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# **TELSTRA CORPORATION LIMITED**

## **Reconfiguring the 900MHz band**

### **Public submission**

**30 May 2019**



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## CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>3</b>
<b>01 The band should be reconfigured into 2x5MHz channels</b>	<b>4</b>
<b>02 The ACMA should proceed with a modified option 1</b>	<b>4</b>
2.1. Option 1 – the proposed ‘encumbered’ auction	4
2.2. Option 2 – the hybrid option	5
<b>03 Timing considerations</b>	<b>5</b>
<b>04 Facilitating the 1MHz downshift</b>	<b>5</b>
4.1. Other options to achieve implementation of the 1MHz downshift before 2028	6
<b>ATTACHMENT A: Answers to specific questions</b>	<b>7</b>



## EXECUTIVE SUMMARY

Access to quality mobile broadband (MBB) services has become an indispensable part of life for most Australians and is an important contributor to economic growth. The adoption of more sophisticated MBB devices and services, as well as the quantity of data exchanged, continues on an exponential growth trajectory, underpinned by the ongoing development of 4G technology and now also with the introduction of 5G technology. Ensuring mobile network operators have access to appropriate amounts of efficiently configured spectrum is vital for ensuring they continue to deliver the mobile services sought by consumers.

### **The entire 900MHz band should be reconfigured into 2x5MHz channels and auctioned**

Spectrum in the 900MHz band (890-915/935-960MHz) is a highly valuable resource for the delivery of MBB services and, while the current configuration was suitable for 2G services, it no longer allows for the most efficient use of this spectrum with later technologies. Clearing the band and reconfiguring it into 2x5MHz channels will result in more efficient use of the spectrum and therefore maximise the public benefit from using the spectrum.

### **The spectrum in the 900MHz band and the 850MHz band should be auctioned together**

We support the ACMA's proposal to allocate the spectrum available in the 850MHz expansion band at the same time as the reconfigured 900MHz band. The substitutability of spectrum in these two bands, combined with the relatively small size of each of the bands, means there are benefits in bringing them to market in a coordinated manner. Separate allocation of the bands would likely result in mobile network operators acquiring smaller, more fragmented (and therefore inefficient) holdings across the two bands.

### **Commencement of the spectrum licences should be deferred until mid-2024**

If it is determined incumbent users of the 900MHz band require until mid-2024 to clear the band, the spectrum licences allocated in the auction should not commence until that time (and the associated payment should not be required until shortly prior to licence commencement). We do not see value in issuing encumbered spectrum licences several years before the incumbent users will be required to vacate the spectrum as proposed under option 1. Where incumbent users are successful at auction, they could progressively transition from their existing frequency range to the range they acquire at auction using 'early access' apparatus licences, subject to working around the incumbent users (or coming to an agreement with them). This approach also provides the benefit of enabling the spectrum licences for the 900MHz and 850MHz expansion bands to have aligned commencement and expiry dates.

### **The 2x1MHz segment of spectrum required to implement the 1MHz downshift of the 850MHz band should be attached to the lowest lot in the 900MHz band**

The full benefits of reconfiguring the 900MHz band into 2x5MHz channels will not be realised without implementing the 1MHz downshift of the existing 850MHz band (which cannot occur prior to 2028 without the consent of existing 850MHz spectrum licensees). While the proposed allocation of the 2x1MHz segment is a necessary condition for achieving the 1MHz downshift prior to 2028, it is not enough: a commercial arrangement with both licensees in the 850MHz band would also be required. Attaching the 2x1MHz segment to the lowest 900MHz block to be sold, would provide the purchaser of that block with the means to seek such a commercial agreement. However, the conditions of attaching the segment to the lower block must not preclude the ACMA from 'forcing' the downshift on expiry of the existing 850MHz licences in 2028 and in the absence of a commercial agreement.

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## 01 The band should be reconfigured into 2x5MHz channels

We welcome the opportunity to respond to the Australian Communication and Media Authority (ACMA) on the proposed way forward for reconfiguring the 890-915/935-960MHz band (900MHz GSM band) and reallocating the 850MHz expansion band.

