



nbn submission to the ACMA: Draft allocation and technical instruments for the 3.4/3.7 GHz bands auction

28 April 2023

This is a public version of **nbn**'s submission. **nbn** has also provided a separate confidential submission to the ACMA. Where **nbn**'s confidential submission potentially discloses or relies on confidential detail of **nbn**'s priorities, requirements, plans or forecasts, **nbn**'s public submission provides a non-confidential summary of **nbn**'s position on that question or matter.



Introduction

Thank you for the opportunity to comment on the Draft Allocation and Technical Instruments for the 3.4/3.7 GHz Bands Auction Consultation Paper, February 2023 (**Consultation Paper**).

nbn was established in 2009 as a Government Business Enterprise, to provide fast, reliable and affordable connectivity and to enable Australia to seize the economic opportunities before it and service the best interests of consumers. It remains the principal responsibility of **nbn** to operate and continue to build and upgrade the **nbn** network in accordance with the expectations of the Government.

nbn is required by legislation to operate as a wholesale only, open access, non-discriminatory operator. In doing so, **nbn** has developed wholesale products that Retail Service Providers (**RSPs**) use as inputs to their own retail products. This is intended to level the playing field in the Australian telecommunications industry, enhancing competition and innovation, and providing greater choice for customers across the country.

Under the *Telecommunications Act 1997 (Cth)*, **nbn** is the default Statutory Infrastructure Provider (**SIP**) across all of Australia. This means **nbn** has an obligation to connect all premises to broadband services that meet specified requirements (except in areas where another carrier is the nominated SIP). Under the SIP regime, where it is not reasonable for the SIP to connect premises to a fixed-line network, it must provide fixed-wireless or satellite technology at minimum prescribed upload and download speeds.

In addition to meeting its obligations under the SIP regime, **nbn**'s objectives are set by the Shareholder Ministers' Statement of Expectations (**SoE**). The Government issued **nbn** with a revised SoE on 19 December 2022.

nbn's spectrum requirements have been developed to enable **nbn** to meet its obligations as the default SIP and as set out in the SoE, taking into account the multi-technology mix model and anticipated future demand for services.

As of 16 March 2023, there were approximately 396,000 and 98,000 active FW and satellite services respectively.¹

Response to issues for comment

1. Licence commencement and duration

ACMA Proposal

Licence commencement and duration: we seek comments on our preliminary views that:

- > *3.4 GHz licences will commence as soon as possible after a winning bidder pays its spectrum access charge. The expiry date will be 13 December 2030 (approximately 7 years), to align with existing 3.4 GHz band licences.*
- > *Subject to the payment of the spectrum access charge, 3.7 GHz licences will commence 8 weeks after publication of the auction results for a term of 20 years, the maximum allowable under subsection 65(3) of the Act.*

¹ <https://www.nbnco.com.au/corporate-information/about-nbn-co/corporate-plan/weekly-progress-report>



nbn strongly supports the proposal for 3.4 GHz licences to commence as soon as possible and to expire on 13 December 2030, which will align with existing 3.4 GHz band licences. A common expiry date with existing 3.4 GHz licences will assist with secondary trading and therefore defragmentation of the 3.4 GHz band following the auction, which promotes the efficient allocation and use of spectrum.

nbn also considers that the 3.7 GHz licences should have a common expiry date with the 3.4 GHz licences. A common expiry date across the 3.4 - 3.8 GHz band generally will assist with secondary trading following the auction, which promotes the efficient allocation and use of spectrum.

2. Licence renewal statements

ACMA Proposal

Licence renewal statements: we seek comments on our preliminary views to include the following statements in spectrum licences issued as a result of the 3.4/3.7 GHz bands auction:

For spectrum licences in the 3.4 GHz band:

- > *The spectrum licences may be renewed at the ACMA's discretion.*
- > *A renewal application period of 13 December 2028 to 12 December 2030 (a period of 2 years before licence expiry).*
- > *A renewal decision-making period of 6 months after receiving an application for renewal of the licence.*
- > *There will be a public interest statement.*

For spectrum licences in the 3.7 GHz band:

- > *The spectrum licences may be renewed at the ACMA's discretion.*
- > *A renewal application period of one year, commencing 5 years before licence expiry.*
- > *A renewal decision-making period of 2 years, commencing immediately after the renewal application period.*
- > *There will be no public interest statement.*

Section 65A of the Act sets out the requirements for spectrum licences to contain statements regarding renewal arrangements.

