DRAFT MOBILE TERMINATING ACCESS SERVICE DETERMINATION

SUBMISSION TO THE AUSTRALIAN COMPETITION AND CONSUMER COMMISSION

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Executive summary

Vodafone welcomes the opportunity to respond to the Australia Competition and Consumer Commission's (**ACCC**) *Public Inquiry on the access determination for the Domestic Mobile Terminating Access Service* (**MTAS**) Draft Report.

Estimating the cost of the MTAS in Australia

The ACCC's approach of determining lower and upper bounds for the cost of the MTAS in Australia is misleading and masks its underlying approach to determining the MTAS price. The upper and lower bounds are largely arbitrary and do not provide the ACCC with insight into the upper and lower bounds of the cost of the MTAS in Australia. The ACCC should not rely on averaged results of subsets of the benchmark countries to determine the upper and lower bound of MTAS costs. Instead, it should focus on how much weight each observation should receive in forming its view about the MTAS price. For instance, the ACCC's method for determining the draft MTAS price is equivalent to ascribing a weight of 3/10 (30%) to the Peruvian, Portuguese and Swedish observations and 1/20 (5%) to the France and UK observations.

Based on the analysis of the models by the ACCC and Analysys Mason, we agree with the ACCC's assessment that more weight should be given to the Peruvian and Portuguese observations, however we consider that less (or possibly zero) weight to the Swedish and UK observations, and zero weight should be given to the French observation. Using this approach, we propose two options for the ACCC to set the MTAS price:

- **Option 1** equally weights the 2020 output from the Peruvian and Portuguese models to determine a point estimate for the cost of the MTAS in Australia.
- **Option 2** weights the Peruvian and Portuguese outputs at 7/16 and the Swedish and UK estimates at 1/16.

These options are illustrated in Table 1.

Table 1: ACCC approach to determine cost estimates

	France	Peru	Portugal	Sweden	UK	MTAS estimate
Benchmark MTAS costs	0.52	1.35	1.33	1.17	0.71	
Weighting scheme	**Weights**					
Option 1		1/2	1/2			**1.34**
Option 2		7/16	7/16	1/16	1/16	**1.29**

Notes: MTAS benchmarks reflected the PPP-adjusted figure for 2020 including spectrum costs. Costs are measured in cents per minute.

While options 1 and 2 produce MTAS cost estimates of 1.34 and 1.29 cents per minute (**cpm**) respectively, the results will change after the ACCC reviews feedback to the benchmarking exercise and makes corresponding adjustments to the benchmark models.

The international benchmarking exercise

The international benchmarking exercise is complicated. It relies on nine distinct TSLRIC+ models (or, 'calculation engines', as Analysys Mason describes them) combined with the adjustments that Analysys Mason have designed for the models. While the micro-adjustments proposed by Analysys Mason have been transparent, the process has masked limitations in the models themselves and avoided the inclusion of Australian-specific factors where it has been difficult to reflect those costs in the model.

There is still much for the ACCC to consider before it finalises the benchmarking exercise. It should continue refining its analysis until it is confident it has a reasonable view on the cost of the MTAS in Australia. It is unreasonable for the ACCC to assume that the cost of these Australian-specific factors is zero simply because it is difficult to make adjustments to the underlying models. Such an assumption means the ACCC would not be taking account of the direct costs of supplying the MTAS. There are at least four areas where the benchmarking exercise has not taken into account factors that increase the cost of mobile network operations in Australia:

- site costs;
- the mix of transmission services and the cost of transmission;
- impact of commuters on network traffic; and
- national security and natural disaster requirements.

We have provided additional evidence and approaches on these issues as part of this submission.

It is prudent for the ACCC to request at least two further sensitivity analyses. First, the ACCC should understand the impact of fluctuations in data traffic volumes on MTAS unit costs. Second, the ACCC should assess the impact from an early closure of the 3G network. This latter sensitivity analysis is required in response to the Australian Communications and Media Authority (**ACMA**) draft recommendation for the reallocation of 900 MHz spectrum. This could lead to the premature closure of a 3G network for the hypothetical efficient operator or a (potentially large) upfront spectrum access cost in 2023 that will need to be incorporated in the ACCC's assessment of spectrum costs.

