

31 May 2019

The Manager  
Economic Advisory Section  
Spectrum Allocations Branch  
ACMA

The Manager  
Spectrum Planning Section  
Spectrum Infrastructure Branch  
ACMA

**Re: Optimising arrangements for the 3400-3575 MHz band options paper & reconfiguring the 900 MHz band options paper**

Vodafone Hutchison Australia (**VHA**) appreciates the opportunity to make submissions to the ACMA in relation to:

- the ACMA's "Optimising arrangements for the 3400-3575 MHz band" options paper (**3.5 GHz paper**); and
- the ACMA's "Reconfiguring the 900 MHz band" consultation paper (**900 MHz paper**).

When viewed side by side, the ACMA's positions and reasoning appear inconsistent. VHA does not support the ACMA's preferred positions as stated in both papers. Furthermore, VHA believes the ACMA's positions are not supported by the object of the *Radiocommunications Act 1992* (**the Act**) and the ACMA's Principles for Spectrum Management (**Management Principles**). VHA also notes that the ACMA has not provided sufficient detail regarding the mechanics of how its preferred Option 3 per the 3.5 GHz paper would work in practice. VHA notes that the ACMA's preferred approach is highly irregular when compared to the usual process (i.e., Option 2). VHA reserves its views about the unusual process until more details are made available by the ACMA.

The ACMA's primary interest in examining these bands appears to be the identification of opportunities for industry to fully utilise these bands. VHA believes that it is critical to consider both bands together and test whether consistent priorities and processes are being applied to the extent possible. Only when clear differences are identified which drive alternative solutions to similar problems should consistency be put aside.

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The ACMA's preferred approaches appear to:

- prioritise efficiencies in the 900 MHz band<sup>1</sup> to deliver increases in capacity to Telstra which holds nearly 50% of the other allocated low-band spectrum in Australia, without [c-i-c] [c-i-c] begins] [redacted] [c-i-c] ends] or the impact on consumers who rely upon 3G coverage for voice calls. VHA's analysis shows not only a very substantial number of non-VoLTE devices in the market, but also that even VoLTE enabled handsets generate significant volumes of voice traffic even in metro areas;
- treat the NBN Co apparatus licences differently with a presumption of conversion to spectrum licences for spectrum which is not used and will not be used in future. While the precise boundaries of spectrum which can be excised may still need to be defined, there is enough indication that large areas of at least Sydney and Canberra can be used immediately to provide enhanced competitive mobile broadband services;
- ensure the 900 MHz licensees pay a "market price", but the AMCA does not apply the same goal to the NBN Co's 3.5 GHz spectrum, inferring NBN Co may be given preferential treatment; and
- prefer a highly irregular process with respects to the 3.5 GHz band where the overriding objective appears to be the conversion of NBN Co's licences, but in contrast, the ACMA favours a rigid and unresponsive process when considering the 900 MHz band.

Fundamentally, the ACMA has characterised a reallocation problem as an optimisation problem in the 3.5 GHz band and, inversely characterised an optimisation problem as a reallocation problem in the 900 MHz band. When the objects of the Act and the Management Principles are applied, VHA considers the exact opposite is the case. In that regard:

- 3.5 GHz band:
  - The most significant benefit and case for action is to ensure the unused metro NBN Co spectrum is used, not as the ACMA claims, to be realised from enabling Optus and NBN Co to restack their spectrum. This means the "problem" in the 3.5 GHz band should be viewed primarily as a reallocation of unused spectrum in an important spectrum band where the existing supply is unable to satisfy industry demand.
  - It is unclear why the ACMA would prioritise the relatively minor incremental benefits of a defragmentation and promote the interests of Optus which has an abundance of mid band 5G spectrum, and NBN Co which has no use of this spectrum in the most populated parts of Australia (where the greatest benefits can be gained from excising and auctioning this unused spectrum).

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<sup>1</sup> VHA refers to the 890-960 MHz range as the 900 MHz band, 825-845 MHz range plus 870-890 MHz range as the 850 MHz band, and the 809-824 MHz plus 854-869 MHz range as the 850 MHz expansion band.

- The ACMA should proceed on the presumption that there is spectrum which could and should be excised from NBN Co's 3.5 GHz holdings. The fact that there is still incremental work to be done to determine the precise edge of licence boundary should not deter the ACMA from prioritising the excise and competitive allocation processes. The ACMA should therefore focus on detailing a framework for how this would be achieved, rather than focused on how it could convert NBN Co's apparatus licences into spectrum licences.
- 900 MHz band:
  - The ACMA's "problem" as stated in the 900 MHz paper is the wrong lens through which to view the 900 MHz band as it conflates three separate and distinct issues.<sup>2</sup> This has led to the ACMA's preferred course of action, which would see the ACMA use a blunt instrument to address a perceived inefficiency where a surgical approach is most appropriate in the circumstances.
  - While VHA generally agrees that there are grounds to bring the 850 MHz expansion spectrum to market (i.e. a reallocation problem), VHA believes there are no grounds to bundle it with the 850 MHz downshift and 900 MHz reconfiguration issues because those are both optimisation problems that appear to only really benefit Telstra. It is unclear why the ACMA would prioritise the interests of Telstra who already holds most of the total available low band spectrum available to the mobiles industry, over the interests of VHA that has a critical reliance on the 900 MHz spectrum.
  - VHA believes that an industry-led reconfiguration is the most appropriate outcome in the 900 MHz band. The ACMA should support this by converting the existing apparatus licences into spectrum licences as this would best achieve an efficient configuration based on each carriers' unique needs. In other words, the argument the ACMA relies on in the 3.5 GHz band for a licence conversion is far better suited to the 900 MHz band.

