



PUBLIC VERSION

5 May 2021

The Manager
Spectrum Management Outlook and Strategy
Spectrum Allocations Branch
Australian Communications and Media Authority

By email: spectrumworkprogram@acma.gov.au

To the Manager

Re: Five-year spectrum outlook 2021-26

TPG Telecom Pty Ltd (TPG) welcomes the opportunity to provide input into the above consultation.

[CIC begins]

[CIC ends]

A Spectrum priority and TPG spectrum requirements

TPG's strong view is that the top priority over the next couple of years is to ensure the industry has access to sufficient quantum of C-band spectrum.

It is therefore disappointing to see the ACMA's 3700-4200 MHz planning outcome where only 100 MHz will be released for wide area broadband (WABB) use, and 200 MHz of premium 5G spectrum will be made for unproven and unspecified local area broadband (LABB) use.

TPG believes that the LABB apparatus licences will simply incentivise land-grab behavior, and not reveal genuine highest valued use of this spectrum. We discuss this more in **Section B** below.

Furthermore, it is also disappointing to see that the technical discussions around exercising NBN's unused 3.4 GHz spectrum in inner metro areas is likely to result in this premium 5G spectrum being severely crippled to a point where macro deployment is impossible. It is troubling to see that this is another data point demonstrating a clear trend that the ACMA operates under an unspoken priority of 'protect the NBN' over the spirit of its mandate under the Radiocommunications Act, which can be summarised as to ensure that scarce spectrum resources are not wasted. We discuss this more in **Section C** below.

[CIC begins]

[CIC ends]

[CIC begins]

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[CIC ends]

We note the AMTA submission, which we endorse and provides many third-party sources of expected data growth, for example, the cited Ericsson study suggests data growths of 50%. We also note that Telstra has publicly stated that it experienced a 40% data growth rate on its mobile network.¹

[CIC begins]

[CIC ends]

[CIC begins]

[CIC ends]

[CIC begins]

[CIC ends]

Given the ACMA's planning outcomes in the 3700-4200 MHz band, we believe there is a high degree of risk that the band will be fragmented, and in some scenarios TPG will need to redeploy and/or duplicate network equipment if it were unable to acquire the spectrum frequencies it desires. [CIC begins]

[CIC ends]

B 3700-4200 MHz planning outcome

Given the above, it is therefore very disappointing to read the ACMA's 3700-4200 MHz planning outcomes paper, the ACMA's letter dated 31 March 2021 in response to AMTA's letter, and to hear the ACMA team speak on 29 April 2021. Our understanding of the ACMA's position is that it believes the mobility services have sufficient 5G spectrum, and that the ACMA has considered the different avenues of demand for spectrum and judged other uses have priority over the needs of mobility services.

Regardless of whether the process of planning is more art than science, there must be very strong and transparent justifications for the ACMA to decide that the needs of proven uses and the needs of mobility services that generate multi-billion dollar economic benefits directly (with much greater indirect benefits) is trumped by the needs of unnamed parties and unproven uses which the ACMA hears about in a general manner.

Furthermore, it is very puzzling that the ACMA would experiment in this spectrum band with new Area Wide Licence (AWL) types where there is clearly more demand than there is supply. This latter point cannot be understated, and the demand for spectrum licensed allocations demonstrated in the recent mmWave auction is highly relevant. This makes allocating these AWLs in a fair and transparent manner without using an auction process, like the 26 GHz and 28 GHz AWLs, problematic.

¹ See: [https://itwire.com/telecoms-and-nbn/telstra-launches-\\$200-million-fund-to-improve-regional-coverage-over-next-four-years.html](https://itwire.com/telecoms-and-nbn/telstra-launches-$200-million-fund-to-improve-regional-coverage-over-next-four-years.html)

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The justifications the ACMA has provided to us to date about its decision is not compelling when framed in this context. This band is important, its high value, and there must be crystal clear rational backed with hard facts to decide the tangible needs are less than the more speculative needs.

Besides the broader policy issues, there is also a technical basis upon which we believe AWLs are a less preferable to spectrum licensing. The fact is, there is a massive geographic dead zone in the 2300 MHz band to manage adjacent network interference between NBN and Optus. Furthermore, a significant portion of the NBN 3.4 GHz spectrum, which is unused and covers major Australian metropolitan cities, is going to remain under-utilised because of adjacent network interference issues.

Because TDD networks are difficult to manage from an interference manage perspective, it is difficult to anticipate how much more difficult it would become when AWLs are introduced. There is every reason to suggest that there will be significant area denial issues in the 3800-4000 MHz spectrum in all the major metropolitan areas. This would be a very poor use of scarce spectrum resources, namely the resource of highest value – C-Band.