High FTAS prices require action

We are disappointed by the ACCC's comments in relation to the fixed terminating access service (**FTAS**). The Draft Report states that the ACCC will "consider whether to conduct a holistic review of the MTAS and the FTAS prior to the expiry of the current MTAS and FTAS declarations". In our previous submission, we provided compelling evidence that the cost of the FTAS was likely to be well in excess of its economically efficient cost. We further demonstrated that a high FTAS price could impede competition and reduce consumption, and we indicated that action was required now to avoid inefficiently high FTAS rates from harming competition post-NBN migration.[1]

The ACCC acknowledges that a review of the FTAS is warranted but it has not committed to undertaking this review. It should reconsider this position.

[1] Vodafone (2020), *Access determination for the mobile terminating access service*, Submission to the ACCC, January.

1 Estimated MTAS cost

The ACCC's description of its approach to determining the estimated cost of the MTAS and the draft MTAS price should focus on the weight it is attributing to each model as this will enable a more transparent assessment of its decision.

The ACCC proposes to set an upper bound for the MTAS cost estimate where 1/3 weight is ascribed to the observations from Peru, Portugal and Sweden and no weight is ascribed to France and the UK. Its lower bound ascribes a 1/5 weight to the benchmarks from France, Peru, Portugal, Sweden and the UK (see **Table 2**). Using this approach, it is evident that the ACCC's draft MTAS price decision, which weights the upper bound at 3/4 (75%) and the lower bound at 1/4 (25%), is equivalent to ascribing a weight of 3/10 (30%) to the Peru, Portugal and Sweden observations and 1/20 (5%) to the France and UK observations. This latter weighting better reflects the ACCC's approach to setting the proposed MTAS price in the draft decision. It highlights that the ACCC has more confidence in the results from Peru, Portugal and Sweden and less confidence in the results from France and the UK.

Table 2: ACCC approach to determining cost estimates

		France	Peru	Portugal	Sweden	UK	MTAS estimate
	Benchmark MTAS costs	0.52	1.35	1.33	1.17	0.71	
	Weighting scheme	**Weights**					
A	ACCC upper bound		1/3	1/3	1/3		**1.28**
B	ACCC lower bound	1/5	1/5	1/5	1/5	1/5	**1.02**
*3/4 * A + 1/4 * B*	ACCC draft decision	1/20	3/10	3/10	3/10	1/20	**1.22**

Notes: MTAS benchmarks reflected the PPP-adjusted figure for 2020 including spectrum costs. Costs are measured in cents per minute.

The ACCC has rightly discounted four of the models examined by Analysys Mason (i.e., East Caribbean, Mexico, the Netherlands and Spain). These 'calculation engines' were not fit-for-purpose – as Analysys Mason states:

- less weight should be attributed to the East Caribbean and Mexico models on the basis the models do not respond to spectrum adjustments in the expected way; and
- results from the Netherlands and Spain should be treated with caution since they significantly overstate radio network requirements.[2]

Analysys Mason state in their report that the adjusted models from Peru, Portugal and Sweden should be "considered with the greatest weight" as they are calculating comparable total economic costs… and allocating a similar proportion of cost to voice".[3] Analysys Mason further notes the UK "could be included in this group on the basis its total economic cost is comparable" with the difference being that it allocates costs in a different way to the other three models.[4] To that end, the ACCC's approach to determining a point estimate for the cost of the MTAS in Australia has some merit in that it provides more weight to the Peruvian, Portuguese and Swedish benchmark results.

[2] Analysys Mason (2020), *Benchmarking the cost of providing MTAS in Australia*, May, pp 33-34.
[3] Ibid, p34.
[4] Ibid.

The ACCC's lower bound estimate does not reflect the commentary in Analysys Mason's report. Analysys Mason's recommendation does not explicitly discuss whether to include or exclude France in the benchmark set.[5] Earlier in the report it observes that the French model produces a total economic cost that is well-below any of the other benchmarks.[6] The total economic cost for the LRAIC+ from the French model was $0.59 billion in 2020 – the next closest value is nearly double this figure, with the Swedish model producing a total economic cost estimate of $1.16 billion in 2020. The French model produces a significant outlier in the total economic of the MTAS and, for this reason, the ACCC should not use it to determine the lower bound of the cost estimate for the MTAS without a thorough investigation of this result both within the context of the model and in comparison to the total economic cost results produced by the other benchmark models.

Furthermore, the ACCC should treat the results from the UK model with caution due to anomalous results in the sensitivity analysis. Specifically, the 2% decrease in costs associated with a massive increase in coverage does not make sense and Analysys Mason's explanation of the result, which it attributes to economic depreciation, is unsatisfactory (see **section 2.3**). The ACCC must investigate the analysis for the increased coverage scenario if it is to rely on the cost estimate produced from the UK model in determining the cost of the MTAS in Australia.