We note that the ACMA intends to consult further on the issue of licence renewals generally within the coming months. Subject to any issues that may arise in the context of that broader consultation, **nbn** supports the ACMA's proposed licence renewal statements for spectrum licences in the 3.4 GHz band auction, given consistency with the terms of existing licences in the 3.4 GHz band.

As noted above, **nbn** considers that the 3.7 GHz licences should have a common expiry date with the 3.4 GHz licences. The 3.7 GHz licences should also have licence renewal statements that are consistent with the 3.4 GHz licences for the same reason; to support secondary trading that will assist with band defragmentation.



3. Frequency lot configuration

ACMA Proposal

Frequency lot configuration: we seek comments on the following proposed lot sizes:

- > generic lots – 5 MHz
- > leftover lots – 2.5 MHz.

nbn supports the ACMA's proposal to offer generic lots of 5 MHz, with leftover lots of 2.5 MHz in MRC1 and MRC2, as set out in the Consultation Paper.

We note that a lot size of 5 MHz has the advantage of enabling existing licensees with holdings that are not multiples of 10 MHz to potentially 'round up' their holdings. While some bidders may require a minimum of 10 MHz, this may be addressed through specifying Minimum Spectrum Requirements (**MSR**).

The proposal to align frequency boundaries by configuring 2 lots of 2.5 MHz at the top and the bottom of the MRC2 block is also supported, as this will potentially allow the acquisition of contiguous holdings across different geographic areas.

4. Geographic lot configuration

ACMA Proposal

Frequency lot configuration: we seek comments on our proposal to:

- > Disaggregate the Rural Australia area in both the 3.4 GHz and 3.7 GHz bands according to the 3.6 GHz regional boundaries.
- > Configure the regional areas in 37000-3800 as follows:
 - 3700-3750 MHz: aligned with 3.6 GHz regional areas.
 - 3750-3800 MHz:
 - Queensland and Victoria: Regional Area 2 (RA2) + Major Regional Centres 1 (MRC 1);
 - Other regional areas: RA2
- > Configure the metropolitan areas as independent products.
- > Aggregate the Regional WA south and Regional WA central areas in 3475-3510 MHz and 3700-3800 MHz.
- > Aggregate Tamworth with surrounding areas as follows:
 - 3400-3575 MHz: aggregate with Regional NSW south and Quirindi East;
 - 3700-3750 MHz: aggregate with Rural North NSW / South Queensland.
- > These settings are reflected in Schedules 1-4 to the draft marketing plan.

nbn supports the ACMA's proposed geographic lot configuration, except in respect of Rural Australia.

The ACMA presented 3 options for the geographic lot configuration for Rural Australia in the 3.4 GHz auction:

- Option A – to align with state-based boundaries.
- Option B – to align with the current 3.4 GHz licence boundaries (Western Australia and southern/eastern Australia).
- Option C – to align with the 3.6 GHz boundaries.



nbn recommends Option B (Current 3.4 GHz boundaries) as the most appropriate approach for the 3.4 GHz auction, which would align the new lot boundaries with the current 3.4 GHz licence area boundaries and therefore:

- Support defragmentation
- Maximise efficiency by enabling contiguous holding across a wide geographic area
- Minimise complexity for potential bidders.

5. Product naming

nbn has no comments regarding the proposed naming scheme.

6. Sequencing

ACMA Proposal

Sequencing: we seek comments on our proposal to sequentially allocate the 3.4/3.7 GHz bands spectrum. We propose to allocate 3.7 GHz band spectrum through all 3 auction stages first, followed by the allocation of 3.4 GHz band spectrum, with a minimum period of 5 working days between allocation processes

nbn supports the ACMA's proposal to sequentially allocate the 3.7 GHz band first, followed by the allocation of the 3.4 GHz band spectrum, rather than auctioning both bands simultaneously.

