



nbn's submission on proposed area-wide apparatus licence

9 August 2019

Submission on proposed area-wide apparatus licence

Thank you for the opportunity to comment on the issues set out in the Australian Communications and Media Authority's (ACMA's) 'Proposed area-wide apparatus licence', Consultation paper, June 2019 (Paper). We set out our response below and would be happy to provide further information.

The ACMA proposes that a new type of apparatus licence, i.e. area-wide apparatus licences (**AWL**), would benefit spectrum users by complementing existing licensing options and improving apparatus licence flexibility. The AWL type would be scalable, able to authorise different-sized geographic areas and bandwidths to support area-wide multi-device deployments, and able to be used for a wide range of purposes, uses, services, applications and technologies. However, an individual licence may include special conditions that limit the operation of a radiocommunications device under the licence to an identified purpose, use or service.

The ACMA believes that the AWL will be particularly conducive to scenarios where there are multiple radiocommunications devices operated within smaller defined geographical areas and specified frequencies than those typically authorised by spectrum licences. Further, that the AWL type concept is consistent with the terms of reference of the Spectrum Review to promote more flexible licensing arrangements.

nbn has rolled out a fixed wireless (FW) and satellite network to service end users in homes and businesses to assist in meeting the Commonwealth 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. The Government also expects that **nbn** will ensure upgrade paths are available as required¹.

nbn consequently seeks an AWL licensing framework that will assist in satisfying **nbn**'s requirements for additional spectrum to service customers in homes and businesses for the entire FW access network footprint in metro-fringe, regional, and rural areas of Australia.² Further, it is desirable that the AWL type be flexible enough to accommodate future requirements noting the uncertainties surrounding future spectrum planning arrangements.

In this context, **nbn** submits that:

- AWLs should be scalable to large geographic areas, and also interoperable with other licence types³, to enable flexible licensing arrangements and greater spectral efficiency;
- the framework should ensure that AWLs can cover sufficient bandwidth to support the efficient use of the equipment ecosystem relevant to **nbn**'s FW network⁴;
- the long term nature of **nbn**'s network planning decisions involving significant expense means that the length of tenure of spectrum holdings is critical; and
- interference-free operation is critical to positive customer experience.

¹ See page 1 of NBN Co Ltd Statement of Expectations 24 August 2016 at: <https://www1.nbnco.com.au/content/dam/nbnco2/2018/documents/Policies/soe-shareholder-minister-letter.pdf>

² See Attachment C to **nbn**'s submission on the 26 GHz Band Options Paper dated 9 Nov 2018 for a visual representation.

³ AWLs, apparatus licence types and spectrum licences

⁴ **nbn**'s FW network relevantly uses the same technology as mobile network operators (MNOs) and therefore requires the bandwidths typically authorised by spectrum licences for use by MNOs.



nbn's ability to operate its existing, and future, FW and satellite networks free from interference from users of the proposed AWL licence type is also critical to a positive customer experience.

Noting that ACMA is considering the use of the AWL type to authorise access for wireless broadband services in some parts of the 26 GHz band, **nbn** reiterates its concerns regarding the risks posed by coexistence (including from 5G mobile networks) to the performance of **nbn**'s satellite network in the 26 GHz band.

nbn submits that any consideration of using the proposed AWL type in the 28 GHz band be consistent with **nbn**'s proposed arrangements with the following key characteristics:

- Both FSS Gateway (FSS G) and Ubiquitous FSS (FSS U) services to have sole primary status across the entire 28 GHz (27.5-29.5 GHz) band Australia wide.
- FWA services (as more broadly defined in section 1.2 of **nbn**'s May submission⁵) to have secondary status across the entire 28 GHz band Australia wide.
- Explicit exclusion of mobile services from the entire 28 GHz band.
- Relocation of PTP operators to an alternative band.⁶

nbn has made significant network planning decisions using the PTS transmitter apparatus licence type and understands that the proposed new AWL licence type would complement, not replace, existing licence options.

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Questions

1. *Do you think the proposed characteristics of the AWL type will support your current or intended network deployments? Are there any other kinds of deployments that you believe the AWL type should support?*

See the introductory section for **nbn**'s views on AWL characteristics that will support **nbn**'s need for additional spectrum across the entire FW network footprint to support and enhance customer experience.

nbn is interested to ensure that AWLs are interoperable with other AWLs, other types of apparatus licences and spectrum licences. An AWL licensee that can treat spectrum licensed under AWLs, other apparatus licences and spectrum licences as a single holding for site registration purposes would be able to use all spectrum more efficiently. The relevant circumstances that should be able to be treated as a single holding include where the same operators owns different licences in:

- the same frequencies in adjacent geographies, and
- adjacent frequencies in the same geography.