Mobile services and mobile broadband (MBB) have become an indispensable part of life for most Australians. The growth, both in the adoption of more sophisticated MBB devices and services, as well as the quantity of data exchanged, continues an exponential trajectory. The *Mobile Nation 2019 – The 5G Future*<sup>1</sup> report by Deloitte Access Economics found that the mobile industry continues to make a significant contribution to Australia's economy. In 2017-18 the mobile industry contributed \$23 billion of value to GDP. By 2023, this figure is estimated to grow to a total of \$65 billion, or 3.1% increase in GDP.

Spectrum in the 900MHz GSM band is a highly valuable resource for the delivery of MBB services. Like other spectrum in the other sub-1 GHz bands, it has excellent propagation characteristics for coverage and in-building penetration. It is vital that the spectrum in this band is allocated in a way that maximises the benefits to the community. Reconfiguring the band into 2x5MHz channels will allow for the most efficient use of the spectrum.

It has been suggested there will be technological advances in the 4G and 5G standards that may allow the use of smaller fragments of spectrum there is no longer a need to reconfigure the 900MHz band into five 2x5MHz lots.<sup>2</sup> We do not believe this is a sufficient argument for the maintenance of the status quo or adopting some other lot configuration with a smaller lot size. The vast majority of 3GPP uses are based on multiples of 2x5MHz of spectrum, and only new equipment and user devices would support any new standards using smaller or different bandwidths.

## 02 The ACMA should proceed with a modified option 1

As communicated in our previous submissions on the 900MHz band, we believe the most effective way to achieve the reconfiguration of the band is to clear it and conduct a price-based allocation. This would result in the most straightforward, certain and timely way of moving the spectrum to its highest value configuration and use.<sup>3</sup>

### 2.1. Option 1 – the proposed 'encumbered' auction

We support a modified version of option 1. We are pleased the ACMA is proposing to allocate the 850MHz expansion band and the 900MHz band in the same price-based allocation. Each of these bands is relatively small, and if allocated individually would likely result in small and fragmented holdings that do not make optimal use of this low band spectrum. Allocating them together maximises the opportunity for MNOs to acquire larger contiguous blocks of spectrum and therefore facilitates more efficient use of spectrum. We agree with the ACMA that long term spectrum licences with strong property rights will encourage long-term investment to develop new technologies and provide greater flexibility for deploying new services.

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<sup>1</sup> Deloitte Access Economics, *Mobile Nation 2019 – The 5G Future*, p1 & p.24.

<sup>2</sup> Vodafone, *Reconfiguring the 890-915 MHz / 935-960 MHz band: Submission to the Australian Communications and Media Authority*, March 2017.

<sup>3</sup> Telstra, *Reconfiguring the 890-915/935-960 MHz Band*, 7 March 2017.



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Under this option, with incumbent users having until mid-2024 to vacate the band, it is essential the new spectrum licences do not commence until immediately prior to the vacation date. There are several reasons for delaying commencement:

- It is unreasonable to expect successful bidders to pay for spectrum licences which could be significantly encumbered, and therefore have limited utility, for several years after the spectrum licences commence.
- The delay would align commencement (and therefore expiry) of the spectrum licences in the 900MHz band with those in the 850MHz expansion band, simplifying any future alignment with the existing 850MHz band licences.
- An 'early access' apparatus licensing regime (like that adopted after the 700MHz, 1800MHz and 3.6GHz auctions) is the best way to balance between early use of a future spectrum right secured at auction and the rights of incumbents during the interim period.

We believe the interests of successful bidders and the migration of existing services would be best served by commencing the spectrum licences in mid-2024. Providing incumbent users until mid-2024 gives existing licensees enough time to make alternative plans, either to move out of the band or to move to alternate spectrum in the band acquired at auction.

## **2.2. Option 2 – the hybrid option**

We do not support the hybrid option. The current arrangement in the 900MHz band is now 27 years old and should not form the basis of any future reallocation. The entire band needs to be offered to the market and the market needs to be able to make a fresh assessment of the value of this spectrum, unconstrained by legacy considerations.