As the ACMA has noted, conducting the auctions sequentially does mean that bidders will not be in a position to dynamically switch demand between bands during the course of the auction. However, given the different proposed licence durations and geographic lot configurations, products across the two bands are arguably not close substitutes. On that basis we agree that conducting the auctions sequentially is unlikely to have a substantial impact on efficiency, as long as all registered bidders have access to equivalent information.

7. Commencement of auction

ACMA Proposal

Commencement of auction: we seek comments on a proposal to include a power for the ACMA to vary the start date and time of the 3.7 GHz band auction.

nbn supports the proposal for the ACMA to have the power to vary the start date and time of the 3.7 GHz band auction. We appreciate the need to ensure the auction manager is able to reschedule the auction if any issues arise during system testing or the mock auctions.

8. Auction stages and rounds

ACMA Proposal

Auction stages and rounds: we seek comments on our proposal to:

- > *include a pre-bidding round in the primary stages of the auction, during which bidders must specify their start demand and may adopt the minimum spectrum requirement (MSR) for each product in each of the relevant bands*
- > *include a pre-bidding round in the secondary stages of the auction, during which bidders must confirm their interest in the available lots.*

nbn supports the proposal for the ACMA to include a pre-bidding round in the primary and secondary stages of the auction, during which bidders must specify their start demand rather than requiring bidders to specify their start demand at the time of registration.

9. Allocation of leftover lots

ACMA Proposal

Allocation of leftover lots: we seek comments on our proposal to: proposal to:

- > *offer to allocate each leftover lot (of 2.5 MHz, see also 'Frequency lot configuration') to an eligible recipient (that is, an existing adjacent licensee) for a set price before the 3.7 GHz auction*
- > *allocate any leftover lots not taken up by an eligible recipient, effectively as a 7.5 MHz lot (that is, to the winner of a lot that is assigned the frequency range adjacent to the leftover lot).*

nbn supports the ACMA's preferred option (Option D) for leftover lots to be offered at a set price to the existing adjacent licensee before the auction commences.

Provided an appropriate price is set, we agree with the ACMA that this method is most likely to maximise the likelihood that the spectrum will be allocated to a party that values it, and will also mitigate the potential risk that a party other than the existing adjacent licensee acquires the leftover lot for the purpose of preventing the adjacent licensee from accessing it. Direct allocation will also minimise the complexity of the auction system and rules.

However, given the limited utility of these lots on their own we would expect that the price set by the ACMA for these lots to be low. In particular, given internationally harmonised channel bandwidths are typically in multiples of 5 or 10 MHz, the price for these 2.5 MHz lots should be lower than the pro-rata starting price for the 5 MHz lots.

If the offer is not taken up by the adjacent licensee, we support the ACMA's proposed approach to allocate the leftover lot to the winner of the adjacent frequency following the assignment stage.



10. Auction announcement

ACMA Proposal

Auction announcements: we seek comments on the proposal to publish the following information:

- > *after the eligibility deadline, publish the names of all registered bidders*
- > *after the end of the auction, publish the results of the auction including the names of unsuccessful bidders.*

nbn supports the ACMA's proposal to publish the names of all registered bidders, which is a common practice in many other jurisdictions.

11. Minimum spectrum requirements

ACMA Proposal

Minimum spectrum requirement (MSR): we seek comments on our proposal to apply a MSR of 2 lots for each product in the 3.4/3.7 GHz bands auction.

nbn supports the proposal to apply an MSR of 2 lots for each product in the 3.4/3.7 GHz auction.

nbn also asks the ACMA to consider the inclusion of an 'all-or-nothing' type bidding system, where bidders can define how their bids are interpreted within the auction rules. Under such a system, bidders are able to define how excess demand should be dealt with in the move between bidding rounds. If bidders make an increase bid of 20 MHz, for example, they could specify in addition that if they did not receive 20 MHz then they would only require 10 MHz, and not 15 MHz.

This 'all-or-nothing' approach increases the certainty of outcomes for bidders, while also increasing spectrum efficiency, because bidders will not be left with individual lots that cannot be efficiently used. As such **nbn** believes it would be a valuable addition to the auction rules. Such rules were used effectively in the FCC incentive auction.²

12. Information policy

ACMA Proposal

Information policy: we seek comments on our proposal to provide exact excess demand information to bidders at the end of each clock round in the primary stages of the auction.

nbn supports the ACMA proposal to provide exact excess demand information to bidders at the end of each clock round in the primary stage of the auction.

