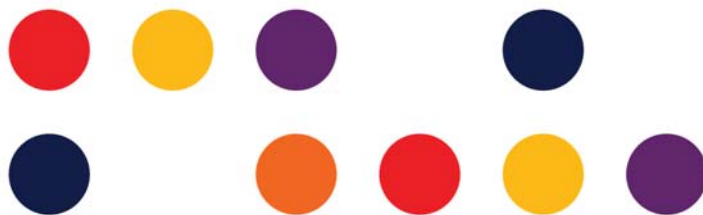


# Draft allocation and technical instruments for the 3.4/3.7 GHz bands auction: Consultation paper

## ACMA

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Public version



## Submission

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TPG Telecom welcomes the opportunity to respond to the ACMA's Consultation Paper titled *Draft allocation and technical instruments for the 3.4/3.7 GHz bands auction* (February 2023) (**Consultation Paper**).

The ACMA consultation reflects an important milestone towards the allocation of additional 5G spectrum. In our view, there are key aspects of the allocation instruments and auction design where the ACMA should take a different approach.

To support the object of the *Radiocommunications Act 1992* (**Act**), we believe:

1. The ACMA should include 2.3 GHz band holdings in its application of the allocation limits. Alternatively, the ACMA should set a lower allocation limit of 120 MHz for Sydney and Melbourne and 160 MHz for the remaining metropolitan and regional areas.
2. The ACMA should undertake the primary stage for 3.7 GHz metropolitan area licences as a first and discrete phase of the auction. The 3.7 GHz regional lots should be auctioned in a second phase, with the remaining 3.4 GHz lots auctioned in a third phase.
3. To support contiguity, the ACMA should ensure winning licensee(s) of 3.7 GHz spectrum are automatically assigned the frequency range adjacent to their existing holdings of 3.6 GHz band spectrum.
4. The ACMA should include a public interest statement for the purpose of licence renewals of 3.7 GHz band licences.

TPG Telecom supports 7-year licence terms for all licences, to align with the 2030 expiry date of existing licences in the C-band.

TPG Telecom supports the submission on this same consultation from the Australian Mobile Telecommunications Association (AMTA).

### 1. ACMA options for allocation limits

TPG Telecom agrees with the ACMA's proposal to implement an allocation limit for the 3.4/3.7 GHz bands auction and only consider a bidder's spectrum licensed holdings for which the bidder is the licensee, for the purpose of applying allocation limits to a bidder. We also support the ACMA's confirmation that affiliation rules only apply when there is a relevant agreement between parties in relation to the spectrum the subject of the auction.

However, we do not support the options for allocation limits expressed in the Consultation Paper. The ACMA should count spectrum holdings in the 2.3 GHz band when applying the allocation limits.

This means the options in the Consultation Paper would be:

- **Option 1:** 140 MHz limit in both metropolitan and regional areas in the cross-band frequency range of 3.4-3.8 GHz and the 2.3 GHz band (2302-2400 MHz).
- **Option 2:** 140 MHz limit in metropolitan areas and 160 MHz in regional areas in the cross-band frequency range of 3.4-3.8 GHz and the 2.3 GHz band (2302-2400 MHz).

***ACMA should assess 2.3 GHz band separately from other mid-band spectrum***

In the Consultation Paper, the ACMA states (page 56):

*...any near-term differences in equipment availability across these bands are of limited relevance, because in the medium to longer term these bands will become more substitutable. In this context, therefore, we consider all mid-band spectrum to be at least partially substitutable.*

While we agree with the ACMA's comment generally, technical considerations related to the 2.3 GHz band should be elevated, and separated from, any broader considerations related to all mid-band spectrum. Such an approach would allow a true assessment of substitutability, which will show the 2.3 GHz band is fully substitutable with the 3.4-3.8 GHz band.

