



TELSTRA CORPORATION LIMITED

Submission to the Australian Communications and Media Authority

**Draft allocation instruments for 26 GHz band (25.1-27.5 GHz)
metropolitan and regional lots auction**

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Executive Summary

We appreciate the opportunity to respond to the consultation being held by the Australian Communications and Media Authority (**ACMA**) on draft allocation instruments for the 26 GHz band (25.1-27.5 GHz) metropolitan and regional lots auction (**consultation paper**) and the proposed spectrum licence technical framework.

Access to spectrum in the 26 GHz band is critical for enabling the very fastest 5G services to be delivered to Australian consumers and businesses. So, it is important the allocation instruments and the accompanying technical framework enable the spectrum to be auctioned and used in a timely and efficient manner. To this end, we are pleased to see the indicative timeline (table 3)¹ for the auction commencement date to occur in late March 2021. It is important that this timeline is maintained to avoid delaying the benefits of deploying 5G technology in this band.

We welcome most of the proposed arrangements in the allocation instruments but do have some specific suggestions and concerns, as explained below.

Lot configuration

We do not support the proposal for lot sizes to be 200 MHz (resulting in 12 x 200 MHz of generic lots).

Our strong preference is to have 24 x 100 MHz lots with a single product category across all areas except Greater Perth, Hobart and Margaret River. This will result in 30 separate product categories. Offering the spectrum in lot sizes of 100 MHz will allow for greater flexibility for all bidders to obtain their desired allocation and will also allow for clean delineation between lots below 27 GHz and lots above 27 GHz which are subject to two different sets of maximum emission power limit parameters.

Two categories are required in Greater Perth, Hobart and Margaret River to reflect the greater constraint on permissible emission levels above 27.0 GHz. In each of these three areas, one category would consist of 19 lots in the 25.1–27.0 GHz range and the other would consist of 5 lots in the 27.0–27.5 GHz range.

We support the geographic configuration as proposed in the draft marketing plan including the creation of a single “Greater Perth” product. We believe the proposed amalgamation would also make sense if 100 MHz lot sizes were adopted, as the creation of a single Greater Perth product is beneficial for a range of reasons including providing frequency consistency between Perth and Bunbury in the 25.1-27.0 GHz range, avoiding an unnecessary licence border.

Commencement and conclusion dates for spectrum licences

The ACMA has proposed that while all spectrum licences will enjoy the maximum 15-year term, they may have differing commencement and conclusion dates depending on when winning bidders elect to make payment. We are concerned that this approach unnecessarily complicates potential future spectrum trades and defragmentation of the band:

- differing licence expiry dates will frustrate any potential future licence amalgamation; and
- spectrum swaps by agreement via changes to the frequency range core condition in licences may no longer involve like-for-like licences and hence require financial considerations to also be negotiated.

¹ “Draft allocation instruments for 26 GHz band (25.1-27.5 GHz) metropolitan and regional lots auction Consultation paper”, table 3, page 9

To remove this potential future complexity in trading and swaps, and the disproportionate administrative overhead that may be caused, we recommend all spectrum licences be issued with a common expiry date.

Draft Allocation Determination

We support the use of the ESMRA auction methodology, and generally support the proposed rules as set out in the draft Allocation Determination. However, there are several key issues that we believe need to be addressed:

Late changes to starting prices

We are very concerned about the proposal that the ACMA should be at liberty to change the starting prices after they have been published on the ACMA's website. The proposed power for the ACMA to change starting prices so very late in the auction process, and thereby to restart the entire process (including to admit late entrants) creates unnecessary and excessive uncertainty, risk and potentially significant cost for participants. We do not believe such a power is helpful or necessary.

Include an instalment payment option

In regard to the payment terms, while Telstra has previously been comfortable paying an upfront lump sum for spectrum licences acquired in ACMA auctions, we believe the current exceptional circumstances, due to COVID-19 financial impacts, justify making an instalment payment option available to all successful bidders. We ask that an instalment option with payments spread over at least 5 years be included.

Excess demand information

Regardless of the lot size configuration, information about the exact excess demand should be provided to all auction participants at the end of each round, to support overall transparency and efficient outcomes being realised. There is no reason for the information policy (transparency on aggregate excess demand) to be tied to the lot size.

We also support most of the arrangements in the technical instruments, except for the following concerns that need to be addressed to improve the utility of the 26 GHz band.

3 dB power reduction for 27.0-27.5 GHz is only relevant in areas just outside gateway footprint areas

The ACMA proposes to address the risk of high-power transmitters in the range 27.0-27.5 GHz operating "just outside" a gateway footprint area causing interference to a satellite receiver by reducing the maximum power of all transmitters operating above 27.0 GHz (regardless of proximity) by 3 dB. We appreciate the need for implementation consistency, however, in this instance, we are of the view this unnecessarily limits the potential for the 27.0-27.5 GHz segment in spectrum licensed areas further away from gateway footprint areas. We propose a better solution is to only impose the 3 dB reduction in (baseline and upper) TRP on those spectrum licensed geographies immediately adjacent to the Waroona gateway footprint area, i.e. Greater Perth and Margaret River. The remaining 24 spectrum licensed geographies (noting Hobart is already entirely within a gateway footprint) can then operate at a baseline TRP of 40 dBm/200 MHz and upper TRP limit of 45 dBm/200 MHz anywhere in the band from 25.1-27.5 GHz.

Redesign the EIRP elevation mask to comply with WRC-19 resolutions

The ITU-R has pre-existing recommendations defining satellite protection mechanisms (including F.1249, F.1509, SA.1155), along with mechanisms to protect satellite services from unwanted IMT emissions following the completion of Resolution 242 at WRC-19. Nevertheless, the ACMA is proposing further restrictions (in the form of an EIRP elevation mask) based on a single input study to the Task Group 5/1 (TG-5/1) prior to WRC-19. We are perplexed as to why the ACMA proposes further satellite

protection mechanisms beyond those required by ITU-R recommendations based on an *input* to the WRC-19 process rather than an *output* of the process. We consider they should be based on the output.

As such, we propose alternate elevation masks that strike a balance between providing ample protection to incumbent and future geostationary satellite services, while enabling deployment flexibility so that IMT operators can fully realise the utility and potential of the band. We used the output of WRC-19 (as specified in Resolution 242) to define the essential characteristics of the mask, and then added additional protection for Australia's domestic satellite services operating in the range 27.0-27.5 GHz in line with additional requirements developed by the ACMA. We also propose the elevation mask should only be applied in the direction of the geostationary arc.

Fallback synchronisation and AWL parity

We support the ACMA defining a fallback mechanism for resolving interference disputes between two spectrum licence licensees in the 26 GHz band. However, we are very concerned about the use of a fallback synchronisation requirement to resolve interference issues between a spectrum licence licensee and an AWL licensee, as this effectively treats the two licensee types as peers for the purpose of resolution of a stalemate in the negotiation of interference coordination. Spectrum licence licensees must be able to operate within the bounds of their licence conditions free from interference or other encumbrances, including being free from having to resolve interference stalemates with licensees using apparatus licences (in this case, AWLs) as peers.

1 Draft marketing plan

1.1 Lot configuration

1.1.1 Lot Configuration – frequency

Lot configuration – frequency

We seek stakeholder views on whether the lot size for each geographic area in the 26 GHz band auction should be 200 MHz resulting in 12x200 MHz lots for each product.