We are concerned about the inclusion of the Swedish model in the ACCC's upper bound estimate of the MTAS cost. The Swedish model produces total economic cost results that are distinctly different, and lower, from the total economic costs estimated for Peru and Portugal. To that end, the inclusion of the Swedish model in the upper bound set is unlikely to contribute to a reasonable determination of the upper bound estimate for the cost of the MTAS in Australia. It should be excluded from the upper bound estimate if the ACCC retain its methodological approach.

We do not consider it necessary for the ACCC to produce upper and lower bound estimates for the cost of the MTAS as this approach is misleading and distracts from the ACCC's fundamental task of determining how to weight the model outputs to determine a cost estimate for the MTAS in Australia. The upper and lower cost estimates reflect a specific approach by the ACCC to sub-setting the data and generating averages from the different subsets. However, these are not true upper and lower bound cost estimates. The ACCC must remain cognisant that the true cost of the MTAS in Australia may not lie within the range of the upper and lower cost estimates – indeed, the true cost of the MTAS could lie outside the range of all observations in the sample and the ACCC does not have a means for determining the likelihood of these different outcomes. We provide **Figure 1** as a visual representation of the issues discussed in this paragraph.

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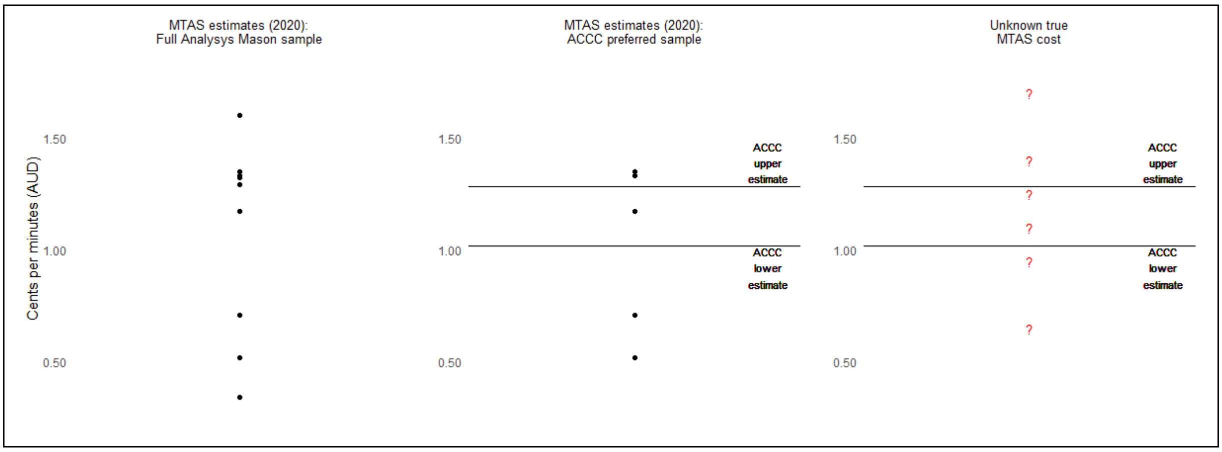
[5] Ibid.

[6] Ibid., p29.

Figure 1: Visual representation of the challenge of using the sample data to determine the true cost of the MTAS in Australia



Note: Results include PPP adjustment and spectrum costs.
Data sources: Analysys Mason, ACCC.

For the reasons set out above, we consider that more weight should be given to the Peruvian and Portuguese results and less weight to the Swedish and UK results. We provide two options for a proposed revision to the weighting for the estimate of the MTAS cost in **Table 3**:

- **Option 1** equally weights the 2020 output from the Peruvian and Portuguese models to determine a point estimate for the cost of the MTAS in Australia – this approach also reflects our proposed revised upper bound cost estimate if the ACCC's methodology is retained.
- **Option 2** weights the Peruvian and Portuguese outputs at 7/16 and the Swedish and UK estimates at 1/16.

We have also provided a deconstruction of Option 2 to show how it can comprise a weighted mix of upper and lower bound results should the ACCC wish to retain this methodology. In putting forward, the weighting for Option 2 we assume the ACCC has satisfied itself that the UK model can be relied on to produce reasonable estimates of the impact of major expansion in coverage. If this is not the case the UK result should be zero-weighted and the remaining figures adjusted accordingly. We expect the final results to change following incorporation of the changes suggested in **section 3**.