Once the objects of the Act and the Management Principles are applied, it becomes clear that the ACMA's goals would be appropriately prioritised as follows:

1. Ensure new spectrum which doesn't raise substantial trade-offs is brought to use, ie the unused NBN Co metro 3.5 GHz spectrum and 850 MHz expansion spectrum are brought onto the market in a timely manner as this would maximise the overall public benefit derived from using the spectrum<sup>3</sup>;

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<sup>2</sup> Those three issues are: (1) bring to market the 850 MHz expansion spectrum, (2) 850 MHz downshift, and (3) optimising the structure of 900 MHz band.

<sup>3</sup> VHA does not object to NBN Co retaining access to the 3.5 GHz spectrum where it is critically need in the outer metro areas and supports the Government's policy in that regard. VHA submits that the reallocation of the unused NBN Co metro spectrum is not inconsistent with the objective of supporting Government policy if the ACMA takes a responsive and flexible approach to assessing how this unused spectrum could be used.

2. Defrag the 3.5 GHz band only once a concrete plan has been devised to excise and bring the unused NBN Co metro spectrum onto the market, and find a workable solution to the 850 MHz downshift as the expected public benefits derived from both exercises are significantly smaller than the priorities identified above; and
3. Enable an industry-led reconfiguration of the 900 MHz band as the expected public benefits of a band clearance and auction are unclear. The biggest benefit to be gained in the 900 MHz band is not a reconfiguration of the 900 MHz band, but rather the 1 MHz downshift which would see the bottom block of the 900 MHz band become free of interference. In any case, the ACMA must take a responsive and flexible approach to meet the needs of all users of spectrum.

Given the above, VHA believes there is a clear order of actions the ACMA should now take to achieve its goals:

1. Commit to a concrete plan to excise and bring to market the unused NBN Co metro spectrum **before** plans are devised to convert NBN Co's apparatus licences into spectrum licences;
2. For the 850/900 MHz bands:
  - a. proceed with the 850 MHz expansion allocation in 2023<sup>4</sup> but unbundle it from both the 850 MHz downshift and 900 MHz reconfiguration issues;
  - b. convert the 900 MHz apparatus licences into spectrum licences in 5 MHz, 2.5 MHz, and residual lots which best encourages industry-led reorganising of holdings in the most efficient configuration;<sup>5</sup> and
  - c. prior to the 850 MHz expansion auction, engage with industry to find a workable solution to downshift existing 850 MHz licences by 1 MHz. [c-i-c begins]  
[c-i-c ends] VHA would consider voluntarily executing a downshift prior to the 850 MHz expansion auction if its continued access to its existing 900 MHz holding is guaranteed by

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<sup>4</sup> To be clear, VHA supports the ACMA's position that 850 MHz expansion should be made available in a timely manner, however VHA believes that the auction timeline for the 850 MHz expansion should be closer to 2024 rather than the ACMA's proposed 2020. VHA expects pushing back the spectrum will further clarify the value of the spectrum as low band requirements for 5G become clearer in the future.

<sup>5</sup> In its 3.5 GHz paper, the ACMA stated that converting NBN Co's apparatus licences into spectrum licences is a key enabler of spectrum trading. The same argument is much more relevant for the 900 MHz spectrum as each of the relevant carriers have different uses for the 900 MHz spectrum and have different quantum needs, therefore have different risk profiles associated with potentially losing access to the 900 MHz spectrum. This suggests the ACMA's approach must be flexible and balanced. [c-i-c begins]

[c-i-c ends] In such circumstances, the ACMA's preferred course should be to take the necessary enabling steps to encourage industry to undertake market trading to find the most optimal configuration of the band.

spectrum licences on current payment terms until 2028 to coincide with the expiration of the 850 MHz licence.<sup>6</sup>

VHA believes this approach will promote a fairer outcome for all parties and help the ACMA achieve its goal of ensuring spectrum is efficiently and effectively used to the benefit of all Australians. This in turn promotes the objects of the Act and applies the Management Principles.

It should be recognised that the industry is currently in a period of flux and uncertainty following the ACCC's decision to oppose the proposed merger between VHA and TPG Telecom Ltd. This uncertainty has a very material and specific impact on VHA's ability to contemplate or engage in significant allocation processes until late 2020, and it is particularly important that the ACMA adopts a commercially-astute, responsive and flexible approach to spectrum management during this period of time.

We provide our detailed comments on the ACMA's papers in the attachments:

- Annexure A: VHA comments regarding the 3.5 GHz paper; and
- Annexure B: VHA comments regarding the 900 MHz paper.

If you have any questions, please do not hesitate to contact me or Louie Liu at [Louie.Liu@vodafone.com.au](mailto:Louie.Liu@vodafone.com.au).

Yours sincerely

Handwritten signature of Louie Liu in grey ink.

Dan Lloyd  
Chief Strategy Officer & Corporate Affairs Director

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<sup>6</sup> VHA notes that the ACMA's hopes that its proposed course of action will result in a voluntary downshift is unlikely to eventuate, and the ACMA may find the outcome for the 900 MHz band to be materially worse compared to the situation today. In contrast, VHA's proposal provides the best chance that a voluntary downshift of 850 MHz will occur prior to 2028. We provide more comments on this in Annexure B.

## **Annexure A: VHA comments regarding the 3.5 GHz paper**

VHA first makes general comments then provides specific responses to the ACMA's questions in the 3.5 GHz paper.

