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Ericsson submission to Radio Spectrum Management's WLAN use in the 6 GHz band Discussion Document

June 2021

Introduction

- Ericsson welcomes the opportunity to respond to Radio Spectrum Management's WLAN use in the 6 GHz band Discussion Document (**Discussion Document**).
- Spectrum to support 5G is fast becoming a measure of global competitiveness.
- Our research indicates that demand for mobile broadband isn't abating.
- For example, globally[1] mobile network data traffic grew 46% percent between Q1 2020 and Q1 2021.
- And it is not forecast to slow down. In 2026 5G networks will carry more than half of the world's mobile data traffic with average monthly usage per smartphone forecast to reach 35GB. [2]
- By the end of 2021 there will be 580m 5G subscriptions which translates to an average of 1m new 5G subscriptions added each day.
- The New Zealand Commerce Commission's Annual Telecommunications Monitoring Report 2020[3] found that the amount of data consumed over mobile networks by retail customers and the rate of usage continued to grow in 2020.
- A pipeline of spectrum in low, mid and high bands to meet forecast growth in demand for 5G should remain a key spectrum policy priority.
- Provided below is a market update on the first two years of 5G and responses to selected questions raised in the Discussion Document.

Market Update[4]

- The first two years of 5G have exceeded all expectations.
- At the end of 2020 there were 220 million 5G mobile subscriptions globally.
- There are now 160 live commercial 5G networks and 703 5G devices commercially available.
- In South Korea, 5G covers 95% of the population, with over 20% of all subscriptions on 5G and 52 per cent of all mobile data traffic carried on 5G networks, with average monthly mobile data at 26 GB.
- By the end of 2021 we forecast over 580 million 5G subscriptions, with 25% of the population covered by 5G.

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[1] https://www.ericsson.com/en/mobility-report/reports/june-2021

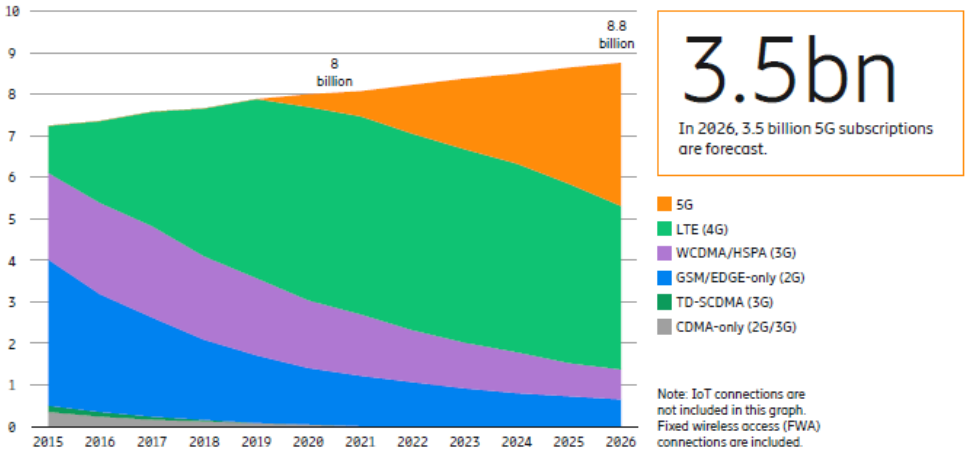
[2] Ibid

[3] Microsoft Word - 2020 Annual Telecommunications Monitoring Report(4048746.1) (comcom.govt.nz)

[4] https://www.ericsson.com/en/mobility-report/reports/june-2021, https://gsacom.com/

- 5G is the fastest scaling technology to date with 5G subscriptions estimated to reach 1 billion 2 years earlier than 4G.
- Figure 1[5] below shows mobile subscriptions by technology with 3.5 billion 5G subscriptions forecast by 2026.

Figure 1: Mobile subscriptions by technology (billion)



[1] GSA (April 2021).
[2] A 5G subscription is counted as such when associated with a device that supports New Radio (NR), as specified in 3GPP Release 15, and is connected to a 5G-enabled network.

Response to Selected Questions Raised in the Discussion Document

Question 1

Do you agree with RSM's proposal on making the 5925 - 6425 MHz available for WLAN use?

Ericsson recognises the need for new spectrum allocations by many and varied interested parties.

To meet forecast demand, we understand mobile network operators (**MNOs**) require additional mid-band spectrum in the medium term for 5G.

We also acknowledge new spectrum allocations for radio local area networks (**R-LAN**).

Ericsson considers that both of these objectives can be achieved as part of an allocation process for the 6GHz band by allocating part of the band for RLAN and reserving another part for 5G.

Ericsson considers that an allocation of 5925-6425 MHZ for R-LAN and 6425-7125 MHz for IMT would result in a balanced approach.

[5] https://www.ericsson.com/en/mobility-report/reports/june-2021

Question 2

What are your views on the potential future use of 6425 - 7125 MHz for new applications (e.g. Wi-Fi or IMT)?

The 6GHz band is a strong candidate to meet the forecast additional spectrum needs in the 2025 - 2030 timeframe.

Multiple 100MHz wide channels in mid bands will be required per operator in the 2025-2030 timeframe.

Ericsson considers mid-band spectrum, and in particular 6GHz, as essential to realise the 5G vision.

With limited prospect of new 100MHz allocations of contiguous channels below 4.2 GHz in New Zealand, Ericsson believes the 6GHz band will be critical to provide additional spectrum for operators to meet projected forecast growth on mobile data demand.

In December 2020, Coleago released a report entitled "**IMT spectrum demand – Estimating the mid-bands spectrum needs 2025-2030 timeframe**"[6] which was endorsed by the GSMA (**GSMA Report**).

The **GSMA Report** concluded that:

- An additional 1-2GHz of spectrum in the upper mid-bands would enable operators to deliver ITU-R, IMT-2020 user experience city-wide and also deliver smart city capabilities in an economically feasible manner.
- In rural areas, upper mid-band spectrum can provide the high capacity needed for fixed wireless access broadband, where mmWave can't reach or where there is restricted output power.
- Multiple 100MHz wide channels in mid bands will be required per operator, in the 2025-2030 timeframe, as noted above.
- Deploying 5G in wide channels (e.g. 100MHz and greater) drives down the cost / bit and lowers total cost of ownership.

It is Ericsson's view that:

- There is a need of 1-2 GHz of additional mid-band spectrum in the 2025-2030 timeframe.
- Potential spectrum in the mid-band range, for this time frame, is very limited, and an allocation in the 6 GHz band is critical.
- Upper mid-band spectrum offers a good combination of propagation and capacity for cities, with significant bandwidth and reasonable propagation characteristics.
- An allocation of 5925-6425 MHZ for R-LAN and 6425-7125 MHz for IMT would result in a balanced approach.

[6] GSMA | IMT Spectrum Demand: Estimating the mid-bands spectrum needs in the 2025-2030 timeframe - GSMA Europe