Table 3: Proposed options for determining MTAS cost estimates

		France	Peru	Portugal	Sweden	UK	MTAS estimate
	Benchmark MTAS costs	0.52	1.35	1.33	1.17	0.71	
	Weighting scheme	**Weights**					
A	Option 1 (and/or revised upper bound)		1/2	1/2			**1.34**
B	Revised lower bound		1/4	1/4	1/4	1/4	**1.14**
*3/4 * A + 1/4 * B*	Option 2		7/16	7/16	1/16	1/16	**1.29**

Notes: MTAS benchmarks reflected the PPP-adjusted figure for 2020 including spectrum costs. Costs are measured in cents per minute.

We support the ACCC's proposed expiry date of 30 June 2024 for the new access determination.

2 Benchmarking methodology

The international benchmarking exercise has proved to be a complicated and costly task. Under a cost model approach, stakeholders have one model structure to consider and one set of data inputs to review. Under the international benchmarking exercise, stakeholders have had to consider a set of up to nine different models (including some that are not written in English) and their associated data inputs. While the micro-adjustments proposed by Analysys Mason have been transparent, they have masked limitations in the models themselves and avoided Australian-specific factors where it has been difficult to reflect those factors in the model. As an example of a limitation, the Swedish model only has an option for leased line or microwave transmission, it does not permit the ACCC to consider the impact of a transmission mix with a significant amount of fibre transmission. There is still much for the ACCC to consider before it finalises the benchmarking exercise and it should continue refining its analysis until it is confident it has a reasonable view on the cost of the MTAS in Australia.

2.1 Benchmark set

The ACCC and Analysys Mason have created a 'straw man' of our previous observation that the benchmark is a "small opportunity sample" and that it may lead to "biased results and a high degree of variance". We did not state that more samples (or 'calculation engines' as Analysys Mason calls them) were required. We said the approach uses an 'opportunity sample' and that this might be prone to certain kinds of error including biased results and high degrees of variance.

Both the ACCC and Analysys Mason stated that they considered nine benchmark models sufficient for the ACCC to come to a view on the estimated cost of the MTAS in Australia. However, Analysys Mason indicated that four of the 'calculation engines' were unsuitable for providing a cost estimate in Australia and cast doubt on the suitability of a further two of the benchmark models (France and the UK). The ACCC is, therefore, relying on 3 to 5 benchmarks to estimate the cost estimate of the MTAS in Australia. By any measure, this can only be described as a small sample.

There is clearly variance within the MTAS cost estimates produced by the sample of benchmark models. The range of MTAS cost estimates from the five benchmark models that were used in the ACCC's lower bound estimate (i.e., France, Peru, Portugal, Sweden and the UK) is $0.83 after the PPP adjustment. The average MTAS cost estimate from the five models was $1.02, the median was $1.17 and there was a standard deviation of $0.38.

The ACCC's estimates of MTAS cost are highly sensitive to the countries selected and the way in which samples are weighted. For instance, the cost estimate that uses an average of the Portuguese, Peruvian and UK models is $0.15 (or 14%) lower than a cost estimate produced by the Portuguese, Peruvian and Swedish models. That is, changing one country in a subset of three countries caused a 14% variation to the average cost of the MTAS.

An example of potential bias in the benchmarking exercise is the manner in which the models assume the number of subscribers, and traffic, in each geotype is in proportion to the population of that geotype. This does not reflect reality of traffic distribution and is largely a modelling construct (see **section 2.3**). As a consequence, modelled networks that rely on population for network-dimensioning might miss other factors that mobile networks use to dimension their network. This might lead to systemic divergences between modelled costs and actual costs.

These features mean the international benchmarking exercise does not provide the ACCC with a view on how close the benchmark estimates are to the true cost of the MTAS in Australia. This is particularly the case given some of the issues with the 'calculation engines' described in **sections 2.3**, **2.4**, **2.7** and **2.8**. As a consequence, the ACCC cannot be confident that it has a good understanding of the magnitude and direction of the regulatory error produced by the benchmarking exercise. The uncertainty provides further reasons for the ACCC to take a conservative approach to setting a price for the MTAS.

2.2 Level of demand

We have reviewed Analysys Mason's method for forecasting voice and data traffic and do not have any specific comments on the approach taken. It would be prudent for Analysys Mason to conduct a sensitivity analysis on the forecast growth in data traffic per user to ensure the models respond as expected and to provide the ACCC with insight into the MTAS implications of volatility in the growth of data traffic per user.[7] Analysys Mason have forecast data traffic growth for the years 2020-2025 at (40%, 40%, 30%, 30%, 20%, 20%) in each year respectively, we suggest a scenario with (35%, 30%, 25%, 20%, 15%, 10%) is run for sensitivity purposes only.