In the consultation paper the ACMA states, “stakeholders expressed a preference for a lot size of 200 MHz to mitigate frequency exposure risk, with little concern about the additional technical conditions proposed for the upper frequency range.”²

In our response to the consultation on the 26 GHz draft reallocation recommendation (**draft reallocation recommendation**) we said:

“the most appropriate frequency lot configuration is to have 24 x 100 MHz lots as it provides for more flexibility while also allowing the possible creation of two lot categories in Perth, Hobart, Bunbury and Margaret River to safeguard the existing NBN gateway uplinks.”³

Offering the spectrum in lot sizes of 100 MHz will provide greater flexibility for all bidders to obtain their desired allocation. It will also provide more flexibility during the auction, for example by allowing bidders to express changes in demand more gradually. Additionally, 200 MHz lots would have an anomalous consequence in that the lot from 26.9 GHz to 27.1 GHz would straddle the 27.0 GHz boundary and therefore be subject to two different sets of maximum emission power limit parameters. This would be avoided if 100 MHz lot sizes were adopted, as that would allow for easier product configuration and distinction.

We are also concerned about the proposal for all lots to be treated equally as generic lots in the primary stage of the auction. The lots are not all of similar value: In particular, the Greater Perth, Hobart and Margaret River lots above 27.0 GHz have significantly tighter emission limits, with a proposed maximum emission power limit that is either 3 dB or 15 dB less than the emission limit below 27.0 GHz. This is a considerable difference in maximum permissible transmit power and means these lots are not substitutable with lots below 27 GHz. The lots above 27.0 GHz also exclude the “infill” area between Perth and Bunbury.

While our preference for 100 MHz lot sizes would allow the ACMA to have a clean delineation between lots below and above 27 GHz, the lots in these two geographies could still not be regarded as having the same value.

If all lots in these impacted geographies are considered as generic, even those above 27 GHz, this will present bidders with an inescapable dilemma. One extreme option would be to bid in the primary stage for a quantity of spectrum on the basis that the lots have the “full value” of the higher power limit. This approach would maximise the bidder’s chance of securing the number of lots it requires. However, given the proposed assignment stage format, which does not permit negative bids, such a bidder is then exposed to the risk of ‘winning’ the significantly restricted lots above 27 GHz at a price higher than it

² Consultation paper, p14.

³ Telstra’s submission in response to the ACMA consultation on “Draft spectrum reallocation recommendation for the 26 GHz band in cities and regional centres”; p6

would have been prepared to bid had it known this assignment outcome would be realised. To reduce the risk of ending up with such an unfavourable assignment outcome, a bidder will need to bid more aggressively in the assignment stage in an attempt to secure the lots with the higher power limit. This, in turn, may mean that the bidder grossly overpays in total across the primary stage and the assignment stage – a situation commonly referred to as the ‘exposure problem’.

The other extreme option would be to bid to the “minimum value” of the lower power limit in the primary stage. This removes the risk of overpaying for spectrum across both stages, but exposes the bidder to not securing the quantity of spectrum it seeks in the primary stage.

Bidders will assess these risks very differently when determining their bid limits for each stage. This means that the final allocation will be largely determined by how bidders assess these risks and not their actual valuations, which, in turn, increases the risk of an inefficient allocation outcome.

We recommend that this problem be solved by splitting the Greater Perth, Hobart and Margaret River lots into two separate product categories – “Greater Perth Lower” / “Hobart Lower” / “Margaret River Lower” (lots below 27.0 GHz) and “Greater Perth Upper” / “Hobart Upper” / “Margaret River Upper” (lots above 27.0 GHz). This would be the same approach as taken for the Perth region in the 3.6 GHz auction. If this is done, bidders can then express differences in valuations for lots above and below 27.0 GHz in these regions in the primary stage of the auction instead of the assignment stage. Assignment position rules can be used to ensure that a bidder which acquires spectrum in these regions both above and below 27.0 GHz is preferentially allocated the positions that result in a contiguous spectrum allocation.

If these recommended product categories for Greater Perth, Hobart and Margaret River are not adopted then a potential solution would be to include an assignment stage that permits negative bids. That way, bidders could bid on all lots in the primary stage as if they have equal value, and then bid in the assignment stage a “discount” to reflect assignment positions that have, in their view, a value smaller than the amount they bid in the primary stage. Rules for negative bids would need to be implemented to, for example, restrict them to the affected assignment positions and also to prevent prices being paid that were lower than the starting prices.

As explained above, we strongly recommend the ACMA revert to its original position of having 24 x 100 MHz lots⁴. Further, we recommend that two product categories be created in Greater Perth, Hobart and Margaret River, to reflect the tighter constraint on permissible emission levels above 27 GHz⁵, with one of these categories consisting of 19 lots in the 25.1–27.0 GHz range and the other consisting of 5 lots in the 27.0–27.5 GHz range. While the lots above 27 GHz in Greater Perth would not include the “infill” area as shown in Figure 4 of the consultation paper, this does not mean that the two areas – even with the gap between them – could not be offered as a bundle, i.e. as a single product in the geographic domain. This is discussed in the next section.

1.1.2 Lot configuration – geography

Lot configuration – geography

We seek stakeholder views on the proposed Greater Perth product configuration and offering the remaining areas as separate products.

⁴ ACMA’s original position as stated in the 26 GHz Draft reallocation recommendation consultation paper; p.28. June 2019. <https://www.acma.gov.au/consultations/2019-08/draft-spectrum-reallocation-recommendation-26-ghz-band-consultation-142019>

⁵ The spectrum from 27.0 to 27.5 GHz will have additional technical conditions.

We support the geographic configuration as proposed by the ACMA in the draft marketing plan including the creation of a single “Greater Perth” product as shown in Figures 4 and 5 of the consultation paper.⁶ However, as noted in the previous section, we recommend two product categories be offered in Greater Perth, Hobart and Margaret River so that, even after the amalgamation of Greater Perth region, the number of products will now be 30.

The ACMA states that combining the declared areas for Perth/Bunbury, Perth, and Bunbury into a single product is a “a consequence of increasing the proposed 100 MHz lot size to 200 MHz and the different frequency ranges applying to the Perth/Bunbury area, and the Perth and Bunbury areas in the re-allocation declaration.” While we can see why the potential increase in lot frequency sizes might have prompted this change, it does not mean that these two regions should only be amalgamated if the lot size remains at 200 MHz. We believe this proposed amalgamation would equally make sense if 100 MHz lot sizes were adopted. The creation of a single Greater Perth product has the beneficial effect of ensuring continuity between the Perth and Bunbury areas in the 25.1-27.0 GHz segment of the band, so that successful bidders for this product will have common spectrum across the two areas and not suffer from “dead zones” or inter-operator spectrum coordination issues.

As noted by the ACMA, the combined Greater Perth product is not uniform across the entire range due to the small “infill” area between Perth and Bunbury that is not declared for re-allocation in the 27.0–27.5 GHz frequency range. However, we believe this is not an issue for prospective bidders, due to the low population density in this area and the ability of bidders to use the assignment stage to pursue a preferred position in the band between 25.1–27.0 GHz, if they place a premium on acquiring a spectrum licence that includes this “infill” area. Therefore, as noted in our comments in the previous section, the “infill” gap should not preclude the bundling of the Perth and Bunbury areas as a single product above 27.0 GHz.

The resultant 30 declared areas should be offered as separate products. We also propose that all of the “Greater Perth” spectrum licensed geography should be classified as **inside a gateway footprint** area. See section **Error! Reference source not found.** for further details.

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[C-I-C Ends]

⁶ Consultation paper, p17.

1.2 Spectrum licences

1.2.1 Licence commencement and duration

Licence commencement

We seek stakeholder views on whether the commencement date for each 26 GHz band spectrum licence should be tied to receipt of payment for that licence.

