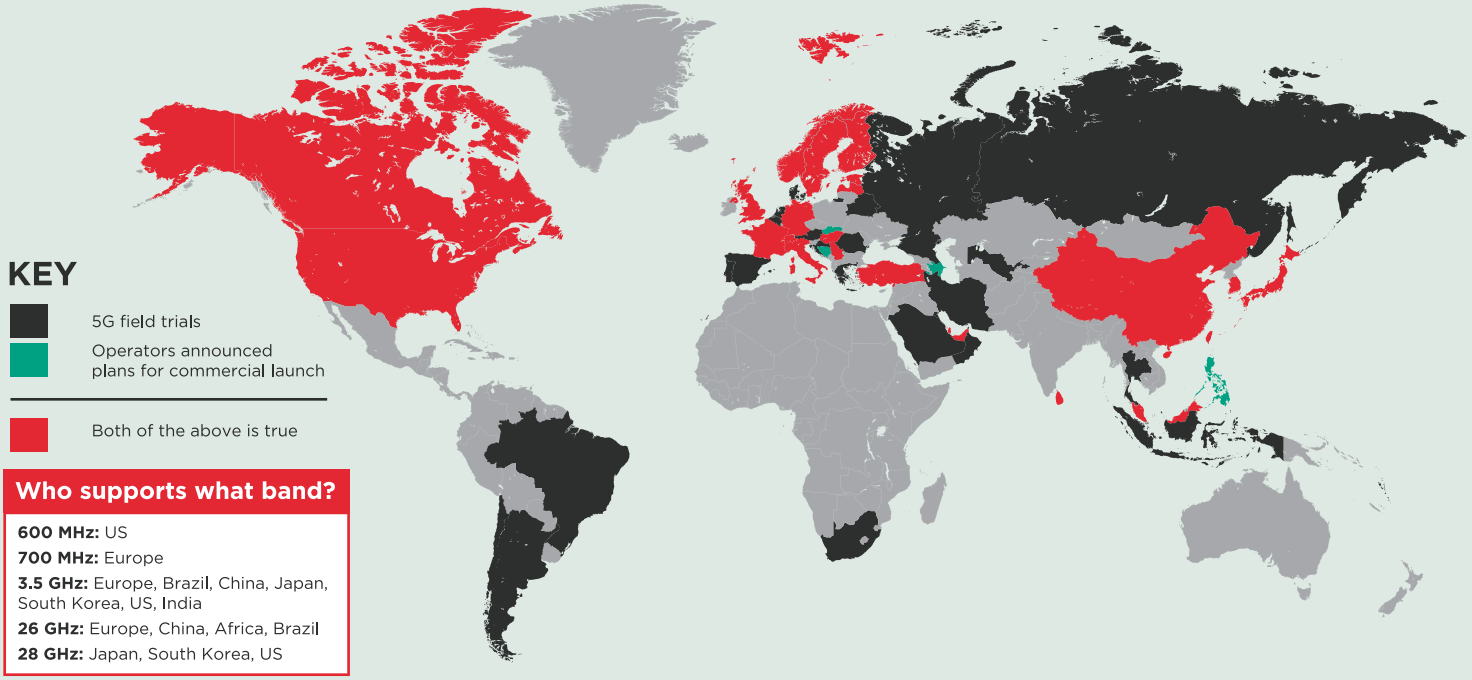
The 26 GHz and 28 GHz bands, along with the development of 40 GHz, have emerged as the most likely candidates to make the ultra-high-speed vision for 5G happen. The 26 and 28 GHz bands are adjacent, allowing economies of scale and facilitating early equipment availability for all or parts of both bands.

Some early-adopter markets will license the 28 GHz for 5G, including US, Japan and Korea. 28 GHz has therefore been part of the focus of technology development for 5G around the world.

Agenda Item 1.13

Access to the 26 GHz and 40 GHz bands are part of the WRC-19 process and the work of Agenda Item 1.13 (AI 1.13). This Agenda Item looks at spectrum for mobile broadband between 24.25 and 86 GHz. In total, 11 bands are under consideration. At this point in the WRC-19 cycle, the 26 GHz band has the highest priority for the GSMA.

INTEREST GROWING ALL OVER THE WORLD



Who supports what band?

600 MHz: US
700 MHz: Europe
3.5 GHz: Europe, Brazil, China, Japan, South Korea, US, India
26 GHz: Europe, China, Africa, Brazil
28 GHz: Japan, South Korea, US



LONG-TERM PLANNING IS CRUCIAL

Planning for 5G is a long-term effort. Spectrum for the next generation of mobile broadband will be used for decades to come, and it is being defined right now, irrespective of when the first commercial 5G services will be launched.

Decision-making now, at the advent of 5G in the world, can ensure all countries have access to the appropriate higher frequency bands for 5G when the time comes to launch the service in their countries.

THE GSMA'S KEY 5G SPECTRUM POSITIONS ARE:



Significant amounts of new widely harmonised mobile spectrum is needed to ensure 5G services meet future expectations and deliver the full range of potential capabilities.

5G needs spectrum within three key frequency ranges to deliver widespread coverage and support all use cases.

The three ranges are:

Sub-1 GHz
1-6 GHz
AND ABOVE
6 GHz

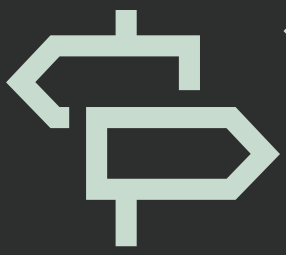


WRC-19 will be vital to realise the ultra-high-speed vision for 5G with widely harmonised spectrum and low cost devices.

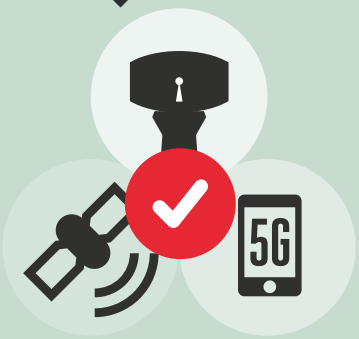
Licensed spectrum should remain the core 5G spectrum management model. Unlicensed bands can play a complementary role.



Technology neutral spectrum licences are essential. They allow current bands to be used for 5G thus ensuring spectrum efficiency is maximised.



There is significant potential for the coexistence of 5G and other services (e.g. satellite and fixed links) in higher frequency bands (e.g. above 24 GHz).





It is important that governments and regulators support the need for 5G spectrum at international spectrum discussions, including WRC-19 and its preparatory meetings. Immediate action is essential due to the lengthy timeframes involved in making new mobile spectrum available.



Governments and regulators need to adopt national policy measures to encourage long-term investments in 5G networks.

Read the full position at:
https://www.gsma.com/spectrum/5g-spectrum-policy-position

Also read "Mobile Industry view on WRC-19 Agenda Item 1.13" and "Considerations for the 3.5 GHz IMT range" at:
https://www.gsma.com/spectrum/wrc-series/

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