

OPTUS

Reply to the Applicants'
submission regarding Optus'
position on the SOPV

Telstra and TPG application for
merger authorisation for proposed
spectrum sharing in regional
Australia

Public Version

5 December 2022

1 EXECUTIVE SUMMARY

1. This brief submission is provided by Optus in relation to the set of materials lodged with the ACCC by the Applicants under a cover letter from Gilbert + Tobin of 11 November 2022 (**Applicants' Response**). The Applicants' Response was framed as a reply to submissions made by Optus and annexed a third report of Mr Richard Feasey, a second Aetha report, and a third report by Dr Jorge Padilla. Some material was only recently made available, including Dr Padilla's third report which was placed on the public register on 28 November.
2. Optus is mindful that the deadline for the ACCC's decision has been extended on several occasions and that, at some stage, the ACCC must conclude its consultation in this matter so the ACCC can finalise its review. For that reason, Optus has not addressed all matters covered in the Applicants' Response. Nevertheless, several issues were raised in the Applicants' Response where Optus considers the ACCC will benefit from further context.
3. For the avoidance of doubt, the fact that Optus has not responded to particular aspects of this new material should not be taken as Optus accepting the propositions put forward by the Applicants. Optus disagrees with a range of the Applicants' assertions and, where a point is not specifically addressed, it should not be understood as accepted. Optus has put forward significant material, including detailed submissions, witness statements and expert economic and industry reports, to assist the ACCC in its assessment of the Proposed Transaction. Optus relies on the detailed materials it has provided to the ACCC to date.
4. This submission briefly addresses the following matters:
 - (a) The future use of low earth orbit satellite (**LEOSat**) technology.
 - (b) Several technical matters raised in Aetha's supplementary report.
5. Enclosed with this submission is a further report of Matt Hunt of AlixPartners that covers matters arising in the third report of Richard Feasey and the third report of Jorge Padilla.
6. For completeness, Optus notes that separate correspondence has been sent to Telstra addressing the assertion in the Applicants' Response about the weight that the ACCC should give to material that Optus has provided to the ACCC on a confidential basis. Telstra's submission is confusing. It makes little sense having regard to the various means by which the ACCC will have obtained material relevant to the application, much of which will not have been provided to the Applicants (or to interested parties including Optus).
7. Optus has also had limited access to materials provided to the ACCC by the Applicants, including the application itself. By way of example, Aetha's supplementary report seeks to undermine the statement given by Mr Steve Turner for reasons including that he may have

used a different definition of the RCZ.¹ That is very likely to be the case as the precise boundaries of the RCZ have not been made available to the public (or to Optus). Aetha's supplementary report also accepts that redactions that the Applicants applied to Aetha's first report were unfortunate and prevented Optus from engaging with the analysis: p 23.

8. Optus has at all times sought to assist the ACCC in relation to its assessment of this application. Optus is, however, only able to do so to the extent that it has access to material lodged by the Applicants. This has, at times, required Optus' experts to exercise professional judgement about matters such as the expected parameters of the RCZ.
9. Optus does not consider it productive to respond to the Applicants via the ACCC about what material has been shared between the parties and when. However, for the avoidance of doubt, save for a version of the statement of Nicolaos Katinakis dated 9 November 2022 which was provided on an external counsel only basis on 22 November 2022, Optus has otherwise not had access to any of the redacted material in the Applicants' submission in response to the ACCC's Statement of Preliminary Views (**SOPV**) dated 1 November 2022, including the annexures, or to the Applicants' Response. This includes Dr Padilla's third report, which was only recently placed on the public register on 28 November 2022.

¹ For example, Aetha Supplementary Report (10 November 2022) pp 4, 6.

2 APPLICANTS' RESPONSE – SELECTED ISSUES

10. As noted above, Optus does not propose to engage with all of the issues raised in the Applicants' Response. Many of the matters raised in the Applicants' Response are by way of submission only and are not supported by new factual information. Optus relies on the significant volume of evidence that it has already provided to the ACCC about matters including investment incentives, scale and spectrum advantage, the relevant counterfactual and the competitive pressure it would place on Telstra as the dominant MNO in Australia, and the importance of infrastructure based competition including longer term effects.