### *A The ACMA should not favour NBN Co*

VHA notes that NBN Co is a 100% state-owned monopoly. This gives rise to a higher standard of care on the part of the ACMA to ensure that the ACMA's approach do not result in explicit or implicit discrimination. It seems odd in this light that the ACMA's proposals give stronger preference to licence conversion and the granting of greatly enhanced rights and control over spectrum in the hands of NBN Co which has stated publicly that it will not utilise that spectrum in major urban areas (where the mobile industry's need for spectrum is greatest). While the ACMA appears to favour a band clearance and auction in the 900 MHz band where the justifications for a licence conversion is much greater.

The ACMA needs to examine in all its decisions the likely incentives of the various parties. For example, the ACMA cannot underestimate the extent to which NBN Co does not have normal commercial incentives. It is not only a 100% state-owned monopoly but is only deploying fixed-wireless solutions for 4% of the population while having billions of dollars of incentives to minimise competition to its fixed network in remaining 93% of the population where it faces an increasing threat of fixed-to-wireless substitution in downstream markets.

### *B The prima facie case for excising and bringing to market NBN Co's unused spectrum*

VHA appreciates the effort the ACMA has expended in developing the 3.5 GHz paper which demonstrates, at the very least, an insurmountable case to excise and bring to market significant portions of the spectrum set aside for (and not used by) NBN Co. The ACMA has enough data to conclude that there are significant urban areas (where the need for this spectrum is the greatest), where the supply of 5G mid-band spectrum allocated by competitive mechanisms can be expanded by 60% more than the 125 MHz auctioned in 2018. This includes at least the unused spectrum in Sydney and Canberra covering up to ~25% of the Australian population.

VHA has engaged an expert to undertake a study to confirm the extent to which NBN Co's unused spectrum is usable by VHA in the remaining four cities. However, the ACMA should proceed on the basis that there is a clear case for excising NBN Co's unused metro 3.5 GHz spectrum and bringing that spectrum to market through competitive mechanisms.

We note the ACMA has set three broad questions to be resolved before it is comfortable with excising the unused spectrum. Those are:

To identify urban areas that could be used by other operators, the following points need to be considered:

- > NBN Co's current and planned use of their PTS licences, including location of new sites
- > the coverage area of each sector on a site (i.e. the area user terminals are located)
- > Measures required to manage co-channel interference.

VHA addresses each below.

NBN Co's current and planned use of their PTS licences, including location of new sites:

- VHA believes that NBN Co's planned future use of the 3.5 GHz band (including the location of new sites) has been confirmed to be fundamentally limited by the extent of NBN Co's fixed-wireless footprint, which is itself limited to 4% of the Australian population. Mr Bill Morrow (former CEO, NBN Co) confirmed at Senate Estimates in 2018 that NBN Co has no plans to extend its fixed wireless footprint any further into urban areas.
- Furthermore, the ACMA's research as set out in figures 8 and 9 of the paper shows there is a clear boundary beyond which NBN Co has not (and since NBN Co's rollout is reported as being nearing completion, NBN Co will not) deployed fixed wireless sites. While NBN Co has densified the outer metro areas (where NBN Co's fixed wireless footprint is), NBN Co has not deployed any new sites within the core metro areas of each of the six cities. The most obvious opportunities are clearly Sydney and Canberra, where there is an obvious problem with wasting this valuable spectrum – see figure 10 of the 3.5 GHz paper.
- In addition, VHA's initial assessment suggests that NBN Co is not, and will not, have any use of 96% of its 3.5 GHz spectrum as calculated by (number of premises in service) / (total number of premises covered by NBN Co's 3.5 GHz spectrum). Given there is no evidence to suggest NBN Co will expand its fixed wireless footprint "inward", the ACMA can safely assume that 96% of NBN Co's 3.5 GHz spectrum will continue to be unutilised in perpetuity unless appropriate action is taken.
- The ACMA cannot put faith in the option of negotiated access under third-party arrangements (i.e. ACMA's Approach 1) to solve the problem of this enormous waste of spectrum. It is clear the ACMA favours Approach 1 as it would enable a smoother process from the ACMA's perspective to convert NBN Co's apparatus licences to spectrum licences and "facilitate" NBN Co and Optus restacking their spectrum as per its preferred defrag Option 3, either variant. The ACMA illustrated its preferred outcome in figure 19 of the 3.5 GHz paper.
- VHA has serious concerns and objections to this outcome as identified in figure 19 unless clear restrictions are imposed on Optus so that it cannot gain access to this spectrum. More details on this point are made below but in short, if the ACMA's preferred outcome occurs, the most natural user of the NBN Co metro spectrum would be Optus. This may leave Optus with potential access to 175 MHz of spectrum in Sydney and Melbourne, almost three times the amount of spectrum as its nearest rival (at 60 MHz). This outcome should be a major concern for both the ACMA and the ACCC. Both the ACMA and the ACCC should already be aware that the optimal quantum of mid-band 5G spectrum is 100 MHz per carrier, and this outcome would see Optus having access to more spectrum than is efficient, while its downstream rivals have 1/3<sup>rd</sup> as much or less.
- The ACMA may have not fully appreciated NBN Co's strong disincentives to allow third party access to its unused spectrum. As a 100% government-owned fixed-network monopoly, faced with increasing fixed-to-wireless substitution in downstream markets where the

unused 3.5 GHz spectrum would be put to 5G wireless services, NBN Co will have overwhelming commercial incentives and ability to refuse third-party access to this competitively valuable spectrum asset, and may engage in inefficient site builds for the sole purpose of justifying the retention of this spectrum. It is unclear why the ACMA considers that NBN Co would have an incentive to allow access to its metro spectrum once NBN Co's apparatus licences are converted to spectrum licences. Again, this should be a major concern for both the ACMA and the ACCC.