² See 9.4.1 of https://wireless.fcc.gov/auctions/1002/resources/fABS_tutorial_final/presentation_html5.html

13. Pre-assignment of frequencies for unsold lots

ACMA Proposal

Pre-assignment of frequencies for unsold lots: we seek comments on our proposal that the frequency range of any unsold lots be contiguous and be determined based on the assignment bids, rather than pre-assigned.

nbn supports the proposal that the frequency range of unsold lots be determined based on assignment bids rather than pre-assigned.

We note that the ACMA is proposing to use the nearest Vickrey core price during the assignment stage. **nbn** recommends Vickrey pricing instead of core Vickrey pricing as it is simpler and yields the same benefits in terms of encouraging bidders to reveal their genuine valuation.

14. Allocation limits

ACMA Proposal

Allocation limits: we seek comments on the following proposed options for allocation limits:

- > Option 1: 140 MHz limit in both metropolitan and regional areas in the cross-band frequency range of 3.4 – 3.8 GHz
- > 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
- > Option 3: No limits.

nbn's view remains that the appropriate cross-band frequency range for allocation limits should be informed by the substitutability of all sub 6 GHz band spectrum holdings, with more weight placed on the low band (sub 1 GHz) and spectrum holdings that use FDD configuration (including 1800 MHz, 2100 MHz and 2600 MHz), to recognise the comparatively superior performance characteristics.

Of the allocation limit options proposed by the ACMA, **nbn** considers Option 2 (140 MHz in metropolitan areas and 160 MHz in regional areas) best achieves the objectives of the MPS for this allocation.

Option 2 is the most appropriate option as it balances the risk of unsold lots with the risk of the monopolisation of spectrum holdings. It appropriately accounts for the differing levels of demand between metropolitan areas and regional areas, and therefore meets the objectives in the MPS of supporting digital connectivity and investment in regional Australia and promoting competitive markets.

15. Exclusion from allocation limits

ACMA Proposal

Exclusions from allocation limits: we seek comments on our proposal to exclude the following spectrum from the allocation limits:

- > leftover lots
- > the Regional WA Central Middle product.

nbn supports the ACMA's proposal to exclude leftover lots and the Regional Central Middle product from allocation limits. In particular, the leftover lots are of limited value given their size and are therefore unlikely to

have an impact on competition. Including those lots in the allocation limits might reduce the likelihood of those lots being taken up by adjacent licence holders, which would be their most efficient allocation.

In addition, to reduce the likelihood of unsold lots, the ACMA may wish to consider not applying allocation limits to residual lots (i.e. if there are unallocated lots of a product after the end of the primary stage as a result of insufficient demand).

16. Insignificant holdings threshold

ACMA Proposal

Insignificant holdings threshold: we seek comments on our proposal to:

- > set the insignificant holdings threshold at 30% of the population*
- > apply a calculation method with the effect that if a sub-area of a product is deemed to cover a small or 'insignificant' percentage of the population of the whole geographic area of a product, existing holdings in the sub-area would not be counted towards an applicant's allocation limit*
- > calculate existing holdings for the 3.7 GHz band allocation, and after the conclusion of that auction process, re-calculate existing holdings for the 3.4 GHz band allocation as if licences had been issued as a result of the 3.7 GHz band allocation.*

nbn has no concerns regarding the proposed insignificant holdings threshold of 30% in the context of this 3.4/3.7 GHz spectrum auction. However, we note that this limit and methodology may not be appropriate in all circumstances.



17. Affiliations

ACMA Proposal

We seek comments on our proposal to:

- > *Prevent applicants who are affiliated from participating in the auction as separate bidders*
- > *Deem agreements between parties about use or acquisition of the spectrum available for bidding at auction to cause the parties to the agreement to be affiliated.*

nbn agrees that it is important to ensure that applicants that are affiliates are not able to bid separately and are treated jointly for the purpose the allocation limits.

Clearly an agreement between parties specifically about the spectrum available for bidding at auction, should cause the parties to the agreement to be treated as affiliates for the purpose of applying the allocation limits. However, that is not the only circumstance in which parties should be deemed to be affiliates.