2.3 Geography and cell coverage radii

Mobile coverage of our vast continent varies considerably between each MNO. It is imperative for the benchmarking exercise to capture the effect of Australia's unique geography on the cost of deploying mobile networks. We are therefore extremely concerned about two of the results for the sensitivity analysis for the scenario where Analysys Mason assumed a greater level of network coverage for the hypothetical efficient operator. Specifically, the Portuguese and UK models appear to exhibit a decline in the cost of supplying the MTAS following a substantial increase in geographic coverage. The median result from the remaining benchmark models shows an 11% increase in costs associated with this change. In the case of the UK model, the associated explanation that the decline in costs "appears to be due to the economic depreciation of the network costs" is unsatisfactory and the ACCC cannot have confidence that the model is fit-for-purpose in terms of providing a reasonable cost estimate for the MTAS in Australia. The ACCC should consider removing the UK model from its determination of the lower bound of MTAS costs.

The approach of using SA2 areas, as defined by the Australian Bureau of Statistics, is reasonable however, the ACCC should be cognisant of the limitations of solely relying on population density to determine geotype classification. For instance, the Sydney Airport SA2 is often classified as "Rural" [c-i-c]

. Labels used in the models such as 'rural' can be highly misleading as to the location of a particular geography and the volume of traffic for the area. For instance, the classification of SA2s solely based on population density seems to bias against the industrial parts of major urban centres. Using the classifications in the ACMA network forecasting model, we have identified numerous SA2s with industrial (or similar) zones that were classified as "Rural" or "Remote" (see **Table 4**). The use of population density to determine traffic volumes means these areas could have less sites than required for the volume of traffic associated with them. In this context, the reliance solely on population density for determining traffic distributions is flawed. The ACCC may want consider combining this data with the number of businesses or, preferably, employees by SA2.

[7] Specifically, cells AH25:AM25 on Forecast tab of Analysys Mason's *Inputs and outputs of MTAS benchmarks* spreadsheet.

Table 4: Selection of SA2s in major cities classified as "Rural" or "Remote"

Sydney	Melbourne	Brisbane	Adelaide	Perth
Sydney Airport	Port Melbourne Industrial	Rochedale - Burbank	Lonsdale	Osborne Park Industrial
Banksmeadow	Flemington Racecourse	Eagle Farm - Pinkenba	Adelaide Airport	Perth Airport
Port Botany Industrial	Melbourne Airport	Brisbane Airport		Canning Vale Commercial
Chullora	Braeside	Brisbane Port - Lytton		Jandakot Airport
Yennora Industrial		Carole Park		Bibra Industrial
Smithfield Industrial				O'Connor (WA)
Wetherill Park Industrial				Henderson
Prospect Reservoir				

Commuters provide another example of how the approach of relying solely on population density to determine traffic volumes may not yield an appropriate distribution of traffic volumes to determine network dimensioning requirements. The ACCC has indicated that it will consider further information and evidence on this issue. We have taken a two-step approach to this task:

1. We have provided an example of the utilisation at two sites [c-i-c]

2. We have analysed our data traffic for 2019 across all SA2s. [c-i-c]

[c-i-c]

[c-i-c]

The data demonstrates that there is a flow of commuter traffic into certain SA2s, that the busy hour occurs at different times of day and the average traffic per user appears to increase with population density. These results demonstrate that data traffic is unlikely to be in proportion to the number of residents in an SA2. The results are consistent with an increase in data traffic associated with commuters but we are not suggesting this is the only cause of the observed differences in average data traffic per user between geotypes.

2.4 Mobile technologies in use

We continue to support the ACCC's approach of implementing a 2G shutdown in 2019 and ensuring that 2G network costs are recovered prior to 2019. We have revised our views on the future use of 3G technologies in light of recent ACMA proposals regarding spectrum in the 900 MHz band. Separately, we consider that the impact of Australia's national security arrangements can be modelled through changes to the treatment of assets associated with mobile technologies in use.