TPG Telecom commissioned a report from Mike Wright of Quadrature Pty Limited with respect to these matters (see **Annexure A**). The report concludes (page 22-3):

- *"...these bands [i.e. 3.4, 3.6 and 3.7 GHz] offer similar coverage and bandwidth for network use as well as standards support and device availability as each other".*
- *"Frequency Division Duplex (FDD) configuration of these spectrum bands [i.e. 1800 MHz, 2100 MHz and 2.6 GHz] limits capacity and performance compared to other TDD band configurations [i.e. 2.3 GHz]."*
- *"the propagation range of 2.3 GHz is superior to the 3.4-3.8 GHz bands and therefore leads to a number of other advantages in terms of coverage range, depth and capacity per unit of spectrum."*
- *"...3GPP standards and roadmap support, RAN vendor hardware and roadmap support, chipset and device support for 2300 MHz makes this band's ecosystem support about the same as the 3.4-3.8 GHz band for 5G."*

Further, the ACMA states *"while there are differences in how FDD and TDD systems operate they are both capable of supporting new technologies such as 5G and active antenna systems."* This comment does not factor in that massive MIMO beamforming antennas are not currently available for 1800 MHz, 2 GHz and 2.5 GHz spectrum. While this may change in the future, as it stands today, massive MIMO is currently only available for use on 2.3 GHz and C-band spectrum. The significance of this capability is that it accounts for most of the capacity

gain that TDD enjoys over FDD bands – in fact, the intrinsic capacity benefits of 5G over 4G are much smaller than those due to the massive MIMO beamforming antennas alone.

From a utility perspective, the TDD configuration of the 2.3 GHz band, together with its propagation range and equipment availability, demonstrates it is fully substitutable with spectrum in the 3.4-3.8 GHz bands.

In the low band, MNOs are deploying 5G networks using different spectrum bands (i.e. 700 MHz, 800 MHz and 900 MHz). The approach there is spectrum across the sub-1 GHz band is considered substitutable. In the same respect, 2.3 GHz band spectrum should be grouped with the 3.4/3.7 GHz band.

The ACMA claims examples of allocation limits applied in other jurisdictions reflect its proposed approach. However, it is difficult to make a like-for-like comparison between Australia and other jurisdictions. For example, the Consultation Paper refers to Sweden's 2021 auction of 3400-3720 MHz spectrum. This was a sequential auction where 3.5 GHz spectrum, then 2.3 GHz spectrum was auctioned. This is different to the circumstances in Australia, where 2.3 GHz spectrum is already allocated.

Notwithstanding, in Sweden, there were four bidders, with 320 MHz available in the 3.5 GHz band and 80 MHz in the 2.3 GHz band. If a bidder (or bidders) bid for 80 MHz in the 3.5 GHz band but was unsuccessful, they could bid for the whole 80 MHz in 2.3 GHz band prior to any other bidder bidding for the 2.3 GHz band. This rule was utilised in the auction with one bidder securing 120 MHz of the 3.5 GHz band, two bidders securing 100 MHz in the 3.5 GHz and one bidder, utilising the aforementioned rule, securing 80 MHz of the 2.3 GHz band. That is, the Swedish approach yielded an outcome where the quantity of spectrum across the 2.3 and 3.5 GHz bands was broadly equal across the four bidders.

Further, a comparison with the approach to allocation limits in other jurisdictions does not take into account what is happening in the Australian mobile market. Consideration of the specific circumstances in Australia is required to ensure the object of the Act is met. In Australia, Optus is rapidly deploying 2.3 GHz spectrum for wide-area coverage and 5G capacity. Further, Optus' 2.3 GHz 5G network has better propagation than its 3.4 GHz 5G network. These matters can readily be confirmed by the ACMA.

Given the overwhelming evidence, there is a clear case for the ACMA to include the 2.3 GHz band spectrum holdings in the application of allocation limits.

### ***Proposed allocation limits lead to inefficient outcomes***

Although the ACMA's analysis of the allocation limits options against its objectives references the monopolisation risk, the ACMA's assessment does not factor in the risk of duopoly outcomes and the negative effects this will have on competition.

The risk of duopoly outcomes will be heightened if the ACMA decides to disregard 2.3 GHz holdings, despite clear evidence of substitutability, and in circumstances where one MNO has substantial holdings of 2.3 GHz band spectrum in metropolitan areas.