2.1 Low Earth Orbit Satellite or 'LEOSat'

11. Emerging technologies such as LEOSats were not referred to in any particular detail in the application.² LEOSats and other technologies have, however, been addressed in later materials, including in response to questions raised by the ACCC.³ That material included details of use cases addressing the way in which LEOSats may disrupt terrestrial networks, either on a standalone basis or to complement parts of a MNO's existing mobile network.
12. Despite only passing reference in the application, LEOSats have been raised in further detail by the Applicants in subsequent submissions. For example, Telstra has suggested that Optus could use LEOSat technology to make up or even exceed Telstra's terrestrial network coverage.⁴ More recently, the Applicants' have indicated that the assessment of the competitive process in the longer term should include technological innovation such as LEOSats, and that these emerging technologies suggest that possible harms that arise from the Proposed Transaction over the longer term should be given little or no weight.
13. Although LEOSats have the potential to significantly uplift mobile coverage in Australia, with the possibility of potentially delivering full mobile connectivity across the continent, Optus considers that LEOSat technology will *not* provide a replacement for 5G services, which is the focus of spectrum sharing that is the subject of the Proposed Transaction.
14. LEOSats will initially provide additional coverage for SMS and emergency calls. That may, over time, be extended to include voice communications. Optus does not expect that LEOSats will provide a substitute for 5G services delivered via terrestrial mobile networks.

² A passing reference is made to the (unlikely) scenario regarding TPG's potential exit from the agreements where it engages in a targeted site build supplemented by other services such as LEOSats and neutral host providers: [194].

³ ie TPG response to ACCC RFI of 14 September 2022 (23 September 2022); Telstra response to ACCC RFI of 14 September 2022 (21 September 2022).

⁴ Telstra response to ACCC RFI of 14 September 2022 (21 September 2022), p 18.

This is consistent with Telstra's response to the Regional Telecommunications Review 2021 Issues Paper (see Annexure AP-03 to the public version of the statement of Andrew Penn of 12 August 2022).⁵ In AP-03 (p 6), Telstra observes that '*there are challenges to overcome*' and that '*satellite will never be a replacement for mobile*'. Optus agrees.

15. Optus does not expect LEOsats to be a viable mass market alternative for mobile services in the short, medium or long term. [REDACTED]

[REDACTED]

- 16.

[REDACTED]

17. In addition, there are further challenges to the widespread use of direct-to-mobile LEOsat services, including the finalization of 3GPP standards on non-terrestrial-network (NTN) technology (LEOSat direct-to-mobile). Optus understands LEOsat companies are currently developing non-standardised and proprietary solutions, which makes interoperability and device compatibility challenging. For those reasons, Optus agrees with the view of Telstra that LEOsats "*will never be a replacement for mobile*".⁷

18. Regardless of the expected service offering that LEOsats might deliver and the expected timelines involved, Optus considers that LEOsats do not assist the position that is being put forward by the Applicants. This may be why the issue was not raised in any meaningful way in the application itself. The Applicants also appear to put forward differing views on

⁵ Optus notes that it has not been provided with any of the material that is redacted in Mr Penn's statement.

⁶ See <https://www.optus.com.au/connected/leaders-insights/leo-satellite-to-mobile-technology>.

⁷ Telstra's Response to the Regional Telecommunications Review 2021 Issues Paper, p 6, attached to the Statement of Andrew Richard Penn of 12 August 2022, at Annexure AP-03.

the impact of LEOSats. In particular, in some places LEOSats are expressed as not being a replacement or substitute for mobile networks,⁸ and in other places the Applicants claim Optus can overcome any detriment from the Proposed Transaction by using LEOSats.⁹

19. Under either scenario LEOSats do not assist the Applicants. If, for example, LEOSats are relevant to Optus' response to the Proposed Transaction, then LEOSats would also be relevant to TPG's regional network and investment in the counterfactual. This sits uncomfortably with any claims made by TPG that it faces a coverage impediment to competition and growth in the future. If the alternate position is preferred, then LEOSats do not materially impact the effect of the Proposed Transaction on Optus' ability to compete in the market in the future. In either scenario, LEOSats do not address the substantial effect on competition which will result from the Proposed Transaction.