Potential closure of 3G networks

Material developments in spectrum policy should impact the ACCC's assumptions about 3G mobile technologies in use. Since the ACCC's Position and Consultation Paper on the Domestic Mobile Terminating Access Service access determination was released in January 2019, there have been significant market-altering developments announced in relation to the provision of 3G networks in Australia. Specifically, the ACMA released a Consultation Paper on the *Draft spectrum re-allocation recommendation for the 850/900 MHz band* in May 2020. That paper proposes the re-allocation of spectrum in the 900 MHz band and proposes that the reallocation period for that spectrum ends on 31 December 2023. As a consequence, it is conceivable that existing operators who rely on the 900 MHz band to deliver 3G services may be forced into a premature closure of their 3G networks if they are unable to secure 900 MHz spectrum through the re-allocation process.

Both Vodafone and Optus rely on the 900 MHz band to deliver 3G services. In the event one (or both) of these operators does not procure 900 MHz spectrum through the re-allocation process, it will impact the delivery of 3G services in Australia. The low band spectrum in the 700 and 850 MHz bands are not feasible substitutes for delivering 3G services due to the cost of deploying equipment in this band and the use of those bands for delivering 4G services and, in the future, 5G services.

It is important for the ACCC to understand the impact of both the acquisition of 900 MHz spectrum and an early 3G closure to inform its views on estimated cost of the MTAS. The ACCC should replace the recurring 900 MHz apparatus licence fee from 2023 with an upfront spectrum cost for the hypothetical efficient operator to retain its 900 MHz spectrum. There is uncertainty on the magnitude of the upfront cost that would be associated with acquiring 900 MHz spectrum in 2023. In such circumstances, it is reasonable to base the upfront spectrum cost on recent Australian low-band benchmarks (e.g., the unsold 700 MHz auction). In addition, the ACCC should develop a sensitivity analysis to model the impact of an early closure of the 3G network for the hypothetical efficient operator.

National security arrangements

The ACCC has acknowledged that national security requirements, which restrict the participation of certain vendors, will have implications for the competitiveness of the market for supply of equipment. It notes that this will affect the prices and quality of the equipment provided in the market. However, the ACCC states that there is insufficient information on how this impacts the cost of providing the MTAS on 3G and 4G technologies. As such, the ACCC has not made any adjustment to reflect the impact of national security arrangements in Australia.

Implicitly, the ACCC is making an assumption that the incremental cost of national security requirements is zero. This is unreasonable and inconsistent with its own observations. We previously submitted a study commissioned by an impacted vendor that suggested investment costs for 5G infrastructure will increase by 8-27 per cent.[8] Outside the direct cost on 5G infrastructure, there is an indirect link to the operation of 3G and 4G networks if the latter utilises equipment supplied by a non-compliant vendor. 5G traffic is not permitted to "touch" any equipment of a non-compliant vendor (including radio access network, core network and transmission network equipment). This means either all non-compliant vendor equipment in the mobile network needs to be replaced at once or a range of technical adjustments need to be made to the mobile network to prevent leakage of 5G traffic onto non-compliant vendor equipment. Either route is a costly exercise.

We consider a practical way for the ACCC to replicate the impact of MNOs replacing 3G and 4G network equipment due to 5G-related national security requirements would be to set a shorter asset life for 3G and 4G Radio Access Network (**RAN**) equipment. For instance, the asset life of this equipment could be shortened by in each of the models to reflect the need to revisit the site, de-commission existing equipment and install new equipment. In addition, we maintain the view that the cost of 3G and 4G equipment will be higher following the introduction of national security requirements and associated reduction in competition in the market for network equipment. The ACCC should consider a one-off uplift in radio access network equipment unit costs from 2018 onwards – we consider a one-off 17% increase (the midpoint of the previously noted range) as a reasonable assumption in the absence of specific evidence.

Finally, we are unclear how the ACCC's comments on a multi-vendor approach and bargaining power relate to national security requirements. Multi-vendor approaches cannot utilise equipment from restricted vendors, undermining the feasibility of such strategies. The information in the article cited by the ACCC does not demonstrate the absence of a sustained price impact from reduced competition.[9] In addition, the ACCC has not provided any evidence to support its assertion that there might be differences in bargaining power of MNOs. Multi-vendor approaches and potential differences in bargaining power are unlikely to be Australian-specific factors. For these reasons, multi-vendor approaches and bargaining power are irrelevant to the ACCC's consideration of national security requirements on the cost of network equipment.

[8] Oxford Economics (2019), *Restricting competition in 5G network equipment: An economic impact study*, December.

[9] ZDnet (2019), 'Huawei ban did not impact Optus 5G launch', https://www.zdnet.com/article/huawei-ban-did-not-impact-optus-5G-launch-ceo/, 31 January.