We support the proposal that spectrum licences issued in the 26 GHz band should commence as soon as possible after allocation and ideally should enjoy the maximum 15-year term available under the *Radiocommunications Act (Cth) 1992 (the Act)*⁷, as set out in sections 16 and 17 of the draft Marketing Plan. We also agree that the issue of a spectrum licence should be conditioned on receipt of payment by the ACMA, as set out in section 15 of the draft Marketing Plan.

However, the differing expiry dates for spectrum licences should and can be avoided. We are concerned that differing expiry dates – even if only a few weeks apart – will complicate the possibility of future spectrum trades, licence amalgamations or restacks. For example, licences with differing expiry dates cannot be readily amalgamated so that the expiry date of one licence would need to be varied, causing a change in value for the licensee that may have accounting and tax implications. This may in turn require a lot of administrative activity for marginal benefit. Further, in the past, the simplest and most readily achievable approach to defragmentation has involved licensees agreeing reciprocal changes to the frequency parameters licence core condition (under section 72 of the Act). This approach eliminated the need for any actual trade or money changing hands. But, if the licences are no longer identical to one another in terms of expiry date, this will mean that like-for-like reciprocity is not possible without compensation for a shortened licence term on the part of one licensee. Hence, this simple mechanism may no longer be available. Differing expiry dates may also potentially complicate replanning and further allocations at licence expiry.

We recognise that the difference in licence expiry date may not be, “more than a month or two at most, and would more usually be in the order of weeks”, as stated in the consultation paper⁸ but even a one day difference in licence expiry would cause the problems described above. In our view, the small differences in licence expiry do not justify the administrative difficulty and disincentive to trading, swaps, and defragmentation that may result down the track.

Therefore, we suggest a simpler approach that will enable all licences to have the same expiry date. We propose a fixed licence commencement date of 20 working days after the end of the auction period, with the ACMA being required to notify winning bidders of the balance of the winning price payable under section 68(1) of the Allocation Determination (i.e. issue invoices for payment) within five working days after the end of the auction period, and all payments being required by the fixed licence commencement date. This approach eliminates the need to cater for the possibility of the licence term being less than 15 years.

We note that since the duration of the auction cannot be predicted, the licence commencement date cannot be fixed to a specific date until the date the auction conclusion is known. But this is also the case with the ACMA’s proposal.

⁷ Act, s65(3).

⁸ The consultation paper; p13

2 Draft Allocation determination

2.1 Auction format and stages

26 GHz band allocation format

We seek views on the 26 GHz band allocation being conducted using the ESMRA auction format with the nomination of demand to be provided approximately three weeks before the auction start.

We strongly support the ESMRA auction methodology (which is to be conducted in two stages) and agree with the ACMA's view that it is the most appropriate format for the 26 GHz auction. As noted in the consultation paper⁹, the ESMRA format mitigates exposure and fragmentation risks, because it allows bids on generic lots within each region and includes an assignment stage to allocate the spectrum won in a contiguous block of that bandwidth.

We also agree with the ACMA's views that bid withdrawals are not compatible with the ESMRA format and should not be allowed because they would introduce a significant gaming risk. We have no objection to the proposal to have a period of approximately three weeks between demand nomination and the start of the auction.

We suggest that the ACMA should consult with bidders on the detailed auction parameters such as duration of rounds, the interval between rounds and the number of rounds per day, closer to the auction date.

2.2 Auction rules

26 GHz band auction—information policy

We seek views on providing excess demand information in all circumstances during the primary stage of the auction.

2.2.1 Information policy

We strongly support the ACMA's proposal to provide exact excess demand information in all circumstances during the primary stage of the auction, including when aggregate demand is equal to or less than supply.

We note the consultation paper states that in contrast to standard SMRA auctions, ESMRA auctions have a higher risk of strategic demand reduction but this risk is "offset by the requirements for price discovery and transparency" and in any case, the ACMA believes the risk of strategic demand reduction in the case of the 26 GHz band auction is low considering the larger lot sizes of 200 MHz.

We consider that the exact excess demand (aggregated and therefore anonymised) should be provided to all auction participants in support of overall transparency and efficient outcomes being realised, regardless of the lot sizes. That is, even if the lot size for each geographic area was to be reduced to 100 MHz, exact excess demand information should still be provided to all bidders. We do not see any reason why these two, quite separate, auction design parameters (i.e. lot sizes and exact excess demand information) should be linked. As stated in our response to the 3.6 GHz auction consultation¹⁰,

¹⁰ Telstra's submission to "Draft allocation instruments for 3.6 GHz band (3575–3700 MHz) metropolitan and regional lots auction"; p10

we are of the view that precise aggregate demand information is important for bidders in this auction for the following reasons:

- **To address common-value uncertainty.** It is a well-established fact that “when there is a common value component to valuation and when bidders’ signals are affiliated, an open ascending bid format may induce participants to bid more aggressively (on average) than in a sealed bid format, as participants can infer greater information about their opponents’ signals at the time they place their final bids”¹¹. Providing precise aggregate demand information allows bidders to get a better understanding of the intensity of competition at a particular point in the auction. This provides them with better information to adjust their estimate of any common-value component more accurately and with confidence.
- **To promote a level-playing field for all bidders.** Reporting excess demand only up to a certain point (for example, as in the 3.6 GHz auction where information for exact excess demand was provided where demand was greater than supply by more than four lots) creates information asymmetry between bidders as some bidders can infer more than others from this information in combination with their bids and the allocation limits that are adopted. In general, bidders who change their demand from one round to another receive more information than others. When auction rules create information asymmetries between bidders, bidders will likely try to exploit this in the auction, and undesirable distortions may result. Such issues fall away if aggregate demand information is provided in full.

We also think the risk of strategic demand reduction purely for the purposes of trying to close the auction at lower prices is overstated, given the competitive nature of the domestic mobile sector. This was clearly demonstrated in the 3.6 GHz auction – in the regional geographic areas, where the caps permitted the three MNOs to compete, they did so vigorously leading to very competitive price outcomes.

For these reasons, we strongly recommend that bidders should be provided with exact excess demand information throughout the entire auction, regardless of the lot size.

2.3 Activity rule

26 GHz band auction—activity rule

We seek views on using a global activity rule for this auction.

We support the use of a global (aggregate) activity rule for the 26 GHz auction - similar to what was used in the 3.6 GHz auction.

We note the ACMA has indicated it will consult further on the activity rule level and other auction parameters with registered bidders after the close of applications.

2.4 Assignment stage pricing rule

26 GHz band auction – assignment stage pricing rule

We seek views on using the nearest Vickery core pricing algorithm for determining the winning prices in the assignment stage of the 26 GHz band auction.

¹¹ Ausubel, Lawrence M. (2004), “An Efficient Ascending Bid Auction for Multiple Objects”, American Economic Review, 94(5), pp. 1452–1475.

We support the ACMA's proposal to use the nearest Vickrey core pricing algorithm for the assignment stage.

We agree with the ACMA's position that external verification of the assignment stage results is not required for this auction. While we expect that the full bidding files will be released to all bidders at some point after completion of the auction, we request that all assignment stage bids stay confidential and are removed from any bid files released by ACMA to bidders. The assignment stage bids should not be revealed to any bidders after the auction as this information can be used for competitive intelligence and therefore needs to remain confidential.

We support the ACMA providing each bidder with their feasible frequency range options for each product in the assignment stage after the conclusion of the primary stage, and at least 24 hours before commencement of the assignment stage. We also agree that any unallocated lots should be assigned to the highest position in the band.

Finally, if lots above 27.0 GHz in Perth, Hobart and Margaret River are not categorised as a different product then negative bids should be permitted in the assignment stage. Please refer to section 1.1 above where we explain the basis for this proposal.