Option 2 is also undesirable because it does not include an assignment stage after the residual spectrum is allocated in a price-based allocation. This runs the significant risk of producing fragmented holdings and clearly biases the auction dynamics. An auction where two of the potential participants can, effectively, bid on only one lot, while one of the potential participants can shift their demand between two different lots is untenable.

## **03 Timing considerations**

We believe the ACMA's top priority is to allocate the 26GHz band. Timely access to the 26GHz band is critical to delivering the fastest MBB services 5G can offer.

We are concerned about the ACMA's proposal to allocate the 26GHz band at the same time as the 850MHz expansion and 900MHz bands, as combining these auctions would risk delaying the 26GHz auction in the event there is a lack of industry agreement on how the two low bands should be replanned or auctioned. We therefore recommend the 26GHz band reallocation process be conducted independently of, and at a higher priority level than, the deliberations over the 900MHz and 850MHz expansion bands.

## **04 Facilitating the 1MHz downshift**

We have long supported a 1MHz downwards shift of the existing 850MHz band to maximise the utility of the lower frequencies in the 900MHz GSM band, and especially the lower 5MHz block in the



reconfigured band.<sup>4</sup> The ACMA has previously stated this downshift should occur when the 850MHz licences expire in 2028 and, if possible, would consider ways to bring the shift forward so the benefits can be realised sooner.<sup>5</sup>

The 1MHz downshift will assist to realising the full benefits of reconfiguring the 900MHz band into 2x5MHz channels, so we support efforts being made to achieve the downshift earlier than 2028. While the proposed allocation of the 2x1MHz segment is a necessary condition for achieving the downshift prior to 2028, it is not enough: a commercial arrangement with both licensees in the 850MHz band would also be required.

Attaching the 2x1MHz segment to the lowest block in the 900MHz band provides the party who will be the beneficiary of the reduced interference with the means to seek a commercial agreement with the existing 850MHz licensees. However, there is no guarantee a commercial agreement will be reached. Since any early downshift would still be subject to a (potentially tripartite) commercial agreement being reached with the existing spectrum licensees in this band, we believe the appropriate allocation of the 2x1MHz segment needs to satisfy two criteria:

- It needs to provide appropriate incentives for a commercially negotiated outcome.
- It should not stand in the way of an ACMA initiated downshift at the expiry of existing licences in the 850MHz band if a commercially negotiated downshift does not occur earlier than 2028.

However, we think the ACMA could do more to achieve implementation of the down shift earlier.

#### 4.1. Other options to achieve implementation of the 1MHz downshift before 2028

If option 1 (or a variation of it) is pursued, the ACMA could impose a condition on participation in the 900MHz auction requiring existing 850MHz spectrum licensees to agree to shift their 850MHz spectrum licence down by 1MHz. This condition could stipulate the downshift must be completed before commencement of the 900MHz spectrum licences, regardless of whether that applicant is successful in acquiring 900MHz spectrum or not. If an applicant who is an 850MHz spectrum licensee at the time of application does not wish to accept this condition, they will not be able to be a bidder in the 900MHz auction.

While remaining strongly opposed to option 2, if a hybrid proposal is considered worth pursuing, at an absolute minimum the existing proposal would need to be modified to achieve:

- The reconfiguration of the 900MHz band into 2x5MHz lots.
- Implementation of the 1MHz downshift earlier than 2028 when the existing spectrum licences expire.
- Contiguous spectrum holdings for all spectrum licensees in the 900MHz band.

Each of the three incumbents could be allocated a 2x5MHz lot with an assignment stage conducted after completion of the auction of the two additional 2x5MHz lots. The two existing 850MHz licensees would need to agree to implement the 1MHz downshift as a precondition of the administrative allocation.

<sup>4</sup> Telstra, *The 803-960MHz band – exploring options for change*, 22 February 2013.

<sup>5</sup> Australian Communications and Media Authority, *Reconfiguring the 890–915/935–960MHz band: Way forward*, p. 23-24.