2.5 Spectrum costs & holdings

We generally support the assumption regarding spectrum holdings and the approach to determining spectrum costs. We agree that it is reasonable for the ACCC to consider the spectrum holdings of Vodafone post-merger.

We understand the ACCC has included the 800 MHz band for the purpose of capturing spectrum costs associated with the use of this band for 3G services by some operators in Australia. The ACCC states that the 800 MHz has "always been used for 3G" services.[10] This assumption does not match our experience. We used our 850 MHz holdings for 3G services prior to 2014. Since that time, it has used this spectrum to deliver 4G services. In a scenario where the 900 MHz band becomes unavailable due to re-allocation, we do not consider it reasonable to assume that a hypothetical efficient operator can rely on the 800 MHz band for 3G coverage. Two of Australia's three MNOs either do not have access to, or would not use the 800 MHz band to deliver 3G services in this manner. We have set out our proposed approach for considering the potential loss of 900 MHz spectrum in **section 2.4**.

2.6 Currency

We support the ACCC's proposal to include the Purchasing Power Parity (**PPP**) adjustment as some of the benchmark countries have a materially different cost of living to Australia. The World Bank's PPP conversion factors are intended to control for the impact of price level differences between countries. We generally support the use of the PPP conversion factors to control for differences in the cost of non-traded goods between countries though the circumstances where PPP conversion factors will not capture specific cost differences between countries.

Analysys Mason's methodology of using equipment capex to determine the proportion of costs that are assumed to be tradeable is reasonable. We support the use of a methodology that reflects variations in the use of tradeable goods in the hypothetical efficient operator for each benchmark country.

PPP provides a general measure of price level differences for good services across different countries. As stated in our previous submission,[11] there are four areas where PPP adjustments may not adequately represent differences between Australia and the benchmark countries in relation to the cost of non-traded goods. Those areas are transmission costs, site deployment costs, network costs associated with natural disasters and national security requirements. We have put forward proposals in **sections 2.4, 2.7** and **2.8** that outline specific adjustments that may be required for these areas.

2.7 Transmission costs

There are two factors that mean it is unlikely transmission costs in the benchmark models will reflect the true cost of transmission incurred by a hypothetical efficient operator in Australia:

1. The average distance between sights and the nearest aggregation point is likely to be longer in Australia compared to the benchmark countries.

[10] ACCC (2020), *Public inquiry on the access determination for the Domestic Mobile Terminating Access Service*, Draft Report, May, p32.
[11] VHA (2020), *Access determination for the mobile terminating access service*, Submission to the ACCC, p14.

2. The mix of transmission solutions in Australia is likely to be different to the benchmark countries.

The PPP adjustment will not adequately reflect the difference in transmission costs. We understand Analysys Mason has conducted a sensitivity analysis to reflect the second point however the adjustment is not included in the ACCC's estimates for the cost of the MTAS that are derived from the benchmark countries.

The first point has not been addressed. The ACCC state that "most benchmark models do not have distance-related inputs when determining the costs of transmission services" hence the ACCC state "it would not be possible to adjust the models to reflect the average distance between mobile sites and the nearest aggregation point". We dispute this assertion. It is possible for the ACCC, using data collected through its Public Inquiry into the Domestic Transmission Capacity Service (**DTCS**), to determine the average distance of transmission links used in Australia's mobile networks and the annual cost for different types of transmission services.

In the following section, we provide an example of how the ACCC might consider the impact of transmission costs in the model using our transmission data. We use leased line services at [c-i-c] sites. Of these services, [c-i-c] sites are located in the top 6 metropolitan areas. Based on data, we used for the 2016 DTCS FAD inquiry the average distance of our metropolitan links was about [c-i-c] kilometres and the average distance for our regional links was about [c-i-c] kilometres. It is possible to use this data with the 2016 DTCS FAD pricing calculator and the draft 2020 DTCS FAD to determine a blended transmission cost per service (see **Table 5**).

Table 5: Weighted average transmission costs in Australia

	2016 DTCS FAD			Draft 2020 DTCS FAD		
Capacity	**Metro, 14 km cost ($/yr)**	**Regional, 150 km cost ($/yr)**	**Weighted average cost ($/yr)**	**Metro, 14 km cost ($/yr)**	**Regional, 150 km cost ($/yr)**	**Weighted average cost ($/yr)**
2 Mbps	5,319	8,250	**6,574**	3,457	5,363	**4,273**
10 Mbps	9,773	15,099	**12,054**	6,352	9,814	**7,835**
30 Mbps	14,241	21,945	**17,540**	6,408	9,875	**7,893**
100 Mbps	20,753	31,889	**25,522**	9,339	14,350	**11,485**

Notes: The weighting was based on our site split between the top 6 metropolitan areas and other parts of Australia, with 57% of the weight ascribed to metro areas. The definition of metropolitan used for the site split is not based on the definition of metropolitan used by the ACCC for the DTCS.