2.5 Application and registration process

26 GHz band application process

We propose to set the application fee for the auction at \$10,000.

We seek views on the proposed two-stage application process requiring:

- > By the application deadline, applicants to submit an application form and other supporting documentation, along with the payment of the application fee.
- > By the eligibility deadline, applicants to provide their nominated lots and either an eligibility payment or a deed of financial security (or a mixture of both) for those nominated lots.

We are comfortable with the ACMA's proposal to set the application fee for the auction at \$10,000 and to have a two-stage application process.

Furthermore, we also support the proposal to calculate the amount of the eligibility payment for a bidder by multiplying the total value of the nominated lots at the starting prices for those lots by 10 percent so as to avoid the issue of eligibility payments being significantly different percentages of the start demand value between different bidders (as identified in the 3.6 GHz auction).

2.6 Potential for change in starting prices

26 GHz band auction—change in starting prices

We seek stakeholder views on providing the ACMA with the power to change the starting prices before the auction.

We are very concerned about the proposal that the ACMA be at liberty to change the starting prices after they have been published on the ACMA's website (the same time that applications open, under section 27(4) of the draft Allocation Determination). This is undesirable for several reasons:

- **Delay to the auction process:** the draft Allocation Determination Part 4, section 37 gives the ACMA the power to change the starting prices, lot ratings and deadlines after the application deadline but "no less than 5 working days before the eligibility deadline". This will in turn trigger

a new extended eligibility deadline “which must be at least 20 working days after the eligibility deadline” and a new application deadline which “must be 20 working days after the date of variations”. It is possible that new applicants may join the auction, adding further delay as associates lists are once again circulated amongst bidders.¹² This means that the auction timeline could slip by at least a month if not more. It is of paramount importance that the auction timeline does not slip beyond the indicative timeline of March 2021 so that Australian consumers can benefit from the next generation of 5G mmWave technology.

- **Uncertainty for investment planning:** the possibility that the auction process could be restarted by the ACMA after bidders have made their governance decisions and are about to submit their eligibility nomination forms, creates significant uncertainty for bidder investment planning. It is undesirable that a high-value licence issue process being run by a Commonwealth regulatory agency should be subject to such unpredictability.
- **Trigger additional bidding strategy and corporate governance activities:** All companies, have a governance framework in place to ensure that every decision is made with appropriate scrutiny, review, and approval at authorised levels. The decision as to whether to participate in a high-value auction would typically require approval from the board of directors which in turn requires full visibility and transparency of the financial commitment involved. This includes the total dollar value of the lots nominated in any auction application based on their starting price. If the ACMA is at liberty to change the starting prices at such a late stage in the process, it would likely require all bidders to rework their bidding strategies and re-run some or all of their governance processes.

In summary, the proposed power for the ACMA to change starting prices so very late in the auction process, and thereby to restart the entire process, creates unnecessary and excessive uncertainty, risk and potentially significant cost for participants.¹³

Auction applicants have a legitimate expectation that the starting prices are set correctly at the outset to take account of the various auction participation scenarios that may eventuate.

2.7 Associates process

The draft Allocation Determination Part 2 Division 2 sets out the “associates” disclosure process which is used to determine bidder compliance with the allocation limits. As the ACMA is aware, minor technical changes have been made in the Ministerial Direction on allocation limits, to the definition of the phrase, “specified group of persons” (also used in section 13(4) of the draft Allocation Determination) with the intention of preventing the inappropriate application of the process to third party providers of secretarial services offshore who might otherwise be considered to be “associates” of bidders.¹⁴ The technical improvements contained in the Ministerial Direction should be made to the similar text in the Allocation Determination.

Further, we note that the format in which the “associates” disclosure is made by auction applicants is determined in the Auction Application Forms, and that in past auctions the format determined by the ACMA has been highly prescriptive.¹⁵ Completion in the precise format set out by the ACMA requires extensive manual reformatting of material extracted from our company secretarial database. We

¹² Draft Allocation Determination, s42.

¹³ See: <https://www.acma.gov.au/publications/2019-10/publication/principles-spectrum-management-2009>.

¹⁴ Radiocommunications (Spectrum Licence Limits—26 GHz Band) Direction 2020, s4(3).

¹⁵ See, for example, “Form 8—Associates form—body corporate” in the 3.6 GHz band Auction Forms, August 2018.

encourage the ACMA to assist bidders by eliminating unnecessary “red tape” requirements such as this prescriptive format, and instead to focus on identifying the substantive content that is required to be disclosed. Any templates for disclosure should be provided in the Application Forms by way of example only, and bidders should be assured that they will be compliant with the requirements of the Allocation Determination provided they provide the required content in an accessible, suitably categorised and searchable file format, which may include MS-Word, searchable PDF, or Excel (or comparable) electronic spreadsheet.

Last, we suggest that significant “red tape” may be eliminated if the ACMA provided guidance in the relevant section of the Application Form that third party providers of offshore secretarial services may be described as such in a bidder’s “associates” disclosure, using the generic identifier of “third party secretary”, rather than requiring that the relevant individual be identified by name. This is because these third party providers of secretarial services cannot be considered a “member in common” between specified groups of persons, and their specific identity is accordingly not relevant. This guidance will save bidders from having to notify any changes which may occur in these third party providers during the auction process (which otherwise would need to be flagged to the ACMA under section 46(1) of the Allocation Determination) and will also save the ACMA from having to record irrelevant information in the register in the first place as well as from updating it under section 46(2) of the Allocation Determination. If the ACMA has any concern requiring it to find out the specific identity of a third-party provider of offshore secretarial services, it retains the power under section 74 of the Allocation Determination to specifically request this information from a bidder.

2.8 Payment terms

Draft Allocation Determination

We seek stakeholder views on the draft Allocation Determination and the auction rules for the 26 GHz band auction including the payment terms.

Regarding payment terms, while Telstra has previously been comfortable paying an upfront lump sum for spectrum licences acquired in ACMA auctions, we believe that the current exceptional COVID-19 related circumstances justify making an instalment payment option available to all successful bidders.

The COVID-19 pandemic and earlier bushfire crises continues to have an impact on the operation of our business as well as our financial performance. Investments in supporting customers and restoring bushfire damage to infrastructure will amount to \$44 million across FY20 and FY21. As outlined in our annual results released to the market on 13 August, the financial impact of COVID-19 on Telstra’s earnings are currently estimated as:

- -\$200 million FY20 second half impact on underlying EBITDA
- -\$400 million FY21 full year impact on underlying EBITDA

The enormous, unprecedented and ongoing disruption and pain caused by the COVID-19 pandemic has made the past few months extraordinarily challenging for everyone. However, we have been thoughtful about the best ways we can make a difference and taken strong and decisive action to support our employees, our customers, and the community.

In March, in response to the pandemic, Telstra provided employees with pandemic leave, shifted office-based work to working from home, and put further job reduction announcements on hold. Telstra also put assistance measures in place for customers including providing additional data and discounts for eligible customers and pausing late payment fees. We also helped small businesses shift online or go into hibernation, recruited around 2,000 temporary employees for customer service roles in Australia, and extended all sponsorship agreements that would have expired during 2020

In addition to these initiatives we also committed to bring forward \$500 million of capital expenditure planned for the second half of FY21 into calendar year 2020. This investment will increase capacity in our network and accelerate our rollout of 5G, but most importantly it will inject additional spending into the Australian economy and assist other businesses to recover from the economic impact of the COVID-19 crisis.