The coverage area of each sector on a site (i.e. the area user terminals are located):

- The nbn fixed-wireless user terminals can be assumed to be fixed in place and inherently limited to outer metro areas. The implication is that any interference issues can be readily managed because unlike mobility services which require complex dynamic inter-working between two mobile devices, the fixed-wireless terminal does not move. Any residual concerns around interference can be resolved by placing an obligation on NBN Co and neighbouring licensees to work in a collaborative manner to safeguard end-user devices from interference on both sides of the licence boundary. We expect NBN Co will confirm this is reasonable and workable in practice once Approach 1 is taken off the table by the ACMA because there is no material technical rationale to explain why interference risks cannot be managed.

Measures required to manage co-channel interference:

- VHA does not expect there to be any significant interference issues that cannot be managed with NBN Co's willing cooperation. VHA believes that there should be a licence condition that requires the synchronisation of neighbouring networks.
- To confirm this, VHA has asked independent third-party industry experts to conduct an exercise on an accelerated basis to determine:
  - whether there are significant interference issues for both potential VHA subscribers and NBN Co subscribers if VHA were to use the metro spectrum; and
  - the extent to which VHA can push its sites close to the NBN Co fixed wireless footprint and/or the nearest NBN Co site while limiting any increases in interference risk (i.e. what is an accurate assessment of the usable spectrum which the ACMA has attempted to illustrate in figure 11 of the 3.5 GHz paper).
- VHA will provide these results to the ACMA as soon as possible and hopes that this will provide the ACMA with sufficient confidence that the unused NBN Co metro spectrum can be used, the boundary of the usable spectrum, and that there is significant market demand for the unused metro spectrum.

Given the above, VHA considers there is a very strong prima facie case for the ACMA to determine that the entire 75 MHz (an increase of 60% compared to the 125 MHz that was auctioned in 2018) unused NBN Co spectrum should be made available to market as soon as possible. This should be an overriding goal as the public benefits to be derived from the use of this spectrum would be overwhelmingly more than any other optimisation proposal the ACMA has put forward with respect



to the 3.5 GHz band. Indeed, any public benefit derived from the ACMA's goal of enabling NBN Co and Optus to restack their spectrum holdings is likely to be miniscule in comparison. VHA is concerned that the ACMA's 3.5 GHz paper does not recognise this anywhere. VHA is concerned that the ACMA have not appropriately considered the objects of the Act.

*C The excise must be done prior to any planning of NBN Co licence conversion*

VHA notes that the following passage from the 3.5 GHz paper:

Approach 1 is available now for wireless broadband operators to investigate. However, Approach 2 requires further investigation by the ACMA to:

- > better understand NBN Co's future requirements in the 3400–3575 MHz band
- > determine an appropriate co-channel interference management technique
- > determine the effect the previous two points would have on the availability of urban areas.

Under Options 2a and 2b, implementation of Approach 2 would delay the conversion process until the above issues are resolved.

Under the preferred option (Option 3b) and Option 3a, this work could commence in parallel to the restack of apparatus licences. However, ideally, relevant work would be finalised before NBN Co's licences are converted to spectrum licences, otherwise agreement would be required to excise any areas before their licences expired (to align with existing 3.4 GHz band spectrum licences, licence expiry would nominally be on 13 December 2030).

Consequently, implementing Approach 2 runs the risk of delaying the conversion and defrag processes.

The ACMA is seeking feedback on whether it should further investigate what, if any, urban areas of NBN Co's PTS licences might be excised under Approach 2. This includes any views stakeholders may have on the appropriate interference management techniques to implement. Since the 3.5 GHz band was made available for use by NBN Co as a result of the 2014 Ministerial direction, the ACMA would consult with the minister before implementing any changes.

VHA notes that Approach 1 is access to the unused NBN Co spectrum via third-party authorisation (i.e., NBN Co remains as the relevant licensee), and Approach 2 is an excise of the unused metro areas and an allocation process.

It is clear the ACMA favours Approach 1, but this appears to be because the ACMA heavily over-values the perceived benefits arising from the conversion and defrag processes. The ACMA points out repeatedly that Approach 2 may "complicate" and "delay" the conversion and defrag process. The ACMA then puts forward the possibility of Approach 2 as a question rather than a presumption and seeks "feedback on whether it should further investigate what, if any, urban areas of NBN Co's PTS licences may be excised under Approach 2." As VHA has outlined above, the prima facie case the ACMA should adopt is Approach 2 and the unused NBN Co metro spectrum must be made

available as soon (i.e., no longer than 2-year allocation period) as possible before any conversion or restacking plans can be made.

If given the choice, NBN Co has no incentive to “give up” its unused metro spectrum, even if there is strong market demand for it. NBN Co has real disincentives to allow access given the increasing downstream threat of fixed-to-wireless substitution enabled by 5G. Under the status quo, only Optus has the optimal amount of mid-band 5G spectrum. If the unused NBN Co spectrum is released to market, both Telstra and VHA could potentially have access to 100 MHz of mid-band 5G spectrum. Common sense dictates that NBN Co would rather compete against only one carrier than all three. The ACMA cannot assume that Approach 1 is a panacea because it is more likely to facilitate the continued waste of spectrum.

VHA notes that if not for the problems caused in the 2300 MHz band by Optus, the current inefficiencies of the unused NBN Co metro spectrum would likely be materially reduced if not non-existent. In a sense, the ACMA’s preferred course of action seeks to reward those that created this problem in the first place.