Nonetheless, TPG agrees that there ought to be some spectrum that the ACMA could experiment in, a type of regulatory sandbox to measure the weight behind the case for there being some justification to incentivise a more dynamic way to use (or share) spectrum. However, we disagree that the premium 5G band is the right band to experiment in for the reasons outlined above.

An alternative is the NBN 3.4 GHz inner-metro carve out area is designated for LABB use and AWLs, and the 3700-4000 MHz range is freed up for WABB use. This appears to be a far superior solution where the risk of waste is decreased compared to the status quo position if that spectrum will be as severely compromised as is proposed. We discuss this in the section below.

C NBN 3.4 GHz inner metro spectrum

The direction the 3.4 GHz TLG is heading leads to a poor outcome if the goal is to ensure spectrum is not wasted.

We understand that based on recent TLG studies, the most likely position the ACMA would adopt from a technical framework perspective is to protect NBN at all costs with the consequence that the intended 3.4 GHz metro carve out is heavily crippled to a point where it would be impossible to deploy this spectrum for WABB use.

TPG is disappointed by this anticipated conclusion because this is another data point in a series of spectrum decisions where the ACMA operates under a clear mandate to protect and insulate the NBN at the expense of every other stakeholder. This mandate is sometimes explicit, for example with respects to the 26 GHz band and 3.4 GHz NBN licence fee, and sometimes implicit, for example in the 3.4 GHz TLG and potentially the 850 MHz expansion band.

In regard to the NBN 3.4 GHz carve out spectrum, it is difficult to accept that the ACMA is willing to protect the NBN even though it uses spectrum in an inefficient manner. It is a problem that NBN has the sole ability to correct but appears unwilling. The consequence is a significant portion of the 3.4 GHz spectrum is denied for WABB use.

There can be no doubt that the NBN is an inefficient user of spectrum. For example, our internal analysis shows that in greater Sydney, NBN serves about 33 FWA services per MHz of spectrum. [CIC begins] [CIC ends]. The difference in efficiency is undeniable, no matter how much of a margin of error given to tilt the comparison in NBN's favor.

Furthermore, we understand that the core reason that NBN is such an inefficient user of spectrum is because it has cell-locked user-equipment and has no known roadmap to upgrade its FWA technology to 5G. These problems are entirely within the NBN's control to fix, yet there are neither political nor regulator pressures to

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ensure that the NBN has the right incentives to move to more efficient means of operating its FWA network.

In the meantime, it is the rest of industry that suffers because it is the rest of industry that bears the opportunity cost. Ultimately, this hidden inefficiency is paid for by consumers.

Within this context, the ACMA must take a bold leadership position and seriously consider whether this course of action is consistent with the object of the Radiocommunications Act. We find it implausible that the ACMA will affirm that it is.

In addition, it is further undeniable that when it comes to spectrum licence fees, there is a policy for NBN and a different policy for everyone else. NBN is effectively gifted its 3.4 GHz spectrum by the Government and given a free one-year option to continue to squander the inner metro portion of its 3.4 GHz spectrum. In contrast, commercial operators must compete for spectrum licences at auction. The ACMA cannot ignore the fact that Australia has high spectrum access fees relative to international benchmarks.

We recognise that the ACMA is directed by the Minister with respect to pricing of NBN's licences. Nonetheless, putting this together with the ACMA's planning decision in the 3700-4200 MHz band, we want to spotlight the hidden consequences of these policy decisions is a reduction in incentives for commercial operators to make investments.

D Conclusion

While the broader policy question surrounding the NBN is not something that the ACMA can address without the Minister's endorsement, spectrum planning decisions are clearly within the ACMA's mandate.

Fundamentally, we believe the practice of "drip feeding" spectrum is strategically short-sighted and this is very relevant in the 3700-4200 MHz planning decision. We note that one of the reasons why we are looking at 3700+ MHz spectrum is that the amount of spectrum made available in the 3.6 GHz auction was insufficient for industry needs, and hence we are now having a debate about 3700+ MHz.

The path that the ACMA has chosen may lead the mobiles industry lobbying the ACMA for additional C-band spectrum in 12-24 months. By which point, the ACMA may find that it is very complicated to clear out the 3800-4000 MHz band.

TPG suggests that instead of experimenting with the 3800-4000 MHz spectrum, the ACMA makes the NBN 3.4 GHz carve out its designated regulatory sandbox because the likelihood that WABB deployment will be made possible is nil. This appears to a better outcome overall within the constraints the ACMA have (or plans to) imposed.

Yours sincerely

TPG Telecom Ltd

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