



Public

nbn 's submission to the ACMA on Proposed spectrum re-allocation declaration for the 3.4 and 3.7 GHz band, March 2022 consultation paper

5 May 2022

Final



Thank you for the opportunity to comment on the issues set out in the *'Proposed spectrum re-allocation declaration for the 3.4 GHz and 3.7 GHz bands, Consultation paper, March 2022'* and consultation package generally.

nbn's spectrum requirements and strategies have been developed to enable it to meet the Government's Statements of Expectations and the Statutory Infrastructure Provider (**SIP**) regime and our role as default SIP for Australia. This includes the Federal Government's expectation that **nbn** will assist in reliably and affordably meeting the current and future broadband needs of households and businesses, including regional and remote areas in Australia, and continue to upgrade the network technologies to support Retail Service Providers (**RSPs**) to meet demand from end users and improve customer experience.¹

As more Australians are changing the ways they work, with more people working from home due to the COVID-19 pandemic, **nbn**'s fixed wireless (**FW**) and satellite network services play a critical role in meeting the digital connectivity needs and lifting the digital capability for all Australians. As of 28 April 2022, there were approximately 382,000 and 110,000 active FW and satellite services respectively.²

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 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.

The Federal Government and **nbn**'s \$750m FW network investment

The recent announcement by the Federal Government of a \$750m investment for **nbn**'s FW network, comprising of a Federal Government contribution of \$480m and \$270m by **nbn**, will allow **nbn** to fast-track an uplift of the performance of the FW network including the introduction of 5G technology in the millimetre wave (**mmWave**) and increased deployment of cmWave, as well as uplift satellite service performance. This investment will form part of the government and **nbn**'s response to the 2021 Regional Telecommunications Review which recommended enhancements to **nbn**'s FW and satellite services in response to a step-change in demand for data and broadband services in rural and regional areas.

The key benefits of the \$750m FW network investment are expected to be as follows:

- Improved performance of the entire expanded FW network, with the FW network capable of achieving 'typical wholesale busy period speeds' of at least 50Mbps (download).³
- Improved satellite network performance, due to decongestion of the more heavily used beams with ~120,000 satellite-only premises (including ~25,000 active users) able to access FW, once the FW footprint is expanded. We also anticipate that the satellite network will be capable of offering enhanced data limits for the Sky Muster and Sky Muster Plus product users.
- Subject to industry consultation, potential for RSPs to offer FW products with a possible maximum wholesale download speed of up to 100 Mbps across the entire footprint, with up to an estimated 85% of

¹ See NBN Co Ltd Statement of Expectations 26 August 2021 at <https://www.nbnco.com.au/content/dam/nbn/documents/about-nbn/policies/soe-shareholder-minister-letter-2021.pdf>

² <https://www.nbnco.com.au/corporate-information/about-nbn-co/corporate-plan/weekly-progress-report>

³ The 'typical busy period speed' will be an estimate based on a sample of nbn FW wholesale services and will measure the average speed at certain points in each hour of the busy period between 7-11pm to identify a 'typical busy period speed', in line with the methodology outlined in the ACCC's Broadband Speed Claims Industry Guidance Paper (October 2020).



the footprint also able to access potential maximum wholesale download speed of up to 250 Mbps. This limitation of 85% availability is directly related to **nbn**'s current spectrum holdings. **nbn**'s interest in acquiring more spectrum in the 3.4 – 4.0 GHz frequency range, to address the remaining 15%, is detailed further in this submission.⁴

- Upgrading the regional network will assist in bridging the digital divide, estimating that this initiative could support an additional \$6.1 billion in regional GDP over FY 2022 - 26.⁵

Our interest in **the proposal to make available 3.4 and 3.7 GHz spectrum licences** falls within the following categories:

- **Protecting nbn's existing outer metro 3.4 GHz spectrum holdings from interference.** This spectrum is the only spectrum that **nbn** has available for **nbn**'s FW network to service the outer metro fringe areas of Sydney, Melbourne, Adelaide, Perth, and Brisbane. We consider that the ACMA needs to continue to balance the need to protect **nbn**'s existing and planned services and ensure **nbn** is not unreasonably constrained in its ability to deploy new technologies in future with the utility of the urban / inner metro excise spectrum.
- **Defragmenting 3.4 GHz regional spectrum licences.** The acquisition of spectrum and subsequent trading with other spectrum owners as required will ensure that existing regional spectrum holdings can be more efficiently utilised and facilitate more carrier aggregation technology solutions.

3.4 GHz regional spectrum licences

We support the ACMA making the spectrum in the '3.4 GHz regional band' available as spectrum licences noting that this would assist in defragmenting the regional spectrum in the 3400 – 3575 MHz range.⁶ We agree that larger contiguous holdings will reduce service deployment costs.

We are investigating the business case for acquiring additional 3.4 GHz regional band spectrum which is also a key dependency to defragmenting our existing regional spectrum licensed holdings.