The ACMA could further guarantee that interference risk is minimised by ensuring appropriate licence conditions are imposed so that the circumstances which lead to the “dead zone” of unusable spectrum between licence boundaries (we understand the ACMA may internally refer to this as the “donut” problem with managing interference between networks at licence boundaries) between NBN Co’s and Optus’ 2300 MHz boundary areas does not occur with respect to the unused metro 3.5 GHz spectrum. The ACMA could impose a relevant licence condition to force synchronisation as a back stop to guarantee peaceful co-existence.

As a corollary, VHA notes that once the NBN Co spectrum is converted into spectrum licences, the synchronisation obligations created by *Radiocommunications Licence Conditions (PTS Licence) Amendment Determination 2018 (No. 1)* will no longer apply to NBN Co. The unintended consequence of this is once NBN Co has spectrum licences, NBN Co would have no incentive to minimise the dead zone surrounding the unused metro spectrum, and the mistakes that occurred with regard to the 2300 MHz band will be repeated.

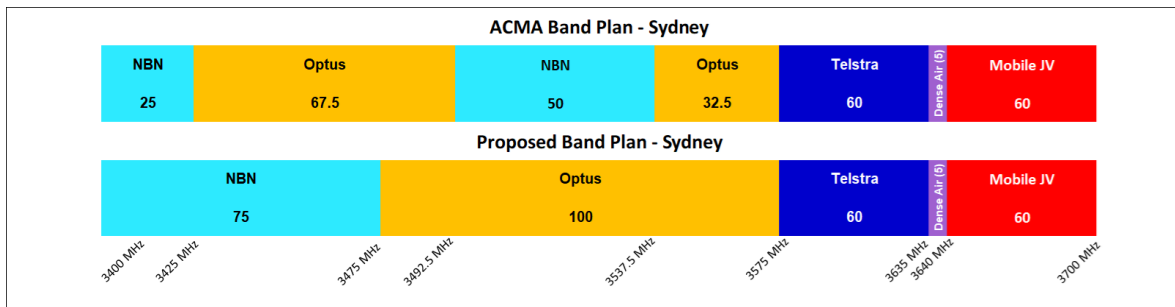
Lastly, the ACMA has identified that if the excise does not occur prior to a licence conversion, then the next available opportunity is likely 2030, unless NBN Co agrees to an excise after conversion. If the ACMA follows its preferred path of conversion first without a concrete plan to excise the unused metro spectrum, the ACMA would risk an entrenchment of inefficiencies in the 3.5 GHz band until 2030.

In conclusion, the only reasonable path forward is to commit to an excise and aim to auction the unused NBN Co metro spectrum by 2021. This would impose a range of necessary incentives for both NBN Co and Optus to seek a resolution with respect to the restack before that deadline and ensure that the unused spectrum is utilised as soon as possible.

#### *D The ACMA’s preferred band structure may lead to anticompetitive outcomes*

The ACMA must ensure constraints are placed on Optus so that it cannot gain access to the unused NBN Co metro spectrum. VHA notes that the ACMA’s preferred structure of the band is illustrated in

figure 19 of the 3.5 GHz paper. Under the ACMA's preferred outcome, NBN Co's spectrum holdings would be pushed to the bottom of the 3.4-3.7 GHz band, see below for Sydney:



This would mean that the natural user of the unused spectrum is Optus, who would then have 175 MHz of valuable mid-band 5G spectrum in Sydney and Melbourne. In effect, Optus would have almost three times more spectrum than its nearest competitor.

VHA is not opposed to the ACMA's preferred band structure but VHA has strong views that Optus must be prevented from gaining access to the unused metro spectrum. If the ACMA does not prevent Optus from gaining access to this spectrum, such an outcome would have significant market altering implications for competition in downstream markets as Optus will hold insurmountable amounts of high capacity spectrum for 4G (100 MHz of 2300 MHz spectrum) and 5G (175 MHz of 3.5 GHz spectrum) networks which no downstream rival can hope to match.

#### *E Approach 2 still supports Government policy*

Finally, as the ACMA would rightly point out, the object of the Act includes supporting the communications policy objectives of the Commonwealth Government. In VHA's view, this is no barrier to the ACMA finding a flexible and workable solution which ensures that NBN Co has access to the 3.5 GHz spectrum where it has a critical need, while at the same time putting to market the unused portion of the 3.5 GHz spectrum. In VHA's view, the ACMA can better support the objects of the Act by pursuing Approach 2.

In comparison, Approach 1 would not be consistent with the object of maximising, by ensuring the efficient allocation **and use of the spectrum**, the overall public benefit derived from **using the radiofrequency spectrum**, in accordance with clause 2 of the Act.

The ACMA appears to have not fully appreciated the fact that the public benefits derived from the **use** of the spectrum in circumstances where the spectrum is unused and is unlikely to be used in the future is overwhelming, particularly as this unused spectrum covers the six most populated Australian cities and is prime 5G mid-band spectrum. While there are likely some efficiencies to be gained from NBN Co and Optus restacking their holdings, the benefit that is expected to be derived is miniscule in comparison to the benefits that would be realised from excising and bring onto the market NBN Co's unused metro spectrum.

#### *F Responses to specific ACMA questions*

1. Do stakeholders have any comments on the case for action in the 3400–3575 MHz band?

VHA believes that the overwhelming case for action in the 3400-3575 MHz band is to ensure the unused NBN Co metro spectrum is excised and made available to market as soon as possible. Once that has been resolved, the ACMA can proceed to make plans to convert NBN Co's licences and defrag the band (including making more spectrum available in regional areas).