Bringing forward capital expenditure will require us to consume capital ahead of our plans. We need to maintain a balance between being a responsible business (supporting our staff, customers and the wider economy) and maintaining the long-term financial strength of the company. At the same time, we continue to be exposed to consequences of COVID-19 such as increased bad and doubtful debts.

Accordingly, we are asking the ACMA to make an instalment payment option available to successful bidders in the 26 GHz auction by including a delayed payment option in the final Allocation Determination, as suggested in the consultation paper. This option would provide us with financial flexibility while continuing to support all stakeholders (staff, customers and economy). We are seeking an annual payment over a period of at least 5 years. An appropriate interest rate should be determined, for example by reference to the relevant long-term Australian Government Bond Yield.

Such an option is not unprecedented, with successful bidders in the 700 MHz (residual lots) auction, held in 2017, having the option to pay their spectrum access charge upfront before commencement of the licence or in instalments. In that case, we note that requirements for the instalment option were set out in a Ministerial Direction to the ACMA.¹⁶

2.9 Bank guarantee

A bank or insurer's guarantee at the auction bidding phase, as required by section 36 of the draft Allocation Determination, should not be a necessary requirement for a listed company with a strong credit rating. As we have pointed out to the ACMA in our previous submissions on this requirement in draft auction instruments, Telstra's current credit rating is superior to that of many Australian authorised deposit-taking institutions (**ADIs**) that would qualify to execute the deed of financial security. This creates the absurd situation that the ACMA is requiring Telstra's commitment to potentially be guaranteed by a party that is less credit-worthy than Telstra itself.

In reviewing the current list of ADIs on the website of the Australian Prudential Regulation Authority (**APRA**),¹⁷ we observe that several of the ADIs listed have no known external credit rating, which means the ACMA could not place any reliance on a deed of financial security provided by such an ADI. Similar questions arise in respect of several of the listed foreign bank branches (in turn reliant on foreign bank parent guarantees) and general insurers which also qualify under section 36(7) of the draft Allocation Determination to provide the deed of financial security. We encourage the ACMA to seek input from appropriately qualified experts in its peer financial regulatory agencies or the Commonwealth Treasury on this issue.

The ACMA should appropriately adjust its credit risk assessment for bidders that are established businesses with good credit histories, consistent with standard commercial practice in the modern economy. The current approach of the ACMA is wasteful in imposing cost and bureaucratic requirements on bidders that are not consistent with commercial practice.

As is convention in the Australian economy, if a company consistently pays its debts in good time and establishes a track record of trustworthiness, it should be rewarded by better credit terms. The ACMA

¹⁶ Section 7 in the *Radiocommunications (Spectrum Licence Allocation—Residual 700 MHz Spectrum) Direction 2016*, available at: <https://www.legislation.gov.au/Details/F2016L01929>.

¹⁷ Register of authorised deposit-taking institutions, APRA, <https://www.apra.gov.au/register-of-authorised-deposit-taking-institutions>.

has visibility of Telstra's history of timely payment of licence and other fees to it – often very large amounts running into many millions of dollars – and should make use of this data to reward Telstra (and all other similarly placed bidders) by removing the undue cost of obtaining a bank or insurer guarantee.

Our view is that a long-term credit rating of at least “BBB-” from Moody’s or Standard & Poors (regarded as investment grade ratings) should be sufficient to enable an auction applicant to be relieved of the obligation to provide a bank or insurer's guarantee. We would be glad to propose drafting that appropriately sets this out in the draft Allocation Determination. Telstra believes that a corporate guarantee is adequate for companies in this category and requests that such a guarantee be added to the list of options for executing a deed of financial security.

2.10 Provisions on confidentiality

Our view based on experience in previous ACMA spectrum auctions is that the confidentiality provisions may be interpreted to potentially act in an unduly restrictive manner to prevent an applicant or bidder from publicly disclosing that it has applied to participate, or is participating, in the auction. This concern arises out of uncertainty about the very broad terms of sections 16(j) and (k) of the draft Allocation Determination. While it may be argued that an applicant or bidder is entitled to disclose its participation in the auction in accordance with section 17(2)(g) of the draft Allocation Determination, as a consequence of continuous disclosure obligations under the *Corporations Act (Cth) 2001* and the relevant ASX Listing Rules¹⁸, we are concerned about the lack of clarity in this regard.

We note that an implied restriction on applicants and bidders from disclosing their participation in the auction is at odds with the apparent liberty of non-applicants to disclose freely that they are not participating in the auction, despite such a disclosure arguably being of similar relevance to the market and the public. This asymmetry arises from the leveraging of the auction application process by the ACMA to impose broad confidentiality obligations on applicants alone. If there was a legitimate concern about such disclosure (of either participation or non-participation in the auction) then the prohibition should be in plenary legislation i.e. in section 60 of the *Radiocommunications Act (Cth) 1992*. Telstra receives multiple requests from journalists, analysts and other interested parties before and during auctions as to whether it is participating in the auction. Given the uncertainty about the scope of section 16 of the Allocation Determination in respect of a mere disclosure of participation in the auction, we suggest that it would be equitable and sensible for the Allocation Determination to expressly allow such disclosure.

We therefore propose the following additional provision in section 17 of the Determination (additions shown by underlined red text; deletions by struck-out red text):

- (3) Subsection (1) does not prohibit an applicant or bidder, or a related person of an applicant or bidder, or contractor of an applicant or bidder, disclosing:
- ~~(a)~~ information about the auction if:
 - ~~(a)(i)~~ the information is already publicly available; and
 - ~~(b)(ii)~~ the information was not made available because of a breach of this section; or
 - ~~(b)~~ the fact that the applicant or bidder is participating, or intends to participate, in the auction.

¹⁸ ASX Listing Rules 3.1, 3.1A and 3.1B; Corporations Act s674.

We are concerned that despite having raised this proposal with the ACMA in the 3.6 GHz auction process,¹⁹ the ACMA did not take the opportunity to address the issue. This meant that bidders were exposed to uncertainty regarding the risk of breach of the confidentiality obligation by merely confirming their participation in the auction (a fact that would be known to other auction participants, anyway, once the “associates” disclosures are circulated by the ACMA). We strongly encourage the ACMA to provide clear guidance in this regard, one way or another, and remove needless uncertainty for bidders.

¹⁹ Telstra submission to ACMA on the draft allocation instruments for 3.6 GHz band (3575–3700 MHz) metropolitan and regional lots auction, 15 June 2018, p18.

3 Technical framework

This section contains our comments on the technical framework for the 26 GHz band.

3.1 Comments on the consultation paper

3.1.1 Only apply the 3 dB power reduction for 27.0-27.5 GHz to areas just outside a gateway footprint

The ACMA proposes a baseline TRP limit of 37 dBm/200 MHz, with additional flexibility to increase to an upper TRP limit of 42 dBm/200 MHz where the additional mitigation measures (elevation mask) are met for transmitters operating in the range 27.0-27.5 GHz outside the gateway footprint areas. The ACMA's rationale for this limit is explained on p.14 of the technical instruments consultation paper:

This recognises that the frequency range is shared with domestic satellite services and that high power transmitters located near (but just outside) the gateway footprint areas will contribute to the aggregate interference level at the satellite receiver.

Under the ACMA's proposal to create spectrum licensed geographies, the two geographies with areas "just outside" a gateway footprint are Perth and Margaret River. We support the ACMA's proposal to set a baseline TRP of 37 dBm/200 MHz and an upper TRP limit of 42 dBm/200 MHz for these two spectrum licensed geographies.