- [C-i-C]
 - [C-i-C]
- *When?* **nbn** has equipment capable of retuning to the target spectrum ranges remotely in many cases and we would seek to deploy any acquired spectrum as soon as possible. We support the spectrum licences commencing immediately enabling the usage subject to operating around or reaching commercial agreements with incumbents during the reallocation period.

⁴ Any new speed tiers or changes to FW products is subject to consultation with industry which may alter the design, contractual terms, product specifications and/or go-to-market approach.

⁵ [750 million investment to 5G-enable nbn® Fixed Wireless to deliver faster speeds to regional Australia | nbn \(nbnco.com.au\)](https://www.nbnco.com.au/news/750-million-investment-to-5g-enable-nbn-fixed-wireless-to-deliver-faster-speeds-to-regional-australia)

⁶ This is the 3.4 GHz regional band is defined in the 'Proposal to re-allocate 3.4 and 3.7 GHz consultation paper' as spectrum in the frequency ranges: 3400–3425 MHz in major regional centres 2, 3400–3442.5 MHz in regional area 1, 3475–3492.5 MHz in regional areas 1 and 2, 3492.5–3510 MHz in major regional centres, and regional areas 1 and 2, 3510–3542.5 MHz in major regional centres 2 and regional area 1 3475–3575 MHz in regional Western Australia central.

We have provided additional comments on the questions set out in the consultation paper below.

The ACMA's preferred planning approach: urban excise spectrum

Do you have comments on our preferred approach to:

- issue spectrum licences in the 3400–3475 MHz frequency range in urban excise areas in accordance with Option A?
- allocate spectrum in the 3800–4000 MHz band for LA WBB use using the segmentation approach?

We understand the ACMA's preferred approach for the 3400 – 3475 MHz frequency range in urban excise areas is to issue spectrum licences on the basis that this could facilitate the consolidation of spectrum-licensed holdings and also increase future planning options in terms of spectrum management.

From a technical interference perspective, we understand that the proposed technical framework is intended to provide the same protection to **nbn**'s existing outer metro holdings, irrespective of whether the inner metro spectrum user is operating under a class, apparatus, or spectrum licence. However, we consider the practical effect of these requirements may limit the viability of even a single operator WA WBB deployment. Additionally, the unique geographic boundary and interference framework appear to limit the possibilities for an effective restack of the urban excise area.

Given this, we consider that the proposal to spectrum license the urban excise areas in 3400 – 3575 MHz is unlikely from a practical perspective to facilitate the consolidation of spectrum-licensed holdings. On this basis, we consider that allocating the urban excised spectrum as apparatus licences with a maximum tenure of 2030 to align with the expiry of 3.4 GHz / 3.6 GHz spectrum licences may enable greater public utility of this spectrum assuming that apparatus licences may be more attractive to LA WBB in line with the MPS objective of supporting a range of use cases and users.

We consider that the bottom-up/top-down approach to licensing arrangements in the 3.8 – 4.0 GHz frequency range is more likely to enable the 'highest value use' when compared to the ACMA's preferred segmentation approach for the following reasons:

- We agree with the ACMA's views that the top-down approach may work well if there is high demand during the initial release of spectrum.
- Segmentation could result in spectrum remaining unused for a significant period, or, being used in a smaller/localised area deployments that prevents efficient or effective use of the spectrum by others.
- By adopting Option B⁷ those use cases that may emerge (restricted cell LA WBB) would have access to spectrum in this area, with Option 3 (ACMA's preliminary preferred option) increasing the available quantum of spectrum for both LA WBB and restricted cell LA WBB deployments outside of Metro areas.

⁷ Develop class licence or apparatus (site based or AWL) licence arrangements for restricted cell LA WBB use in the 3400–3475 MHz band in urban excise areas, and develop arrangements for general LA WBB use in the 3800–4000 MHz frequency range in metropolitan areas and other areas of high demand.



We note that the ACMA's decision to proceed with the segmentation approach or top-down approach would affect the total amount of spectrum available in the 3800 – 4000 MHz range for acquisition for macro cell WBB use. We would be keen to continue discussing with the ACMA any potential allocation limit or allocation quantum policy noting the Minister's Policy Statement (MPS)⁸ which the ACMA must have regard to in making its decisions and that the level of demand for spectrum and whether there is differential demand expressed in different areas may become more certain.

The ACMA's preferred planning approach: 3400–3575 MHz and 3700–3800 MHz

- Do you have comments on our preferred planning option (Option 3), which updates the previous preliminary planning decisions (Option 1)?
- Please provide evidence in support of your comments. See also the 'Specified parts of the spectrum' section of this paper.

We support the ACMA's preferred option, which would result in a single licence type applying across all regional and metropolitan areas in the 3400–3750 MHz and 3400–3800 MHz bands respectively, as this could facilitate the consolidation of spectrum-licensed holdings and increase future planning options in terms of spectrum management, with the exceptions of the urban excise area as discussed above.

