

Spectrum available for mobile use in the mid-band range is increasing as more regulators license 3.5GHz

September 2022

Janette Stewart

We were appointed by our client, a wireless industry trade association based in the USA, to study the availability of 5G-suitable spectrum in 13 countries, with a particular focus on the important mid-band spectrum (between 3GHz and 7GHz). In this range, spectrum has been identified internationally for International Mobile Telecommunications (IMT) use, which regulators are typically making available on a licensed basis. In addition, there is spectrum above 5925MHz that is supported by the latest generation of Wi-Fi technology, prompting regulators to make spectrum available on an unlicensed basis with lower power limits, suitable for shared access, short-range, use.

We surveyed information on current and future mobile spectrum via published sources

We initially reviewed the total spectrum that is available and the spectrum that is being investigated for future mobile use (for example, through award of mobile licences in upcoming auctions) in each of the 13 countries of interest. The aim of the project was to understand overall mobile spectrum availability by country according to the following three broad categories:

- low band (below 2.6GHz)
- mid band (between 3GHz and 7GHz)
- high band (spectrum available for mobile use in the mmWave frequencies).

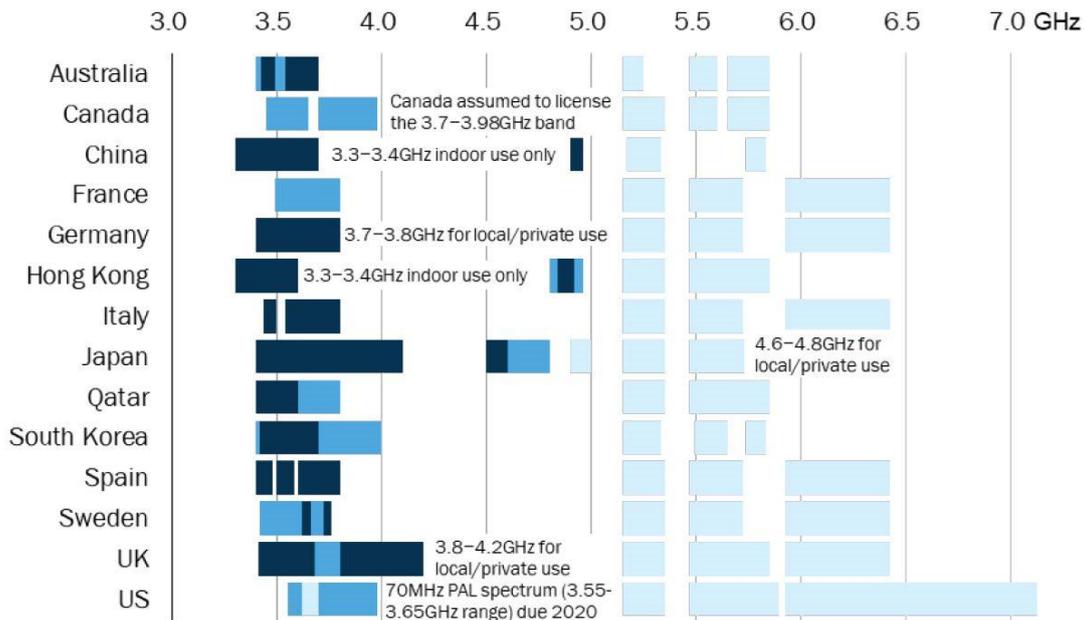
In a separate study, we assessed the latest plans for 5G licensed mid-band spectrum because this is the main band being used for 5G roll-out in the benchmark countries.

From these studies, we produced detailed profiles of mobile spectrum availability in each country to assess whether the spectrum was available on a nationally licensed basis for mobile use, or licensed for mobile use on a local basis, or available on an unlicensed basis. Using the results of our analysis, we provided a set of the main findings to our client regarding plans for mid-band spectrum in a range of countries and recommendations for the US mobile market.

Our study found that mid-band spectrum forms a key part of 5G deployment in all of the markets surveyed

Of particular interest was that several countries of those considered in our study were making more mid-band spectrum available for mobile use (Figure 1).

Figure 1: Comparison of mid-band spectrum availability



Key: ■ Currently assigned for mobile use ■ Scheduled for assignment to mobile by the end of 2022 ■ Confirmed or considered for unlicensed use

Source: Analysys Mason

The average amount of mid-band spectrum was projected to increase to 660MHz from the end of 2020 to 2022 for the five leading nations (at the time of producing the report, the five leading nations in terms of mid-band availability were Canada, China, Japan, South Korea and the UK). This average includes the total of nationally licensed, locally licensed and unlicensed spectrum up to 7GHz. Our totals include spectrum that is available in several countries for private 5G use. In particular, several regulators in Europe have set aside spectrum specifically for private 5G networks, and are increasingly wanting to accommodate these private 5G spectrum assignments in the 3.8–4.2GHz bands. At the time of producing the report, regulators in several countries were considering whether to make spectrum available in the upper 6GHz range for mobile use on a licensed, or unlicensed, basis. In a few countries (including the USA), a decision has already been made for the 6GHz band to be for unlicensed use.

Several countries have completed assignments that were planned at the time of producing our report.

For questions relating to mid-band spectrum assignment, please contact Janette Stewart (janette.stewart@analysismason.com).