2. Do stakeholders have any comments on the planning options identified? Are there any other planning options that should be considered? (Please provide reasoning.)

VHA believes that the overwhelming case for action in the 3400-3575 MHz band is to ensure the unused NBN Co metro spectrum is excised and made available to market as soon as possible. Once that has been resolved, the ACMA can proceed to make plans to convert NBN Co's licences and defrag the band (including making more spectrum available in regional areas).

3. Do stakeholders have any comments on the planning goals for the 3400–3575 MHz band? Are there any other planning goals that should be considered?

VHA believes that the primary goal is to ensure the unused NBN Co metro spectrum is excised and made available to market as soon as possible. Once that has been resolved, the ACMA can proceed to make plans to convert NBN Co's licences and defrag the band (including making more spectrum available in regional areas).

4. If Option 2a or 2b are adopted, do stakeholders have views on how long the re-allocation period should be?

VHA believes that the reallocation period for the unused NBN Co metro spectrum should be as short as possible (i.e. 2 years).

5. If Option 3a or 3b are adopted, do stakeholders have views on the period of time incumbent apparatus licensees should be given to implement restack? (Noting effected licences would not be reissued on existing frequencies beyond this point.)

In so far as this question applies to the unused NBN Co metro spectrum, VHA believes that 2 years is more than enough.

6. If Option 3a or 3b are adopted, do stakeholders have views on how long the re-allocation period should be?

VHA believes that the reallocation period for allocating the unused NBN Co metro spectrum should be as short as possible (i.e. 2 years).

7. Do stakeholders have any comments on the assessment of planning options against the principles?

VHA believes that when assessed against the Management Principles and more importantly the objects of the Act, the overwhelming case is to ensure the unused NBN Co metro spectrum is excised and made available to market as soon as possible. Once that has been

resolved, the ACMA can proceed to make plans to convert NBN Co's licences and defrag the band (including making more spectrum available in regional areas).

8. Is there any relevant evidence that provides an indication of the value wireless broadband operators place on how additional spectrum is made available (i.e. under spectrum or apparatus licensing arrangements)?

In so far as this question applies to the unused NBN Co metro spectrum, VHA believes that this spectrum should be made available as spectrum licences.

9. Do stakeholders have any comments on the preferred planning option for remote areas?

N/A

10. Should the broader 3400–3700 MHz band be considered when expanding arrangements for PMP in remote areas?

N/A

11. Do stakeholders have any comments on the preferred planning option for metropolitan areas, regional areas and major regional centres?

VHA believes that the primary goal is to ensure the unused NBN Co metro spectrum is excised and made available to market as soon as possible. Once that has been resolved, the ACMA can proceed to make plans to convert NBN Co's licences and defrag the band (including making more spectrum available in regional areas).

Neither of the ACMA's proposed options provide a satisfactory path to ensuring the unused NBN Co metro spectrum is excised and made available to market as soon as possible.

12. Would an earlier conversion of NBN Co's PTS licences in metropolitan areas provide greater certainty for negotiations on defrag to occur?

No. As VHA has submitted, a conversion of the NBN Co licence before the unused spectrum is excised is counterproductive and ensures inefficiencies become permanent.

13. Are the existing third-party authorisation arrangements (Approach 1) sufficient to facilitate access to urban areas of NBN Co's PTS licences by other operators? If not, should the ACMA investigate what, if any, urban areas might be available under Approach 2?

No. VHA strongly opposes Approach 1. [c-i-c begins] [REDACTED]  
[REDACTED]  
[REDACTED] [c-i-c ends]. As VHA has submitted above, NBN Co has real disincentives to allow access.

VHA strongly supports Approach 2. The ACMA must ensure there are concrete plans to excise the unused spectrum and bring it to market before NBN Co's licences can be converted.

14. Do stakeholders have any views on what co-channel interference management technique should be applied under Approach 2?

VHA believes that the risk of interference is overstated. Synchronisation of network timings is a workable solution to managing interference which is already imposed on PST licensees in the 3.5 GHz band. VHA strongly prefers the management approach which maximises the usable area. Therefore, subject to further analysis, VHA at present favours a site-based coordination approach.

## Annexure B: VHA comments regarding the 900 MHz paper

As noted above, VHA has serious concerns with the ACMA's different approaches to the 3.5 GHz and the 900 MHz bands to address what could be perceived as similar concerns. The ACMA proposes to take back and re-allocate 900 MHz spectrum which VHA has a critical reliance on for 3G and NB-IoT networks, in the hope of bringing incremental optimisation to the 900 MHz band. At the same time, the ACMA is proposing to give a long-term spectrum licence to NBN Co for 75 MHz of valuable 5G spectrum covering the top six major Australian cities, which NBN Co does not use and will not use in the future.

*A The ACMA's proposed approach will not result in the outcome it hopes to achieve*

VHA notes that the ACMA's desired outcomes for the 800 and 900 MHz band are as follows, from the 900 MHz paper:

In considering the preferred approach to reconfiguring the band, the ACMA is guided by the objects of the *Radiocommunications Act 1992* (the 'Act'), as well as the Principles for spectrum management.

In addition, the ACMA has identified a set of outcomes from the proposed reconfiguration process that could be used to assess the success of the reform. To be considered an effective reform process, the reconfiguration of the band should:

- > result in the band being spectrum licensed
- > facilitate the 1 MHz downshift in the 800 MHz spectrum licences by allocating the 2 x 1 MHz that is below the 850 MHz spectrum licences (thereby removing a key regulatory impediment to achieving the downshift)
- > result in the band being configured in 5 MHz channels
- > result in licensees being charged a market price, or a price informed by relevant market outcomes
- > enable licensees to mitigate risks to the continuity of consumer services.