We recognise that this approach given the inclusion of the urban excise area means that further consideration is required by the ACMA on spectrum options to accommodate possible LA WBB use-cases. We have provided our views above on the 3.8 – 4.0 GHz licensing arrangements.

The ACMA's proposal: licence type

If the ACMA makes a re-allocation declaration, do you have comments on our proposal to issue spectrum licences in the 3.4 GHz (including in regional areas and in urban excise areas) and 3.7 GHz bands?

Please provide evidence in support of your comments.

We support the ACMA's proposal in respect of the 3.4 GHz regional areas and 3.7 GHz bands as this could facilitate the consolidation of spectrum-licensed holdings by spectrum licence trades and also increase future planning options in terms of spectrum management. This is with the exception of the urban excise area as discussed above. The defragmentation of 3.4 GHz regional holdings will ensure that that existing regional spectrum holdings can be more efficiently utilised and facilitate greater carrier aggregation technology solutions to be deployed. This is particularly important in the regional areas given the improved use of spectrum in this area would ultimately support digital connectivity and investment in regional Australia in line with the MPS.

⁸ <https://www.infrastructure.gov.au/department/media/news/ministerial-policy-statement-34-40-ghz-spectrum-band> The 4 communications policies specified in the MPS cover: supporting the deployment of new and innovative technology, including 5G; supporting a range of use cases and users; supporting digital connectivity and investment in regional Australia; and promoting competitive markets.

The ACMA's proposal: parts of the spectrum

If the ACMA makes a re-allocation declaration, do you have comments on our proposal to declare for re-allocation the parts of the spectrum in accordance with our proposed planning option (Option 3, 'Planning options', above)?

We welcome stakeholder views on the parts of the spectrum proposed for re-allocation, particularly the inclusion of the frequency ranges 3475–3492.5 MHz, 3492.5–3510 MHz and 3510–3542.5 MHz in specified geographic areas as described under Option 3 in 'Planning options'.

We support the ACMA's proposal as this would assist the defragmentation of 3.4 GHz regional spectrum. This is with the exception of the urban excise area, as discussed above. [C-i-C] [C-i-C]

The ACMA's proposal: re-allocation period and deadline

If the ACMA makes a re-allocation declaration, do you have comments on our proposal for a re-allocation period of 5 years from the commencement of the re-allocation declaration, and a re-allocation deadline of 12 months before the end of the re-allocation period?

Please provide evidence in support of your comments.

Based on available information, we support the proposed reallocation period of 5 years. We would be interested in further discussing with the ACMA the proposal to reserve spectrum for the PMPs operating in the 3475 – 3542.5 MHz frequency range into the 3750 – 4000 MHz frequency range.

The ACMA's view: licence term and commencement

We seek stakeholder views on the appropriate spectrum licence duration.

Our preliminary view is that licences should commence shortly after an auction.

We support the proposal that spectrum licences commence immediately and before the end of the re allocation period. We support the proposed short duration option for 3.4 GHz and 3.7 GHz spectrum licences to expire on 13th December 2030, to align with all spectrum licences in the 3.4 – 3.7 GHz frequency range. We consider that this would increase future planning options. We note our comments on the urban excise area as discussed above.

We would like to deploy any acquired spectrum as soon as possible and would support the spectrum licences commencing immediately enabling the usage subject to operating around or reaching commercial agreements with incumbents during the reallocation period.

The ACMA's preferred view: lot configuration (frequency)

If the 3.4 GHz band in regional areas is re-allocated, our preliminary view is to divide the spectrum into 10 MHz lots, with one or more leftover lots of 2.5 MHz, 5 MHz or 7.5 MHz, depending on the region. Alternatively, we may consider 5 MHz lots with 7.5 MHz leftover lots.

If the 3.4 GHz band in urban excise areas is re-allocated, our preliminary view is to divide the spectrum into 10 MHz lots, with a leftover lot of 15 MHz at 3460–3475 MHz.

If the 3.7 GHz band is re-allocated, our preliminary view is to divide the spectrum into 10 MHz lots.

We invite comments from stakeholders on bandwidth configuration options.

[C-i-C] [C-i-C]

The ACMA's view: lot configuration (geography)

We welcome submissions from stakeholders on the most appropriate geographic area configuration for the spectrum.

[C-i-C] [C-i-C]

The ACMA's preferred view: allocation methodology

Do you have comments on the proposal to use the 2-stage generic lots clock auction format for this allocation? Please provide evidence in support of your comments.

[C-i-C] [C-i-C]

The ACMA's preferred view: minimum spectrum requirement

Do you have comments on our preliminary view to offer bidders at auction an MSR of 2 lots, particularly if the 2-stage clock auction with generic lots is used?

Please provide evidence in support of your comments.

[C-i-C] [C-i-C]