

Ericsson submission to Radio Spectrum Management's 3.3 GHz Regional & Non- national use in New Zealand Discussion Document

August 2021

Introduction

- Ericsson welcomes the opportunity to respond to Radio Spectrum Management's 3.3 GHz Regional & Non-national use in New Zealand 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, globally¹ 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.
- In New Zealand, the Commerce Commission's Annual Telecommunications Monitoring Report 2020³ found that the amount of data consumed over mobile networks by retail customers and the rate of usage continued to grow in 2020.
- It is Ericsson's view that 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 for the New Zealand Government.
- The GSMA supports this view, stating that 5G needs significant new harmonised spectrum including awarding at least 80-100MHz of contiguous spectrum per operator in initial 5G mid-bands (e.g. 3.5 GHz) and at least 800 MHz per operator in initial millimetre wave (mmWave) bands (e.g. 26/28 GHz).⁴
- Provided below is a market update on the first two years of 5G and responses to selected questions raised in the Discussion Document.

Market Update⁵

- 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.

¹ <https://www.ericsson.com/en/mobility-report/reports/june-2021>

² Ibid

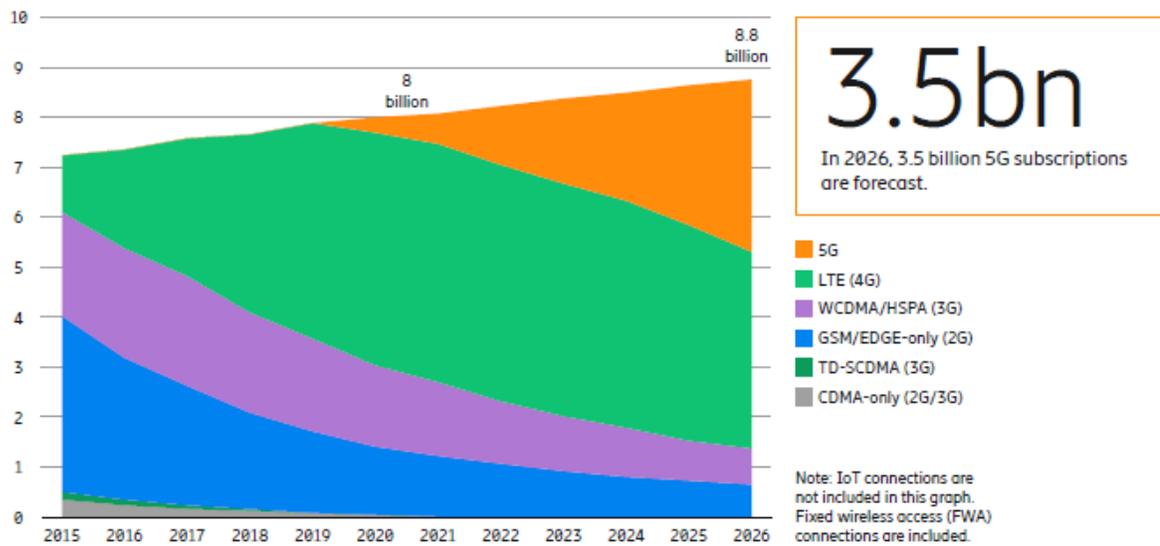
³ [Microsoft Word - 2020 Annual Telecommunications Monitoring Report\(4048746.1\) \(comcom.govt.nz\)](https://www.comcom.govt.nz/annual-report/2020-annual-telecommunications-monitoring-report)

⁴ <https://www.gsma.com/spectrum/wp-content/uploads/2021/04/5G-Spectrum-Positions.pdf>

⁵ <https://www.ericsson.com/en/mobility-report/reports/june-2021>, <https://gsacom.com/>

- 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.
- 5G is the fastest scaling technology to date with 5G subscriptions estimated to reach 1 billion 2 years earlier than 4G.
- Figure 1⁶ 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.

⁶ <https://www.ericsson.com/en/mobility-report/reports/june-2021>

Responses to Selected Questions Raised in the Discussion Document

Question 1

Do you agree that the 10 MHz between 3.40 – 3.41 GHz should be included with the 3.4 - 3.8 GHz band (the 3.5 GHz band) that will be made available for national use?

Ericsson agrees that the 10MHz between 3.40 - 3.41GHz should be included with the 3.4-3.8 GHz band (the 3.5GHz band) that is proposed to be made available for national use.

Question 2

What is your view on using the 3.3 - 3.4 GHz band for regional broadband and/or private networks? Are there other use cases of this band that should be considered?

Ericsson supports the entire Band 78 (3.3GHz to 3.8GHz) be made available for nationwide allocation for IMT.

This would release 350MHz of spectrum to be auctioned for IMT assuming 50MHz remains allocated to Maori interests.

Such a structure would ensure:

- that the three major mobile operators could obtain a contiguous 100MHz block of Band 78 spectrum.
- maximum network performance for mobile operators⁷ and consequentially maximum overall utilisation of the spectrum asset.

Question 3

Do you agree with our assessment of current spectrum use and potential impacts?

In general yes, however as noted Ericsson supports allocation via nationwide management rights. If 3.3 -3.4GHz spectrum is not allocated as a nationwide management right then there should be a requirement to synchronize TDD operations with the nationwide management rights above 3.4GHz.

If synchronization is not a requirement then a guard band should be implemented within the 3.3GHz - 3.4GHz spectrum range. There should be no requirement for the nationwide management rights in the 3.4-3.8GHz allocations to provide a guard band.

⁷ The largest bandwidth carrier supported under the 5G New Radio standards is 100MHz.

Question 9

What equipment options and standards should we consider for the 3.30 – 3.40 GHz band? If we adopt multiple standards how should we manage potential interference issues between the technologies while minimising inefficient use of spectrum?

The equipment options and standards developed in the 3.3GHz to 3.4GHz band should align and comply with 3GPP technical standards TS38.104 (5G New Radio standard).

Ericsson supports the synchronization requirements that were applied for interim allocations replicated when national management rights are allocated in the 3.6GHz to 3.8GHz band.

Not aligning equipment options and standards in the 3.3GHz - 3.4GHz band or relaxing the synchronization requirements would create a need for guard bands which is a highly inefficient use of spectrum.

Question 10

Do you agree that we should seek to permit all three use cases, indoor, local and regional uses in the 3.3 GHz band ? Do you agree with our mix of use? If not which cases should we permit?

For co-existence of multiple use cases in the band to be successful more stringent technical requirements to manage operational and the equipment requirements would be required, including mitigating complex interference management challenges for national rights holders.

This needs to be avoided as it can imply bespoke equipment requirements for the New Zealand market or onerous deployment regulations to ensure co-existence