VHA submits that the ACMA's preferred approach of a 900 MHz clearance and auction in conjunction with the 850 MHz expansion spectrum is unlikely to achieve the 1 MHz downshift nor ensure the lowest block of the 900 MHz band is free from interference.

[c-i-c begins]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]

- [REDACTED]

- [REDACTED]

[REDACTED]

- [REDACTED]

- [REDACTED]

[REDACTED]



[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] [c-i-c ends]

*B VHA's proposal has the best chance of achieving the majority of the ACMA's goals*

VHA believes that the ACMA ought to negotiate a downshift with VHA and Telstra. For its part, [c-i-c begins] [REDACTED] [c-i-c ends]  
VHA would seriously consider voluntarily executing a downshift prior to 2028 if its access to 900 MHz can be guaranteed by spectrum licences on the existing payment terms until 2028 to coincide with the expiration of VHA's 850 MHz licence. VHA would suggest that the 900 MHz spectrum licence is structured as 5 MHz, 2.5 MHz and residual MHz lots, which would encourage the licence holders to organise the band to the most efficient configuration in the circumstances.

VHA believes that by taking the option of auctioning 900 MHz spectrum off the table, the ACMA will have the best chance of achieving a voluntary 850 MHz downshift by both VHA and Telstra thereby enabling the use of the lowest 5 MHz block of the 900 MHz band.

VHA notes that under VHA's proposal, the ACMA's goal of pricing the licence by relevant market outcomes would be delayed until 2028. In VHA's view, there are good reasons to accept this as a necessary delay to ensure the bottom 5 MHz block of the 900 MHz spectrum is freed up for use as soon as possible.

*C Inconsistencies in the ACMA's approach*

VHA believes there are substantial inconsistencies between the way the ACMA has approach the NBN Co apparatus licence in the 3.5 GHz band and the 900 MHz band licences. On one hand, the ACMA says that converting NBN Co's apparatus licences to spectrum licences including in major metro areas where NBN does not and has said that it will not use the spectrum, will somehow encourage market trading to restack the spectrum in the hope that this ultimately leads to greater public benefits. However, on the other hand the ACMA refuses to consider a conversion of the 900 MHz apparatus licences into spectrum licences despite the fact that VHA has deployed infrastructure relying on this spectrum on over 5,500 sites and its customers remain heavily reliant on this spectrum for 3G services especially voice services.

VHA believes that there is a substantially stronger case for converting the 900 MHz into spectrum licences in 5 MHz, 2.5 MHz and residual MHz lots would ensure the right incentives are present for the carriers to reorganise the band efficiently. While in comparison, converting the NBN Co licences into spectrum licences however will most likely entrench inefficiencies given the strong disincentives for NBN Co to grant access to its unused 3.5 GHz spectrum.

VHA has consistently advocated that the carriers have different uses for the 900 MHz spectrum. In the case of Telstra, it does not appear to be widely using it (in VHA's view this is largely because Telstra holds nearly 50% of the allocated low-band spectrum available to the mobiles industry) and is the only carrier with large contiguous holdings in other low bands. Given this, the ACMA must consider whether Telstra has a need for low band spectrum, and in any case be cautious in prioritising the interests of the holder of nearly half the low-band spectrum over smaller rivals. VHA has consistently made the ACMA aware of the disruption a band clearance would cause, and that this disruption would apply in a disproportional way, which the ACMA does not appear to have given equal consideration.

Given there are radically different needs amongst carriers with respect to the 900 MHz spectrum, the ACMA ought to adopt a responsive and flexible approach to meeting the needs of all the relevant users of spectrum. VHA cannot understand why the ACMA would want to give the impression that it elevates its consideration of Telstra's needs in circumstances where Telstra.

Lastly, VHA also notes that in relation to the 900 MHz spectrum, the ACMA specifically highlights an objective of ensuring market prices are achieved for the 900 MHz licences, whereas the ACMA is largely silent on this as a goal for conversion of the NBN Co's 3.5 GHz licences.

*D Responses to specific ACMA questions*

1. The ACMA identified a set of outcomes to be achieved from this process—are these the appropriate outcomes? Are there any other additional outcomes that should be included in this analysis?

The ACMA should explain in more detail how it believes the 1 MHz downshift can be achieved under its proposal. VHA's understanding of the way the ACMA envisages it to work is it hopes the right auction participant acquires the necessary spectrum to facilitate the downshift by commercial negotiation.

VHA has outlined to the ACMA why it believes the ACMA's proposal will unlikely achieve the desired outcome and has presented an alternative solution.

2. Are the reform options presented in this paper appropriate, and are there any implementation issues that haven't been identified?

No. An auction of the 900 MHz band will unlikely achieve the ACMA's desired outcomes.

3. Stakeholders raised concerns that the mid-2021 clearance date will result in consumer service discontinuity. Does the proposed mid-2024 clearance date provide enough time to create an alternative pathway for the deployment of services at risk?