We are aware that in December 2022 the ACCC announced that it would not grant authorisation to for a deal proposed by Telstra and TPG of a Multi-Operator Core Network (**MOCN**) and related agreements for Telstra to lease TPG's spectrum in regional areas, including spectrum in the 700 MHz, 800 MHz, 2 GHz and 3.6 GHz bands. Telstra and TPG have now applied to the Australian Competition Tribunal for a review of the merger authorisation determination. If the decision of the Competition Tribunal does not support the ACCC decision to refuse authorisation and the MOCN arrangements between Telstra and TPG proceed, it is our view that Telstra and TPG ought to be considered associates for the purposes of this auction regardless of whether those agreements specifically contemplate the use or acquisition of the spectrum available for bidding at this auction. This is especially the case given the arrangements do include spectrum within the cross-band frequency range of the allocation limits.

If the proposed definition of associates does not already capture the proposed Telstra/TPG relationship, then the definition should be amended.

18. Application and registration process

ACMA Proposal

Application and registration process: we seek comments on our proposal to:

- > *undertake a 2-stage application/eligibility nomination process covering participation in the 3.7 GHz band allocation and the 3.4 GHz band allocation*
- > *enable the submission of application and eligibility nomination documents via an online interface*
- > *set the application fee for the auction at \$10,000*
- > *require applicants to secure eligibility points that may be used for bidding in the 3.7 GHz band allocation and/or the 3.4 GHz band allocation by requiring an eligibility payment or deed of financial security that secures the value of the eligibility points requested*
- > *require an eligibility payment or deed of financial security of 10% of the price of the leftover lot from eligible recipients who choose to take up a leftover lot.*

nbn supports the application process proposed by the ACMA and in particular the proposal to have a single application and eligibility nomination process to allow bidders to apply to participate in the 3.4/3.7 GHz auction.



This will allow participants to bid on either or both of the 3.7 GHz band and the 3.4 GHz band spectrum, up to the bidder's allocation limit and eligibility points.

We support the ACMA's preferred approach of allowing applicants to nominate flexible eligibility points that may be used in either the 3.7 GHz band allocation or the 3.4 GHz band allocation.

19. Variation of prices

ACMA Proposal

Variation of prices: we seek comments on our proposal to include in the allocation determination the power for the ACMA to vary starting prices and/or the set price of leftover lots after applications open, but before the eligibility deadline. If the ACMA varied the starting prices and/or the set price of leftover lots, the application deadline and eligibility deadline would be extended.

nbn understands that the Applicant Information Pack (**AIP**) will include the lot ratings, starting prices for lots of each product available for bidding in the auction and the set price of leftover lots. However, the draft allocation determination provides that the ACMA may vary the specified prices prior to the eligibility deadline.

nbn supports the ACMA having an ability to vary prices before the eligibility deadline, as has been provided in previous auctions, provided that:

- such power can only be used to increase prices in exceptional circumstances that could not have been foreseen at the time starting prices were set; and
- deadlines are appropriately extended to allow applicants an appropriate opportunity to vary or withdraw their application.

20. Payment terms

ACMA Proposal

Payment terms: we seek comments on our proposal to require upfront payment of winning prices before licence issue.

The ACMA is proposing to require upfront payment of winning prices before licence commencement. This is not an issue of concern for **nbn**. However, we note that in some previous auctions it has been possible to pay winning prices in instalments, where only the first of several instalments must be paid before licence issue. It would be preferable to **nbn** if payment by instalments were available to winning bidders in the 3.4/3.7 auctions.

21. Changes to the Radiocommunications (Spectrum Licence Tax) Determination 2021

ACMA Proposal

Changes to the Radiocommunications (Spectrum Licence Tax) Determination 2021: we seek comments on our proposal to:

- > *change the existing frequency range used to calculate spectrum licence tax from 3400–3700 MHz to 3400–3800 MHz*
- > *change the base amount for this frequency range, used to calculate spectrum licence tax, from \$166,032 to \$221,376 to reflect the change in the frequency range.*

nbn supports the proposed changes to the *Radiocommunications (Spectrum Licence Tax) Determination 2021*, provided that the changes to the base amount do not result in any increase to the spectrum licence tax payable by existing spectrum licensees in the 3400 – 3700 MHz frequency range.