2. *Which bands and/or geographic areas do you believe would be conducive to the use of an AWL?*

nbn supports the ACMA's proposal to consult prior to deciding to issue AWLs in a new frequency band and that the suitability of AWLs will be informed by the following:

- the potential utility and benefit to spectral efficiency of issuing AWLs in the relevant band
- the technical and economic implications of allowing both AWLs and other apparatus licence types to be issued in the same frequency band

⁵ See section 1.2 of **nbn**'s submission on Replanning of the 28 GHz band Options paper dated 22 May 2019.

⁶ See **nbn**'s submission on Replanning of the 28 GHz band Options paper dated 22 May 2019 for more detail.



- the technical conditions that should apply to radiocommunications devices operating under the licence and the 'boundary conditions' (for example, the maximum signal strength levels at the geographical and/or frequency boundaries of the licence) to mitigate the risk of interference to neighbouring and/or adjacent spectrum users
- the minimum and/or maximum geographic area and frequency bandwidth for licences issued in the band
- whether radiocommunications devices (or a subset of devices) authorised under the proposed AWLs should be required to be registered prior to operation.

As discussed in the introductory section, **nbn**'s ability to operate its existing, and future, FW and satellite network free from interference from users of the proposed AWL type is also critical to a positive customer experience. See the introductory section for **nbn**'s views on the use of the proposed AWL licence type relevant to the 26 GHz and 28 GHz bands.

nbn does not have any further views on the bands and / or geographic areas that it considers would be conducive to the use of an AWL based on the information currently available. However, we would like to highlight the following specific aspects as also relevant to the suitability of AWLs:

- The need for long term security of tenure as offered under spectrum licences with **nbn**'s FW network involving long term network planning decisions of significant expense.
- The degree to which tradeability is required, noting that the ACMA's recent consideration of the 3400-3575 MHz arrangements identified that the mix of licence types is impeding defragmentation.

3. *What technical and other matters do you believe the ACMA should consider in deciding to use AWL licensing in a particular band?*

nbn understands that:

- The technical conditions for radiocommunications transmitters (and radiocommunications receivers, if applicable), and the boundary conditions for an AWL in a particular band will derive from band-specific planning considerations. An AWL Licence Condition Determination will contain conditions that are common to all transmitter AWLs and may include band-specific schedules containing conditions relevant to AWLs within the corresponding frequency band.
- The ACMA may publish technical planning information to assist in the production of a frequency assignment certificate (FAC). This technical planning information is likely to be in the form of a Radiocommunications Assignment and Licensing Instruction (RALI) that is specific to the relevant band.
- AWLs will not require coordination of devices prior to issue of the licence.
- AWLs will generally not require registration of devices prior to the device being operated.
- Should a licensee not be required to register a device, the AWL LCD⁷ will require licensees to provide the location and maximum total radiated power for each area wide stations⁸ (excluding mobile stations) operated under the licence within 10 business days.

⁷ Licence Condition Determination

⁸ Proposed definitions are set out in the draft 'Radiocommunications Legislation (2019 Measures No. 1) Instrument 2019'.

'area-wide station means a radiocommunications transmitter that is operated for an area-wide service'

'area-wide service means a radiocommunications service that is used for radiocommunications between:

(a) persons or things at fixed points and mobile stations; or



nbn appreciates that the interference risk informing the need for registration will be considered as part of the relevant technical planning process. **nbn** would like to highlight the importance of timely resolution of interference issues given the potential for adverse customer experience impacts where interference disputes are protracted.

nbn suggests that depending on the interference risk assessment, it may be appropriate to require devices within a certain distance from the geographical boundaries of an individual licence to be registered. This would aid other spectrum users in identifying any interference risk/s before deploying parts of their network and resolving any interference issue/s that present after deployment.

4. Do you have any other comments on the AWL concept?

nbn understands that in deciding whether to use administrative or price-based allocation for AWLs in a particular band, the ACMA will have regard to a range of factors, including the expected demand for the licences and the administrative efficiency of running a price-based process (including determining an appropriate starting price).

Further, **nbn** notes that in circumstances where administrative allocation is considered appropriate:

- The technical conditions, minimum frequency bandwidth and geographic area are expected to form the basis for calculating the price of licences issued in the band.
- The ACMA proposes to adopt a consistent approach to the pricing of AWLs across multiple bands using a set of parameters (for example, frequency band, lot size, population coverage), with weighting of each parameter needing to be considered on a band-by-band basis.

nbn does not have any other comments on the AWL concept based on the information currently available.

(b) mobile stations; or

(c) persons or things at fixed points.'