[c-i-c begins] [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [c-i-c ends]

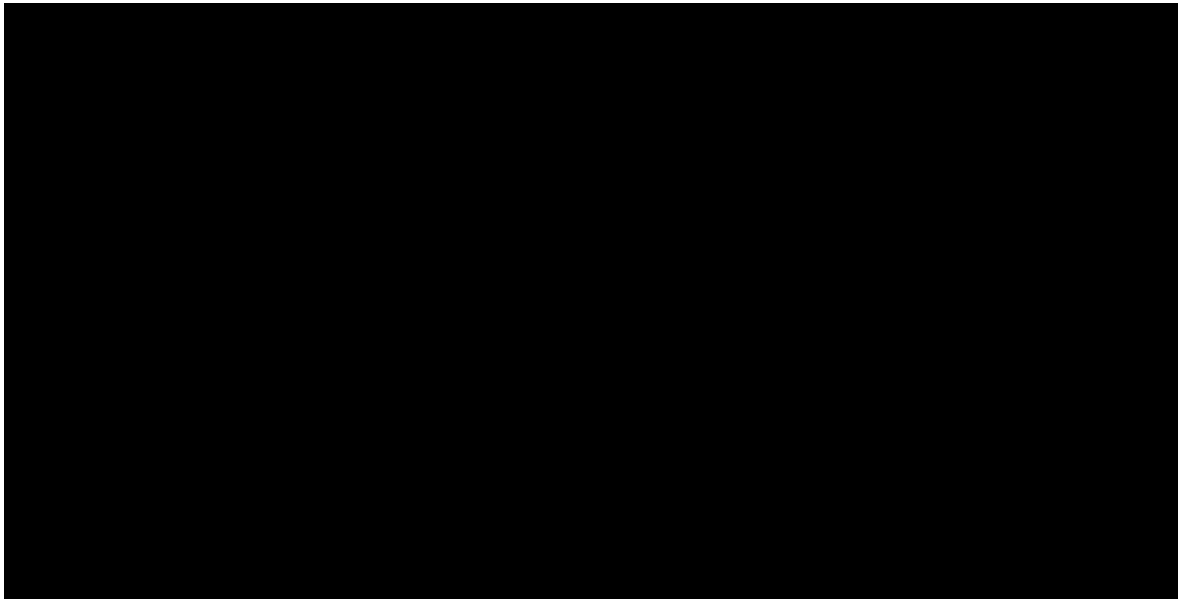
The ACMA must recognise the disproportionate impact its proposals have on some carriers and must adopt a responsive and flexible approach to meet the spectrum needs of all relevant users.

4. Can stakeholders provide up-to-date information on consumer migration to 4G compatible handsets, including estimates of the numbers of consumers yet to migrate, and information on the timing and speed of consumer migration?

[c-i-c begins] [REDACTED]

[REDACTED]

[REDACTED]



[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] [c-i-c ends]

5. The encumbered auction option includes an approach whereby incumbent apparatus licences and spectrum licences would potentially 'overlap'. Do stakeholders have any concerns with this proposed approach?

VHA opposes both the encumbered auction option and the hybrid option.

6. Are there any issues associated with the hybrid option that raise any concerns for stakeholders?

VHA opposes both the encumbered auction option and the hybrid option.

7. Are there any other mitigation techniques to consider that support reconfiguration of the band into 5 MHz configuration whilst mitigating risks to consumer services?

N/A

8. The ACMA may progress reconfiguration of 900 MHz independently of the allocation of the 850 MHz expansion band. Would doing so change the view on the optimal approach to reconfiguration?

VHA believes that it is the wrong approach for the ACMA to bundle its consideration of the 900 MHz band with the 850 MHz expansion band. The two bands involve different issues and need different approaches.

VHA believes that the 850 MHz expansion band auction should occur closer to the 2024 reallocation period.



VHA believes that the 900 MHz apparatus licenses should be converted to spectrum licences and provided back to the existing holders in 5 MHz, 2.5 MHz and residual MHz blocks until 2028 to coincide with the expiration of the 850 MHz licences.

9. The ACMA is aware that due to public safety mobile broadband (PSMB) negotiations there is a request to set aside 2 x 5 MHz of spectrum for a PSMB network. While the lot location for this spectrum in the 850 MHz expansion band has not been identified, it is expected that the remaining blocks at the top or bottom of the band would be put to market. Do stakeholders have a view on the relative technical efficiency of the remaining blocks of spectrum for carrier services?

VHA believes that the 5 MHz set aside for PSMB should be at the bottom of the 850 MHz expansion band. This preserves the possibility of forming a contiguous 20 MHz block with the 850 MHz band. As the ACMA is aware, 20 MHz is the most optimal size carrier for 4G.

10. The Draft five-year spectrum outlook 2019–23 (FYSO) forward allocation scenarios outlined the feasibility of allocating the 850 MHz expansion band and 900 MHz band at the same time as 26 GHz band, which, at the time of publication of this paper, is expected to be in Q1/2 2020–21. Do stakeholders have a view on the timing of the proposed allocations?

VHA does not support the ACMA's proposal to conduct a low band auction immediately after the 26 GHz auction (or vice versa) in the second half of 2020. VHA understands that the sole reason for the ACMA's proposal is the potential for administrative synergies from holding two auctions in quick succession, under one administrative process.

VHA believes the administrative synergies arising from the ACMA's proposal are likely to be minimal and cannot outweigh the unprecedented uncertainties and difficulties which would arise in attempting to auction the 850 MHz expansion spectrum 4 years in advance of its availability, in circumstances where it is unclear how much low band spectrum will be needed to support 5G services.

If the spectrum bands to be auctioned were substitutes or complements, then the case could be different, but the 850 MHz expansion and 26 GHz spectrum bands are neither substitutable nor complementary, and therefore [c-i-c starts]

[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] [c-i-c ends].

Given this, the ACMA's assumed administrative synergies arising from running two auctions one after the other in the same process is very limited and we anticipate would have a negative impact.