2.2 Optus' sites and investment

20. It is unnecessary to address in any further detail Optus' future investment plans should authorisation be granted. The effect of the Proposed Transaction if it proceeds has been dealt with exhaustively in Optus' evidence and expert materials provided to the ACCC.
21. The Applicants have, however, addressed several factual matters in recent materials, including the Applicants' Response, that concern Optus' investments and its sites which are either incorrect or need to be further contextualized. We briefly address these issues.
22. *First*, the Applicants' submission in response to the SOPV (1 November 2022) suggested Optus was in the process of commissioning 330 greenfield sites in the RCZ: Table 2.
23. It will be unsurprising to the ACCC that Optus' network planning arrangements are made over a lengthy time horizon. While the application has created significant uncertainty, Optus has continued to approach network planning on the basis that the impact of the Proposed Transaction will be properly understood and authorisation will be refused. The fact Optus has taken steps to plan for future sites in the RCZ shows nothing more than Optus having planned to invest in rural and regional Australia absent the transaction.
24. The ACCC should, however, be aware that the figures referred to by the Applicants in Table 2 are incorrect. While Optus cannot test the calculations used by the Applicants to arrive at those figures, it appears that they may include planned greenfield sites beyond the RCZ and, in particular, may account for greenfield sites in the 67-81.4% population region.

⁸ As noted above, Telstra's Response to the Regional Telecommunications Review 2021 Issues Paper, p 6.

⁹ Telstra response to ACCC RFI of 14 September 2022 (21 September 2022), p 18; Statement of Giovanni Chiarelli, para [48]; Applicants' submission in response to SOPV and Interested Parties, Attachment A, para [128].

- [REDACTED]
- [REDACTED]
25. *Second*, in a similar way, the Applicants' Response refers to Optus' continued registration of early access sites in the RCZ: p 6. The answer to this is straightforward and is explained by the Applicants in the section of the response addressing Yuen Kuan Moon's statement.
26. As the ACCC is aware, Telstra gave a court-enforceable undertaking to address serious competition concerns about action taken by Telstra to interfere with Optus' 5G rollout. The undertaking provides for a process for Optus to notify to the Accredited Person (**AP**) any notification for early access that Optus has applied or proposes to make to the ACMA. The ability for the AP to receive such an application from Optus ran until 30 November 2022.
27. The suggestion in the Applicants' Response that Optus' use of the process provided for in the undertaking is somehow illustrative of its future intentions is, quite frankly, absurd. If Optus did not avail itself of this process now, it would not be able to do so if authorisation was ultimately refused. Optus considers that the undertaking has been an important tool to remedy this egregious conduct. It would make no sense if Optus elected to not use this process and lost the opportunity to do so while the ACCC was reviewing this application.

2.3 Aetha, coverage and capacity

28. The Applicants' Response addresses information provided by Optus regarding the role of mid-band spectrum in the regional rollout of 5G technology and the substantial spectrum advantage that Telstra will achieve if authorisation is granted. Optus appreciates that the spectrum will, in general, be available in the MOCN pool. However, it is Telstra, with its existing customer base and retail network, which will leverage that spectral advantage.
29. Optus' spectrum experts, including Mr Steve Turner, have carefully reviewed the public version of the supplementary Aetha report (10 November 2022). Having assessed Aetha's work, Optus considers that the spectrum-related analysis that Optus provided to the ACCC, particularly Mr Turner's statement, is accurate. Optus' analysis has assessed the impact of the Proposed Transaction having regard to the way in which Optus approaches network dimensioning. Aetha's reports use a hypothetical model which, in Optus' experience, does not reflect the way in which a MNO would approach spectrum management in practice.

(i) Aetha's criticism of Mr Turner

30. It is not necessary or helpful for Optus to respond in relation to all areas of disagreement with Aetha's work. It is, however, necessary to briefly identify a number of methodological issues that Aetha emphasised in an attempt to undermine Mr Turner's analysis:

- (a) In several places Aetha has sought to discredit Mr Turner's analysis by suggesting that Optus has used a different definition of the RCZ: ie. pp 4, 6, 11. As the ACCC will appreciate, this observation is correct. The Applicants have not made public details of the precise boundaries of the RCZ and, for that reason, Optus has had to develop its own model. This has limited Optus' ability to meaningfully engage with and test technical information that the Applicants have provided to the ACCC.
- (b) Aetha appears to take issue with various methodological approaches adopted by Mr Turner. For example, Aetha criticises Mr Turner's exclusion of certain spectrum bands from his analysis on the basis that those bands do, to some unspecified degree, overlap with areas of the RCZ: ie p 12. In his analysis, Mr Turner sought to exclude spectrum that is used only in metropolitan areas. Again, Optus does not know the boundaries of the RCZ and has had to apply reasonable assumptions.
- (c) Aetha has, at some length, endeavoured to contrast Mr Turner's analysis of spectrum holdings with Aetha's own assessment. This appears to be directed at undermining the broader analysis undertaken by Mr Turner. Mr Turner made it clear at par [39] in his statement that any differences are minor and do not have a material impact on the analysis. However, for the avoidance of any doubt, unlike Aetha, Optus would include spectrum that is available under apparatus licences: see Aetha, p 12. That spectrum is still accessible to the MNO holding the licence.
- (d) Optus is confused by Aetha's attempt to dispute the number of Optus mobile sites. For the reasons already given, Optus does not know the precise boundaries of the RCZ. Optus is, however, best placed to provide the ACCC with an accurate count of its own sites, not Aetha. Aetha's suggestion that '*site numbers typically increase over time*' (p 6) is, as a matter of logic, difficult to dispute. However, the suggestion that Optus has constructed somewhere in the order of 500 sites in remote and regional areas in one year reveals a lack of awareness about network deployment in practice. Similarly, Aetha's use of Google Maps to confirm the presence of telecommunications infrastructure at a particular location provides no information as to whether that is Optus' infrastructure or if the assets belong to another MNO.

The Applicants appreciate the functionality of the Register of Radiocommunications Licences (**RRL**), including the many reasons why a MNO may place a registration at a site. For example, a MNO may be aware of telecommunications assets at a site, may wish to collocate at that site and therefore place a registration on the RRL in preparation for that to occur. Telstra should have provided this basic information to Aetha in order to arrive at accurate site counts for MNOs. In any event, the ACCC should prefer Optus' own calculations of its sites to those listed by Aetha.

(ii) Failings in Aetha's methodology

31. Optus' key concerns with Aetha's work primarily concerns two issues – *first*, the treatment and averaging of spectrum, and *second*, Aetha's hypothetical network dimensioning model which bears no resemblance to network deployment and spectrum planning in practice.
32. *First*, regarding the comparison of spectrum holdings, Aetha explains in its supplementary report that it has adopted an average that is weighted by sites. Aetha describes this as a '*useful simplification*': p 10. For the reasons already explained in Mr Turner's statement, the use of a site-weighted average, or SWAED, bears no relationship to the way in which MNOs approach the task of network deployment and management of spectrum holdings.
33. Aetha explains in its supplementary report that the site-weighted average can then be multiplied by the number of sites to provide an indicator '*that is a proxy for the capacity that the network operator concerned could produce, using the spectrum sites in question*': p 10. Again, this results in an *oversimplification* of relative spectrum holdings, where available spectrum in remote (and spectrum poor) areas is inflated, and available spectrum in the areas where demand is the greatest (accordingly, with the most spectrum), is suppressed.
34. Optus has analysed the averaged spectrum referred to by Aetha, using the numbers presented by Aetha, compared to the actual spectrum available in the top 10 regional towns (by population) where all spectrum licensed bands are available for:
- (a) Telstra as a standalone operator;
 - (b) Telstra as part of MOCN;
 - (c) Optus.
35. The result of this reveals that Aetha's model of averaging spectrum and then multiplying by sites, in these areas:
- (a) underestimates the amount of spectrum available to Telstra by up to 5%;
 - (b) underestimates spectrum available to Telstra under the MOCN deal by up to 4%;
 - (c) overestimates the amount of spectrum available to Optus by up to 7%.
36. This further calls into question the spectrum averaging techniques used by Aetha to derive their conclusions regarding the suggested need for additional spectrum for Telstra.
37. *Second*, Optus disagrees with the network dimensioning model that Aetha deploys. It is theoretical and bears no resemblance to the task of spectrum management and network dimensioning in practice. This failing is illustrated by the example that Aetha provides in its supplementary report: p 9. Aetha describes a sector operating on two bands – 800MHz and 1800MHz. It is premised on there being no coverage overlap between base stations. In effect, the base station that Aetha describes is operating as a mobile coverage 'island'.