The impact of either outcome is an entrenched imbalance in spectrum holdings. [c-i-c]

This does not lead to the efficient allocation and use of spectrum and does not promote competitive markets. This is overall inconsistent with the object of the Act.

With respect to including 2.3 GHz holdings, the ACMA states (page 57):

*We would also need to freshly consider the appropriate quantum of the allocation limit and how such limits might be implemented through our auction design, which may require further time and potentially further consultations which could have implications on the proposed timing of this spectrum allocation.*

We believe this is inconsistent with the legislative framework and the ACMA should give primary consideration to meeting the objects of the Act. The ACMA should not avoid making the right decision because further consultation may be required. The ACMA has time to conduct the auction, noting the *Radiocommunications (Spectrum Re-allocation – 3.4 GHz and 3.7 GHz Bands) Declaration 2022* provides a reallocation period of 5 years.

### **Alternative approach to allocation limits**

Notwithstanding, if the ACMA considers it is impractical to count 2.3 GHz band holdings in the allocation limit, an alternative approach is to have a lower allocation limit in Sydney and Melbourne.

TPG Telecom recommends the ACMA set an allocation limit of 120 MHz in Sydney and Melbourne, and 160 MHz for the remaining metropolitan and regional areas, in the cross-band frequency range of 3.4-3.8 GHz. This allocation limit achieves the objectives set by the ACMA and the objects of the Act.

Specifically:

- *Efficient allocation and use of the spectrum:* This allocation limit strikes the appropriate balance between the risk of unsold lots and the risk of inefficient allocation outcomes, compared with the options in the Consultation Paper.
- *Support digital connectivity in regional Australia:* Consistent with Option 2 in the Consultation Paper, due to the decreased risk of unsold lots (compared with Option 1), there is an increased possibility the spectrum will be allocated and used in regional Australia.
- *Promote competitive markets:* This allocation limit decreases the risk of significant imbalances of 5G spectrum holdings (C-band and 2.3 GHz spectrum) as an outcome in key metropolitan markets, and therefore impacts the ability of MNOs to compete against each other on a forward-looking basis. [c-i-c]

## **2. Prioritising allocation of metropolitan areas licences consistent with objects**

TPG Telecom supports the ACMA conducting the primary stage of the auction for 3.7 GHz licences in metropolitan areas as a first and discrete phase of the auction. The 3.7 GHz regional lots should be auctioned in a second stage, and the 3.4 GHz lots should then be auctioned in a third stage.

Allocating both regional area and metropolitan area products for the 3.7 GHz band in the same primary stage could lead to inefficient outcomes. The regional area lots should be considered complements to the metropolitan area lots and the auction rules designed to reflect this.

As proposed, the auction rules mean, for example, that a bidder could acquire no spectrum in Sydney, yet be forced to buy some spectrum in Regional NSW (i.e. outer Sydney). Without complementary metropolitan holdings, the spectrum in Regional NSW has limited economic value and ultimately may not be used – an example of the exposure problem that characterises this type of auction, where withdrawal of demand can be difficult.

Combining the 3.7 GHz metropolitan and regional area lots in the primary stage means inefficient outcomes could occur, which are inconsistent with the object of the Act. Any residual risk that regional lots will be unsold can be address through a higher allocation limit of 160 MHz for those areas. The auction rules should maximise the chance of an efficient allocation by prioritising 3.7 GHz metropolitan lots, through the ACMA conducting the primary stage for metropolitan area products first.

## **3. Shorter 3.7 GHz licence duration provides opportunity for defragmentation**

TPG Telecom supports a short licence duration of approximately 7 years for the 3.4 GHz and 3.7 GHz licences.

Given developments over the last 12 months, TPG Telecom no longer supports a long licence term of 20 years for the 3.7 GHz licences. A short licence duration of approximately 7 years for the 3.7 GHz licences would align with the expiry of existing C-band licences and provide a 'reset' point where the ACMA could force a defragmentation of the entire band.