However, we are of the view this imposing these baseline and upper TRP limits to spectrum licensed geographic areas further away from gateway footprint areas unnecessarily limits the potential for the 27.0-27.5 GHz segment of the band. We propose a better solution is to only impose the 3 dB reduction to baseline and upper TRP limits in spectrum licensed geographies that have immediate adjacency to a gateway footprint area, namely Greater Perth and Margaret River. The remaining 24 spectrum licensed geographies (noting Hobart is already entirely within a gateway footprint) can then operate at a baseline TRP of 40 dBm/200 MHz and upper TRP limit of 45 dBm/200 MHz anywhere in the band from 25.1-27.5 GHz.

We acknowledge that this necessarily requires a set of four upper TRP Limits in the licence core conditions as well as a set of four baseline TRP limits and four EIRP elevation masks in part 4, section 11 of the Transmitter Radiocommunications Advisory Guidelines (Transmitter RAG). We believe this is an acceptable planning and deployment 'cost' (i.e. overhead arising from the additional deployment design considerations) to obtain greater utility from the band.

3.1.2 All elevation masks should apply only in the direction of the satellite

Considering Fixed Satellite Service (FSS) space station receivers requiring protection in 27.0-27.5 GHz are all in geostationary orbit (GSO), we propose a refinement to the application of EIRP elevation masks such that they only apply in the direction of the geostationary arc, as opposed to applying it in the full 360° azimuth. Allowing beams to steer toward higher elevations in directions away from the geostationary arc will not increase the EIRP radiated towards these satellites. At the same time, it will provide significantly more flexibility for wireless network operators in deploying base station sectors pointing away from the geostationary arc.

One option is for the ACMA to only apply elevation masks in the direction of occupied GSO orbital positions (namely, 140E and 145E), however, we note the ACMA's comments surrounding providing some future flexibility for the FSS and as such, we support elevation masks only applying "in the direction of the geostationary arc" as a mechanism to provide future flexibility for new FSS.

3.1.3 Elevation masks should be redesigned to align with ITU-R requirements

The ACMA proposes to introduce a set of three elevation masks²⁰ for base station transmitters from 25.1-27.5 GHz to protect Inter-Satellite Service (ISS), Data Relay Services (DRS) and FSS. However, these satellite services are already adequately protected by ITU-R recommendations F.1249 (fixed point-to-point services and the ISS), F.1509 (fixed point-to-multipoint services and the ISS), SA.1155 (protection of the DRS), and more recently Resolution 242 resolves 2.1 and 2.2 at WRC-19 (for IMT services). These protection criteria have been developed to provide necessary protection and we consider there is no need to impose additional restrictions.

Despite the presence of these ITU-R recommendations, the ACMA has chosen to develop a further protection mechanism based on a mask developed in one of the TG-5/1 studies. The ACMA's proposed set of EIRP masks replicate the Russian Federation's Study in the TG-5/1 Chairman's Report²¹ for protection of the ISS. The mask in Russian Federation's Study is simply based on generating an envelope around the EIRP pattern for an 8x8 AAS array operating at 25 dBm/200 MHz TRP. It appears that the ACMA has then created the set of three masks by adjusting the amplitude for the applicable baseline TRP limit.

There are several issues with using a single input study to create core licence conditions. Firstly, we consider that where the outcomes from studies are available, we should be relying on them and not specific input studies, as there may be other studies to the contrary. For example, in this case, the Australian study focussing specifically on 27.0-27.5 GHz within gateway footprint areas concluded the aggregate interference inside a gateway footprint area would be 20 dB lower than the permissible I/N ratio based on the modelling parameters sent to TG-5/1 by WP4A. Secondly, we note Russia is situated further north of the equator than Australia is south of the equator. This means satellites in the geostationary arc serving either particular country will appear lower in the sky (closer to the horizon) to Russia than they appear to Australia. As such, we consider that if the ACMA were to proceed with using the input study submitted by the Russian Federation, as a minimum the mask should be translated for Australian latitudes.

Given our proposal that the 3 dB reduction to the baseline and upper TRP limits should only apply to Greater Perth and Margaret River (as per section 3.1.1), a total of four EIRP elevation masks are required:

- i. 27.0-27.5 GHz inside gateway footprints (all of Hobart plus parts of Greater Perth and Margaret River);
- ii. 27.0-27.5 GHz 'just outside' gateway footprints (remaining parts of Greater Perth and Margaret River);
- iii. 27.0-27.5 GHz 'further outside' gateway footprints (other spectrum licensed geographies *except* Hobart, Greater Perth and Margaret River); and
- iv. 25.1-27.0 GHz.

We address each in turn below.

EIRP Elevation Mask for 27.0-27.5 GHz inside gateway footprint areas

For the frequency range 27.0-27.5 GHz inside gateway footprint areas (namely, all of Hobart plus parts of Greater Perth and Margaret River) Australian domestic satellites appear at elevations between 40-80 degrees to the horizon. As such, we propose that a more practical and implementable limit is to restrict the EIRP where the pointing angle of the main lobe is between 34 degrees and 86 degrees elevation.

²⁰ Technical Instruments consultation paper, Figure 2.

²¹ TG 5/1 Chairman's Report Annex 3 Part 4. <https://www.itu.int/md/R15-TG5.1-C-0478/en>

The values of 34 and 86 degrees are derived using the -3 dB beamwidth of a 23 dBi (8x8) antenna, which has a 12-degree beamwidth. Half this beamwidth is 6 degrees, and therefore, restricting the EIRP from base stations (including upper side lobes) at elevation angles above 34 degrees will limit emissions from base stations within the 3 dB beamwidth of any Australian domestic satellites. We propose the EIRP limit should be set to **34 dBm/200 MHz** for elevation angles above 34 degrees, consistent with the ACMA's proposed value for transmitters operating in the range 27.0-27.5 GHz inside gateway footprint areas at elevations between 15 and 25 degrees, as shown in Table 3 of the Technical Instruments consultation paper.

Below 34 degrees where there are no domestic Australian satellite receivers, we propose a downward slope for the EIRP elevation commencing at 42 dBm/200 MHz EIRP at 15-degrees above the horizon, sloping at a gradient of -0.43 dBm/degree of elevation down to 34 dBm/200 MHz at 34-degrees above the horizon (i.e., in the range $15 \text{ degrees} \leq e/ < 34 \text{ degrees}$, $\text{EIRP}_{\text{MAX}} = 42 - 0.43(e/ - 15)$).

The entire mask, from 15 degrees to 86 degrees need only apply in the direction of the geostationary arc.

EIRP Elevation Mask for 27.0-27.5 GHz 'just outside' gateway footprint areas

For the frequency range 27.0-27.5 GHz just outside gateway footprint areas (namely, the remaining parts of Greater Perth and Margaret River), we propose the same shaped EIRP elevation mask as that proposed for inside gateway footprint areas should be used, increased by 12 dB, corresponding to the 12 dB higher baseline and upper TRP limits compared to the limits inside gateway footprint areas.

The entire mask, from 15 degrees to 86 degrees need only apply in the direction of the geostationary arc.

EIRP Elevation Mask for 27.0-27.5 GHz 'further outside' gateway footprint areas

For the frequency range 27.0-27.5 GHz further outside gateway footprint areas (namely, all other spectrum licensed geographies *except* Hobart, Greater Perth and Margaret River), we propose the same shaped EIRP elevation mask as that proposed for inside gateway footprint areas should be used, increased by 15 dB, corresponding to the 15 dB higher baseline and upper TRP limits compared to the limits inside gateway footprint areas.

The entire mask, from 15 degrees to 86 degrees need only apply in the direction of the geostationary arc.