## ATTACHMENT A: Answers to specific 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?**

Yes, we generally consider the outcomes identified by the ACMA to be the appropriate set of outcomes. However, we question the ACMA's assessment about whether the proposed options will achieve these outcomes. For example, the ACMA has assessed option 1 as meeting the requirement to facilitate the 1MHz downshift. While the proposed encumbered auction will allocate the 2x1MHz segment of spectrum necessary for the 1MHz downshift, this of itself will not achieve the downshift. Rather than facilitate the downshift, it will remove the regulatory obstacle. As outlined in section 4, we believe more needs to be done to implement the downshift earlier than 2028.

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

As outlined in section 2.1, a modified version of option 1 is our preferred position. We believe the ACMA should proceed with a price-based allocation of the 850MHz expansion and 900MHz bands at the same time, but the licences should not commence until mid-2024. We believe the interests of successful bidders and the migration of existing services would be best served by commencing the spectrum licences in mid-2024. Providing incumbent users until mid-2024 gives existing licensees enough time to make alternative plans, either to move out of the band or to move to alternate spectrum in the band acquired at auction.

As outlined in section 2.2, we do not support the hybrid option. The current arrangement in the 900MHz band is based on legacy technology and should not form the basis of any future reallocation. It also fails to include an assignment stage after the residual spectrum is allocated in a price-based allocation, which runs the significant risk of producing fragmented holdings.

- 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?**

The proposal to reconfigure the 900MHz band into 2x5MHz lots has been the subject of consultation since 2015.<sup>6</sup> We believe allowing incumbent users until mid-2024 provides enough time to allow migration of customers to services delivered by alternative means.

- 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?**

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- 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?**

Yes, we don't believe it's necessary or desirable to issue encumbered spectrum licences. It's unreasonable to expect a successful bidder to pay immediately for an asset that might be largely

<sup>6</sup> ACMA, *The ACMA's long-term strategy for the 803–960MHz band: Decision paper*, November 2015.





unusable until mid-2024. If it is determined incumbent users of the 900MHz band require until mid-2024 to clear the band, the spectrum licences allocated in the auction should not commence until the clearance date (and payment for the spectrum licences should only occur shortly prior to licence commencement). Incumbent licensees that need to 'migrate' to another part of the band can do so through using early access apparatus licences that are coordinated with existing licences.

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

As explained in section 2.2, we do not support the hybrid option.

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

Yes, as noted in section 2.1, we support setting a reasonable time (the ACMA has proposed until mid-2024) for incumbent licensees to make alternative plans for impacted services in the band. Coordinated early access apparatus licences can be made available as an option for incumbent licensees who need to migrate services prior to new licences purchased at auction becoming available. Commercial agreements between existing and future licensees are another potential option for facilitating early migration.

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

No, as noted above, we believe the reconfiguration of the 900MHz band into 2x5MHz channels is necessary to improve efficient use of spectrum and a price-based allocation is the most effective way of achieving that reconfiguration. However, as set out in section 2.1, we believe there are significant benefits in auctioning the two bands in the same price-based allocation. In particular, MNOs are more likely to be able to acquire larger blocks of contiguous spectrum.

**9. The ACMA is aware that due to public safety mobile broadband (PSMB) negotiations there is a request to set aside 2x5MHz of spectrum for a PSMB network. While the lot location for this spectrum in the 850MHz 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?**

We believe PSMB should be located at the bottom end of the 850MHz expansion band, with the 2x10MHz to be allocated by price-based allocation being at the upper end of the band. This allows the additional commercial spectrum to be adjacent to the existing 850MHz licences so that the possibility of contiguous Band 26 spectrum is created.

**10. The Draft five-year spectrum outlook 2019-23 (FYSO) forward allocation scenarios outlined the feasibility of allocating the 850MHz expansion band and 900MHz band at the same time as 26GHz 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?**

As noted in section 3, we believe the ACMA's top priority is to allocate the 26GHz band. We are concerned the ACMA's proposal to allocate the 26GHz band at the same time as the 850MHz expansion and 900MHz bands creates a risk of delay to the 26GHz auction. We therefore recommend the 26GHz band reallocation process should be conducted independently of, and at a higher priority level, than the deliberations over the 900MHz and 850MHz expansion bands.