



nbn's submission on proposed update to the Australian Radiofrequency Spectrum Plan

29 September 2020



Thank you for the opportunity to comment on issues relevant to the proposed update of the Australian Radiofrequency Spectrum Plan (ARSP) to reflect changes to the ITU's Radio Regulations made at the WRC held in late 2019.

nbn's spectrum requirements are developed to ensure that it meets the Federal Government's expectation that all Australians have access to very fast broadband as soon as possible, at affordable prices, and at least cost to taxpayers, and that upgrade paths are available as required. The flexibility of the multi-technology mix approach enables **nbn** to build the network using the technology best matched to each area of Australia, and spectrum requirements are determined in this context.

We have considered the following in providing our views on issues relevant to the proposed ARSP update:

- the customer experience delivered to Australians including in rural, regional and remote areas by the existing satellite network services and potential upgrade paths; and
- the growing customer experience requirements and need for upgrade paths for the existing fixed wireless network.

nbn's existing satellite network and customer experience

nbn supports the proposed ARSP changes to reflect identification of the 17.7–19.7 GHz (space to earth) and 27.5–29.5 GHz (earth to space) bands for the operation of earth stations in motion communicating with geostationary fixed-satellite service space stations (as an outcome of WRC-19 Agenda item 1.5). This is given **nbn's** use of spectrum within these frequencies to support its Satellite Mobility (Large Commercial Passenger Aircraft) product.

nbn's upgrade paths for the fixed wireless and satellite network

nbn supports the proposed ARSP changes to reflect:

- identification of the 24.25–27.5 GHz, 37–43.5 GHz, 47.2–48.2 GHz and 66–71 GHz bands for the terrestrial component of International Mobile Telecommunications (IMT) (as an outcome of WRC-19 Agenda item 1.13); and
- a primary allocation to the fixed-satellite service in the 51.4–52.4 GHz band (as an outcome of WRC-19 Agenda item 9.1 issue 9.1.9).

We note **nbn's** requirements to provide an upgrade path for its fixed wireless networks in line with the Government's Statement of Expectations, new SIP requirements, and to meet growing customer experience requirements. [C-i-C] [C-i-C] These objectives also align with all of the Government's *Communication Policy Objectives for the 26 GHz band* which the Minister requested that the ACMA have regard to in allocating 26 and 28 GHz band apparatus licences. This includes the objective of encouraging investment in infrastructure, particularly in regional Australia.¹

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

In respect of the satellite network, **nbn** notes that it will rely on unconstrained access to spectrum in the 40 and 50 GHz bands for future satellite gateways, which would require access to part of the 37.5–42.5 GHz band (that could overlap with the same spectrum required for user links), and all of the 47.2–50.2/50.4–51.4 GHz band being allocated to the Fixed Satellite Service and excluded from consideration for mobile use in Australia.

¹ <https://www.communications.gov.au/documents/communications-policy-objectives-allocation-26-ghz-band> and <https://www.communications.gov.au/sites/default/files/allocation-limits-direction-for-26-ghz-auction-signed-letter-to-acma-chair-ecl.pdf>



The proposed changes to 51.4-52.4GHz enabling access for future satellite gateways provides additional flexibility in design and additional capacity for future **nbn** satellites to support anticipated demand. Importantly, the addition of 1 GHz, which will directly support future satellite service download requirements from end users, will reduce the cost of satellite upgrade paths.

There are limited suitable frequency ranges that provide a viable upgrade path for broadband satellite services due to ecosystem availability and performance requirements.