38. This island effect does not reflect the way in which Telstra (or any MNO for that matter) deploys network assets. A network does not consist of a series of islands where there is no coverage overlap. In simple terms, sites that are less than twice the distance apart of the smallest coverage area of the band they are carrying will not be subject to the effect that Aetha has described. Away from Aetha's theoretical model and in the real world of network dimensioning, where a full stack of bands is deployed (or available to be deployed) on a series of base stations in close proximity, all of the bands will be able to carry a proportion of the traffic on the site.
39. By ignoring this basic feature of network deployment, Aetha has underestimated capacity in respect of Telstra sites. While Aetha's model offers an interesting thought experiment, it fails to account for key features of the way in which mobile networks operate in practice.

(iii) *Coverage and capacity*

40. At the core of the application rests what appears to be a conflation by the Applicants of coverage and capacity. On the one hand, the Applicants are asserting that a key benefit of spectrum sharing will be the alleviation of network congestion for Telstra. However, at the same time, the Applicants accept that coverage is also important. For example, in responding to Optus' submissions about Telstra's alleged network congestion, the Applicants suggest that mid-band spectrum is of limited use and that Telstra's network is more dispersed: p 7-8. The Applicants state that:
- 'Optus would appear to accept that it is not useful to deploy mid-band spectrum on towers outside population centres, and therefore it would be expected that the percentage of Telstra towers on which mid-band has been deployed would be lower than is the case with Optus.'*
41. This reveals the disconnect between the problem Telstra suggests it is seeking to address and the solution proposed. If Telstra is encountering capacity or congestion issues, then that will occur where there is a population centre. In order for congestion issues to arise at a particular site, there must be significant data usage such that cannot be supported by the network; site congestion requires actual usage by active subscribers. Congestion or capacity issues do not typically arise in sparsely populated areas in rural or remote Australia. Optus has provided real world evidence of Telstra's network coverage claims and network performance which respond to the theoretical statements and assumptions made in Aetha's reports.¹⁰
42. The Aetha method incorrectly assumes different coverage ratios for the mid-bands in the RCZ and has used these ratios to define the proportions of the traffic that mid-bands could

¹⁰ See, for example, Statement of Steve Turner dated 20 October 2022 at paragraphs [93]-[106], which use case studies to show the coverage which can be achieved by Telstra on mid band spectrum.

serve. However, in reality mid-bands do serve all the traffic in regional areas where people actually live, work and use their mobile device.

43. The impact of this theoretical simplification is to reduce the capacity of real world networks. The Aetha method makes a fundamental error by conflating coverage sites and capacity sites. The analysis conflates a stand-alone, coverage-limited base station with a real-world network of base stations deployed in a rural town that are providing coverage and capacity as a system. In reality, the inter-site distances (**ISD**) between a network of base stations in population areas would be significantly less than the maximum distance over which a signal could be received for the bands with the least coverage. This means that *all bands* will carry traffic in approximate proportion to the amount of bandwidth available.
44. Optus has provided evidence demonstrating this, as evidenced by Telstra's ACCC RKR coverage maps, Optus drive testings on the Telstra network, and Optus' live network statistics.¹¹ Aetha's method is only applicable in the real world if the ISD is 9.45 km or more. However, the typical ISD in regional populated areas is 1.5-2.5km (and well below the 3.5 km mid-band cell range).
45. The Aetha method illustrates coverage and capacity from a single, coverage-limited base station. In reality, RSPs service regional towns using a collection of base stations, which provide overlapping coverage and capacity as a system. The distances between base stations in regional towns is generally less than the maximum distance over which a signal could be received for bands which achieve the least coverage, meaning that all bands will carry traffic in approximate proportion to the amount of bandwidth available in each band.
46. For the reasons Optus has previously explained, to the extent Telstra is managing network congestion, then that will arise in locations where the number of SIOs is increasing network demand (ie population centres). Mid-band can then be deployed to increase capacity. Congestion will not arise in sparsely populated areas in rural and remote Australia where MNOs are likely to rely only on low band spectrum in order to maximise network coverage. As has been explained above, Optus has already provided evidence illustrating how actual population distributions around regional population centres (ie where regional congestion will occur) can be managed through efficient use of mid band spectrum.

¹¹ See, for example, Statement of Steve Turner dated 20 October 2022 at paragraphs [93]-[106].