The ACMA has already set the precedent for a shorter licence term in this band. The ACMA adopted this approach to the allocation of 3.6 GHz licences, where those licences were issued with 11-year terms to align with existing 3.4 GHz licence expiry dates.

A key driver for TPG Telecom's position is that we are not optimistic commercial negotiations will lead to defragmentation in the C-band, and the ACMA's draft allocation instruments creates unacceptable fragmentation and exposure risk.

Therefore, in the unfortunate situation where this auction leads to an inefficient outcome, aligning all licences in the 3.4-3.8 GHz band to an expiration date of 2030 provides an opportunity for the ACMA to reset and resolve fragmentation in the C-band at a later date, if the band is not already defragmented (i.e. inefficient use of spectrum persists).

If the band is ultimately defragmented and fully optimised, the ACMA can undertake a renewal process instead of a reset, if it believes that is the best course of action at that time. In the event licensees cannot defragment the band, the only realistic backstop option to optimise the entire 3.4-3.8 GHz range is an ACMA-led 'reset' of the band. In that case licence boundaries can be modernised, and licensees have an opportunity to reorganise themselves into contiguous holdings to maximise the utility of the spectrum. The only way this can be possible is if the 3.7 GHz licence terms are aligned to existing licences in the band.

A further benefit of having a 'reset' option available is by that time, the ACMA would better understand whether the AWLs allocated above 3.8 GHz reflect an efficient allocation and use of spectrum. If it were not, the ACMA could consider allocating those spectrum frequencies for wide-area broadband use.

Similarly, a reset option provides a natural point where the ACMA could optimise the use of Urban Excise spectrum to support wide-area broadband use, and thereby freeing up additional 5G spectrum that is currently underutilised.

Finally, the 2030 timeframe is likely to align well with the next anticipated technology refresh the industry will have to undertake. This means the potential for disruption is minimised.

If the ACMA foregoes this option and bifurcates this band into licences that expire in 2030 and licences that expire in 2043, then the next available point in time to force a defragmentation will be deferred to 2043. Put bluntly, this band could be inefficiently structured for another 20 years. This would not be promoting the object of the Act.

#### **4. Contiguity across 3.6 GHz and 3.7 GHz band holdings leads to most efficient outcomes**

TPG Telecom believes the auction rules should support contiguity across 3.6 GHz and 3.7 GHz band holdings. The allocation of licences in the 3.7 GHz band should be regarded as a continuation of the 3.6 GHz allocation process. We believe contiguity is a must and results in higher utility than fragmenting the spectrum. This leads to the most efficient allocation and use of spectrum, consistent with the object of the Act.

We support the ACMA promoting contiguity by implementing auction rules which will allow winning licensees of 3.7 GHz band spectrum to automatically be assigned the frequency range adjacent to their existing holdings of 3.6 GHz band spectrum. The ACMA can then proceed with the proposed assignment stage for the remaining frequency ranges.

As it stands, we are concerned the proposed auction rules, and specifically the assignment stage, provides an opportunity to prevent licensees from maximising the full use of their 5G spectrum holdings. **[c-i-c]**

The ACMA's proposal, which does not consider adjacent incumbents in the 3.6 GHz band, is inconsistent with its proposal to allocate leftover lots to winning licensees. This latter proposal recognises the benefits of having contiguous holdings.



The ACMA should impose an auction design that minimises further fragmentation, particularly given the scarcity of TDD configured 5G spectrum. It should adopt guaranteed contiguity for incumbents with adjacent spectrum in the 3.6 GHz band who manage to acquire spectrum in the 3.7 GHz band.

## **5. Public interest statement for licence renewals**

TPG Telecom supports the inclusion of a public interest statement for both the 3.4 GHz and 3.7 GHz band licences.

While we appreciate the ACMA is guided in all its decisions by the object of the Act, the inclusion of a public interest statement is beneficial as a safeguard to focus the public benefit considerations on the renewal of the specific licence at hand. This is an important addition, regardless of whether the licence is issued for a short period of approximately 7 years or a longer period of 20 years.