EIRP Elevation Mask for 25.1-27.5 GHz

Resolves 2.2 of Resolution 242 of WRC-19²² (the *output* of WRC-19) accommodates IMT stations with greater than 60 dBm/200 MHz EIRP by restricting the pointing angle of the main beam of the antenna to no closer than ± 7.5 degrees separation angle:

2.2 As far as practicable, sites for IMT base stations within the frequency band 24.45-27.5 GHz employing values of e.i.r.p. per beam exceeding 30 dB(W/200 MHz) should be selected so that the direction of maximum radiation of any antenna will be separated from the geostationary-satellite orbit, within line-of-sight of the IMT base station, by ± 7.5 degrees;

The ACMA has set this as a mandatory requirement for IMT deployment, and we support this approach.

²² https://www.itu.int/dms_pub/itu-r/opb/act/R-ACT-WRC.14-2019-PDF-E.pdf

Conceptually, there is no reason why a GSO satellite at one elevation angle (say 40 degrees elevation) needs more protection than a GSO satellite at any other elevation because the variation in path loss is small compared to the total path loss, which is in the order of 210 dB. As such, there is no need to develop complex sloping masks that mirror an ITU-R M.2101 antenna. It is academic whether the 60 dBm/200 MHz comes from the main lobe, first lobe, second lobe or n^{th} lobe.

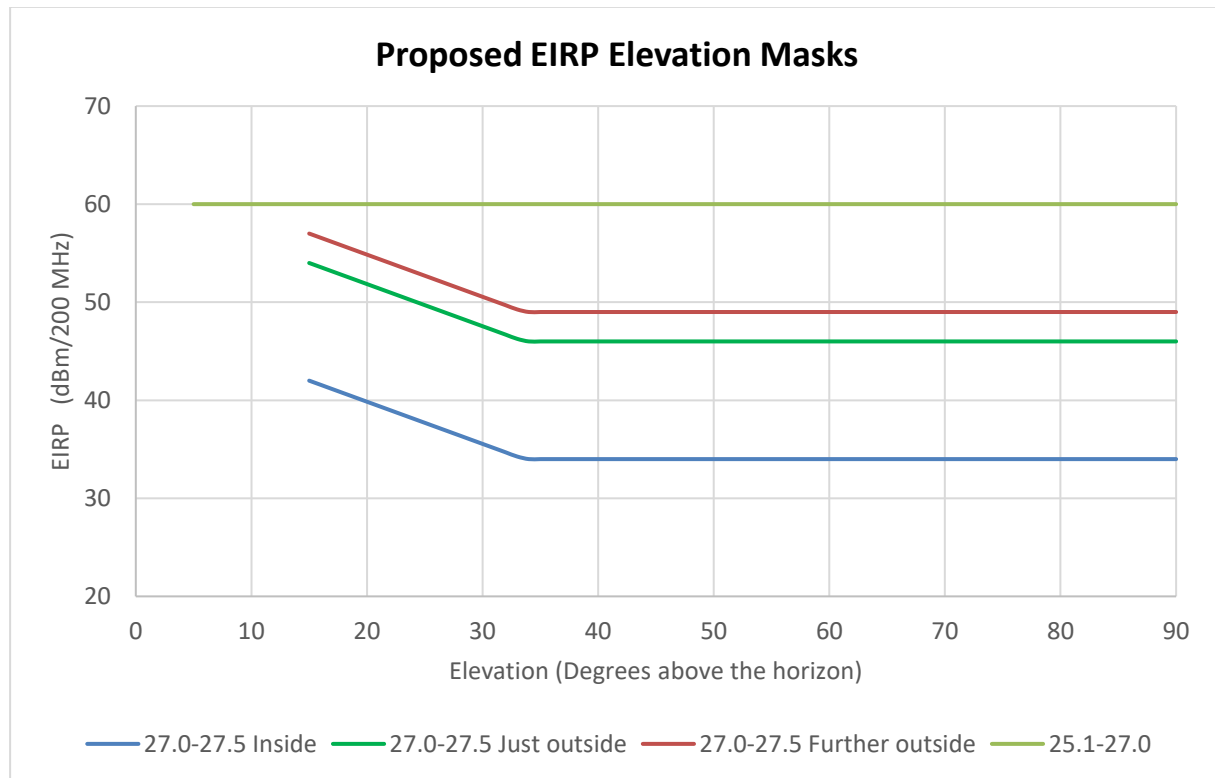
Compliance with the ± 7.5 degree separation angle would require the development of site-specific geo-fencing algorithms with angles uniquely calculated for each base-station location. In addition to the complexity of calculating the angles unique to each site, the unique angle approach offers no substantial benefit over an elevation mask that simply limits power in the broad direction of the geostationary arc. A simpler mechanism would be to apply a 60 dBm/200 MHz EIRP limit to any energy directed above 15 degrees elevation for the range of azimuths that point towards the GSO arc in order to protect ISS and DRS. The application of the elevation mask to a broad range of azimuths offers greater protection to geostationary satellites compared to the ± 7.5 degree separation from a point in the (3-dimensional) sky approach, as it limits emissions along the visible geostationary arc.

We also note that in order to comply with the ± 7.5 degree separation required by Resolves 2.2, there will be some azimuths where the main beam must not go above 8 degrees below the horizon. This is because at any given point on the Australian landmass, there will be two azimuths where the geostationary arc is at the horizon (one just north of east and just north of west). For these azimuths, the beam cannot lift above 8-degrees below the horizon (technically, 7.5 degrees) or it will breach the Resolves 2.2 limit of avoiding the geostationary arc by a ± 7.5 degree separation.

In order to protect ISS and DRS satellites, the mask should apply from very low elevation angles. We propose the mask should apply from 5 degrees above the horizon and need only apply in the direction of the geostationary arc.

Figure 1 below shows all four proposed EIRP elevation masks.

Figure 1: Proposed EIRP elevation masks



3.1.4 Fallback synchronisation requirement and apparatus licence parity

The fallback synchronisation requirement has been included as a final resort to resolve interference issues between licensees where they have been unable to reach a resolution of their own volition. We support the ACMA defining a fallback mechanism for resolving interference disputes between two spectrum licensees in the 26 GHz band. We also support the synchronisation requirement uplink/downlink configuration and sub-frame pattern being contained in RALI[NEW], rather than as a licence condition, as this approach allows flexibility for the configuration to be updated in the future (through a consultation process).

However, we are very concerned about the use of a fallback synchronisation requirement to resolve interference issues between a spectrum licensee and an AWL licensee, as this effectively treats the two licensee types as peers for the purpose of resolution of a stalemate in the negotiation of interference coordination. If the ACMA proceeds with this approach, it will be creating the potential for a small-scale AWL licensee to effectively constrain the deployment choices of an adjacent high-value spectrum licensee at their boundary or force them to adopt a less than optimum synchronisation solution throughout the geographic area of the spectrum licence. Spectrum licensee(s) need to have the ability to decide the resolution mechanism (from a range of possible solutions including guard bands, geographic separation, power reduction, or synchronisation) in consultation with the AWL licensee(s) to resolve interference issues, including the ability to stipulate synchronisation requirement characteristics such as uplink/downlink configuration and sub-frame pattern.

It remains our strong position that spectrum licensees must be able to operate free from interference or other encumbrances within the bounds of their licence conditions, including freedom from having to resolve interference stalemates with adjacent apparatus licensees (in this case, holders of AWLs) which

are typically serving a much smaller populations and areas, and involving significantly less investment in infrastructure.