22. Spectrum licence technical framework

ACMA Proposal

Spectrum licence technical framework: We seek comments on the proposed technical framework, including relevant aspects of draft RALI MS47 as they relate to spectrum licences.

nbn has no immediate concerns with the draft technical instruments released by the ACMA:

- Proposed Changes to ***“unacceptable levels of interference”***
- Proposed Changes to ***“Managing interference from spectrum-licensed transmitters (RAG Tx)”***
- Proposed Changes to ***“Managing interference from spectrum-licensed transmitters (RAG Rx)”***
- ***“RALI MS47”***

In the ***“Radiocommunications Spectrum Marketing Plan (3.4/3.7 GHz Bands) 2023”*** document, **nbn** notes expanding references to 3GPP to include those relating to 5G NR would be appropriate. In particular, 3GPP TS 38.211 which is the specification for 5G NR Physical channels and modulation, along with required updates to the respective sections like Synchronisation Requirement to include 5G NR special subframe configuration and uplink-downlink configuration cases.

23. Coexistence of radio altimeters with wireless broadband

ACMA Proposal

Coexistence of radio altimeters with wireless broadband: Alongside this consultation paper, we have also published a report on coexistence between radio altimeters and WBB. Published at Appendix A of this consultation paper is a list of separate questions aimed at eliciting evidence to assist us in making final decisions around the technical framework to manage coexistence between wireless broadband and radio altimeters.

nbn understand the critical nature of radio altimeters and support the dual obligation scheme on the aviation and telecommunications sectors. That is, the use of interim constraints on WBB for a clearly defined period of time to enable the necessary radio altimeters to be retrofitted, such that the interim mitigations can be removed entirely.

Allocation of AWLs in the 3.8 GHz band

The auction of the 3.4/3.7 GHz spectrum is part of a broader mid-band spectrum allocation program that also includes:

- An administrative allocation of AWLs in remote areas of the 3.4–4.0 GHz band.
- An administrative allocation of AWLs in the 3.8 GHz band (3.8–3.95 GHz in metropolitan areas and surrounds, and 3.75–3.95 GHz in some regional areas).
- An allocation of apparatus licences in urban excise areas of the 3.4–3.475 GHz band, and metropolitan and regional areas of the 3.95–4.0 GHz band.

The Consultation Paper only pertains to the 3.4/3.7 GHz bands auction. However, given potential co-dependencies, the Consultation Paper does include an indication of certain aspects of the ACMA's intended approach to other allocations.

In particular, in respect of the 3.8 GHz AWL allocation in metropolitan and regional areas, the Consultation Paper notes the following aspects of the ACMA's initial view:

- These AWLs will be allocated via an allocation window.
- The ACMA is considering implementing an initial allocation limit of zero for incumbent spectrum licensees in the 3.4 – 3.7 GHz frequency range (**nbn**, Telstra, Optus and TPG) for a period of time after allocations open for the AWLs, to provide initial priority to LA WBB, point-to-point (PTP) and fixed satellite services (FSS).
- The spectrum that may remain following the initial priority access period would be subject to an additional cross-band limit, taking into account spectrum licensed holdings in the 3.4 – 4.0 band (including any spectrum acquired in the 3.4/3.7 auction).

nbn is concerned that the ACMA's proposed initial allocation limit of zero for incumbent spectrum licensees may lead to poor allocation outcomes, that will be detrimental to the long-term public interest derived from spectrum. In particular:

- Given the amount of spectrum available, to apply zero allocation limits is excessive to what would be required to support a range of use cases and promote competitive markets.
- To initially preclude all incumbent licensees from applying for AWLs means that the ACMA may be making final allocation decisions without complete information about alternative competing demands that may have greater public benefits.
- The spectrum remaining after the initial allocation window may lack contiguous blocks or lack alignment with an applicant's existing adjacent holdings, which will diminish its value.

We understand the ACMA intends to consult on a draft Applicant Information Pack (AIP) for the 3.8 GHz AWLs within the coming months. Prior to this consultation we urge the ACMA to reconsider its proposed approach to apply zero allocation limits to existing licence holders for an initial period.