3.1.5 Devices exempted from registration

We fully support the ACMA's proposed Exemption from Registration requirements as set out in Schedule 3, Clause 4 of the sample spectrum licence. The proposed requirements facilitate the exemption of non-base station equipment (i.e. user equipment) up to 3GPP power class 1 fixed UE from registration. This is important from a privacy perspective. Publishing the address of a fixed wireless UE would reveal there is a wireless fixed broadband service operating at that address supplied by an identified service provider. Such details could be aggregated by third parties along with other information, for unsolicited marketing purposes or even to enable criminal activity such as identity theft.

We also accept that by not registering a Fixed UE, there can be no claim for protection from interference arising from co-channel or adjacent channel operators, and the Fixed UE will not be permitted to cause interference to other co-channel or adjacent channel operations, and that operators do have the option to register a fixed UE should it require interference protection.

3.1.6 Add definition for base station

We propose that a definition for a base station is added to the list of definitions in section 3 of the spectrum licence, given many of tables describing wanted and unwanted emission limits, and the registration exemption requirements in Schedule 3, rely on an unambiguous definition. We note that a definition is not readily available in other instruments such as the Radiocommunications Act.

However, we observe some challenges in developing a workable definition, given the anticipated variety of new devices using integrated access and backhaul (IAB) in the band. We anticipate mobile 'base stations' for example, on trains or buses, may become commonplace to provide high-speed broadband access to commuters. Similarly, IAB repeaters may be used to provide initial coverage ahead of formal 'full-scale' rollout.

In the third round of the TLG, the ACMA proposed the following definition:

- *Base station means a radiocommunications device which supplies a service to one or more other stations;*
- *User equipment station means a radiocommunications device which is not a base station.*

As the ACMA notes, this definition was crafted to "*capture base stations in a private network which may not connect to a telecommunications network. The change will also capture relay only IAB nodes and in-band transmitters as these devices will "provide a service to one or more other stations"*".

In principle, we support the ACMA's proposed definitions from the TLG, as ostensibly, anything that is acting as a base station serving one or more end users (or indeed, other base stations), will need to comply with the in-band and out-of-band emission limits, and is worthy of registration on the ACMA's Register of Radiocommunications Licences (RRL). However, the challenge arises for moveable or 'itinerant' base stations, with no fixed address or site identifier (site ID) that could be entered into the RRL. Thus, we propose the ACMA's definition (as per round 3 of the TLG) be entered into the definitions section of the licence, and in addition, that a further exemption category is added to schedule 3, clause 4 of the spectrum licence to exempt from registration the subset of base stations for which registration would be unworkable. We propose draft amendments to the sample licence in section 3.2.1 below.

3.2 Sample spectrum licence

We offer the following comments on, and amendments to the same spectrum licence.

3.2.1 Base station definition and registration exemption for itinerant base stations

Commensurate with our discussion in section 3.1.6 on the need for a definition of base station to be included, we propose the following definitions are added to the definitions in section 3 of the sample licence:

- **Base station** means a radiocommunications device which supplies a service to one or more other stations;
- **User equipment station** means a radiocommunications device which is not a base station.

In addition, we propose the following amendments to schedule 3, clause 4 of the sample licence.

4. The following kinds of radiocommunications transmitters are exempt from the registration requirement in Statutory Condition 3:

 - (a) a radiocommunications transmitter that operates with a maximum total radiated power that is less than or equal to 23 dBm per occupied bandwidth;
 - (b) an indoor transmitter;
 - ~~(c) a base station that is not fixed in location;~~ or
 - ~~(e)~~ a fixed transmitter which:
 - (i) is not a base station; and
 - (ii) operates with a maximum total radiated power that is:
 - (A) greater than 23 dBm per occupied bandwidth; and
 - (B) less than or equal to 35 dBm per occupied bandwidth.

3.2.2 Typographical errors in the sample spectrum licence

In Section 3, Definitions of the sample spectrum licence, we noted a small typographical error, where the word “is” should be deleted from the definition of occupied bandwidth:

occupied bandwidth, in relation to a radiocommunications transmitter, means the bandwidth of a frequency band, having fixed upper and lower frequency limits, that are ~~is~~ necessary to contain not less than 99% of the true mean power of the transmitter’s radio emission at any time.

3.3 Section 145 determination

In Schedule 2, Part 1, Section 1, there is a small typographical error in step 1(a). We note from the Technical Framework consultation paper²³, the maximum radial length has been increased to 53 km (above the 30 km proposed in the TLG) to account for the proposed increase in TRP limits. As such, step 1(a) should be amended to read “*m* is each of the integers from 2 through ~~300~~ 530”. This will also then align step 1(a) with step 2(b), which already shows 530 steps.

3.4 Tx RAG - Managing Interference from Spectrum Licensed Transmitters

In part 1, section 4 for the definition of *indoor transmitter*, there is a small typographical error where the letter ‘m’ (for metres-squared) should not be superscripted:

- (ii) in any other case – less than or equal to $-7 \text{ dBW}/\text{m}^2$ per occupied bandwidth.

Assuming the ACMA is amenable to our proposal to replace the EIRP elevation mask as outlined in sections 3.1.2 and 3.1.3, then the protection requirements for space receive stations described in part 4, section 11 should be updated to: reflect the revised elevation mask (e.g. tables 1, 2 and 3), add details describing the azimuth ranges where the mask is to be applied; and remove the restrictions on electronic beam steering other than the restrictions imposed by ITU-R Resolution 242 Resolves 2.2 (for example, the text in section 11 (2)(e) of the Tx RAG).

3.5 Rx RAG - Managing Interference to Spectrum Licensed Receivers

Regarding Part 3, Section 8(4), we object to transmitters licensed under an AWL being treated as if the transmitter is operated under a spectrum licence. See section 3.1.4 for further detail on our concerns regarding the spectrum licence and AWL parity issue.

Regarding Part 3, Section 8(8), we remain of the view that class licensed devices such as body scanners should not take precedence over spectrum licensed devices, however, we also acknowledge the ACMA’s decision on this matter. We nonetheless implore the ACMA to tighten the requirements for registration of fixed class licensed devices in the RRL. Where location details can reasonably be known, as is the case with body scanners at airports, it should be mandatory that devices are registered in the RRL. This is imperative, as spectrum licensees will be unable to coordinate around such devices if they are not listed in the RRL.

3.6 Draft RALI[New]

We note that except for sections 3.4 and 3.7, RALI[NEW] is yet to be drafted and as such, our comments are limited to the sections currently available for review.

3.6.1 Fallback synchronisation requirement and apparatus licence parity

As per our comments in section 3.1.4 above, when the ACMA drafts section 2.2.1, **Coexistence with adjacent AWL services** in RALI[NEW], we strongly encourage it to ensure spectrum licensees can operate free from interference or other encumbrances within the bounds of their licence conditions, including freedom from having to resolve interference stalemates with adjacent apparatus licensees (in this case, holders of AWLs) which are typically serving much smaller populations with significantly less investment in infrastructure, as well as typically having much shorter licence terms. For completeness, we support the ACMA defining a fallback mechanism for resolving interference disputes between two

²³ p.17.

spectrum licensees in the 26 GHz band, which will be specified in section 2.2.2, **Coexistence with 26 GHz band spectrum licensed services** in RALI[NEW].

3.6.2 Fallback synchronisation uplink-downlink configuration

We also support the synchronisation requirement uplink/downlink configuration and sub-frame pattern being specified in RALI[NEW], rather than as a licence condition, as this approach allows flexibility for the configuration to be updated in the future (through a consultation process). We support the FR2.120-1 UL-DL pattern described in Table A.1.3-2 of 3GPP TS 38.101-4 V15.4.0; we do not support the FR2.120-2 UL-DL pattern.

[C-I-C begins]

[C-I-C ends]