Based on this analysis, we have compared the Draft 2020 DTCS FAD to opex costs for last mile access in Peru (see **Table 6**) and looked at the unit opex costs in the Swedish and Portuguese models. The latter models use real costs in 2010 and 2013 respectively and then apply cost trends to this data making a direct comparison with the 2020 DTCS FAD difficult. Nevertheless, the cost of leased line transmission in Australia appears to be substantially higher than the unit cost for leased line transmission in the benchmark models. As the ACCC is aware, this differential is likely to be even greater if transmission costs are used from previous DTCS FADs. The differences in transmission cost between Peru and Australia demonstrate how a PPP adjustment does not adequately cover difference in these input costs. For instance, the cost of 2 Mbps link in Australia appears to be 1445% higher than the cost of the link in Peru, while the PPP adjustment for Peru was 77%.

Table 6: Comparing Australia's leased line costs with Peru

	Draft DTCS FAD	Peru	
Capacity	**Weighted average cost (A$ 2020)**	**LMA cost (local currency)***	**LMA cost (A$)**
2 Mbps	**4,273**	208	277
10 Mbps	**7,835**	2,083	2,769
30 Mbps	**7,893**	2,083	2,769
100 Mbps	**11,485**	4,166	5,539

Notes: na – not available. *Data sourced from Peru model, AssetsInputs tab, cells J69, J72:J74 based on costs in 2020/21. Foreign exchange rates were sourced from Analysys Mason's *Inputs and Outputs of MTAS benchmarks* supplied by the ACCC.

Distance is a defining feature of Australia's geography and it impacts the cost of transmission services in a manner seldom seen in other parts of the world. It is imperative that the costs associated with distance are reflected in an estimate for the cost of the MTAS in Australia. We have provided a methodology for the ACCC to determine the impact of distance on the average unit cost of leased line transmission services in Australia. We recommend the ACCC implement the approach.

The proposed adjustment to reflect the mix of transmission technologies used in Australia should be included in the benchmarking adjustments. We understand Analysys Mason conducted a sensitivity analysis using the following split of technologies: microwave (25%), leased lines (25%) and fibre (50%). However, some of the models are not capable of implementing this technology split. For instance, we understand the Swedish model only permits a split between microwave and leased line transmission solutions. The ACCC will need to consider this issue further before placing reliance on the adjusted mix of backhaul results produced from the Swedish model.

We recommend the adjustment for the transmission mix and the proposed adjustment to reflect the average distance-based unit cost for transmission in Australia are both used in the ACCC's final decision. Transmission is one of the key differences between Australia and the benchmark countries. We are large, low density country – the transmission solutions often adopted in other countries are may not be feasible in Australia. If the ACCC is to developed an informed view of the potential cost of the MTAS in Australia, it needs to develop a detailed understanding of the approach to transmission dimensioning and costs in the benchmark models.

2.8 Site costs

We stand by our previous comments that the cost of site deployment in Australia is significantly above the costs incurred in other countries. We have attached a sample of recent site build cost in **Appendix A**. We have provided the ACCC with unabridged itemised data (i.e., it includes more than the site and construction costs) so that the ACCC has insight into how we approach the issue of site deployment. The ACCC will need to remove data it considers irrelevant to site and construction costs. (This would be the case if, for instance, costs are captured elsewhere in the benchmark models).

Analysys Mason has suggested that it requires the average cost of "site deployments across all sites not just limited recent/new deployments".[12] While we recognise why this input is required, the evidence request is unreasonable given some sites have been built and upgraded over a 25-year history and we do not have a business requirement to maintain records for this purpose. Moreover, we are concerned by this attempt

[12] Analysys Mason (2020), *Benchmarking the cost of providing MTAS in Australia*, May 2020.

to reverse the burden of proof. There is no reason to expect that site and construction costs would be the same in Australia as it is other benchmark countries. In the absence of the required evidence, the ACCC should demonstrate why it is reasonable to rely on the site cost assumptions from the benchmark models without making adjustments for the purposes of estimating the cost of the MTAS in Australia.

The Draft Report suggests that reliance can be placed on site costs from the 2007 WIK-model. We do not agree. The WiK model was a 2G-only cost model and the sites values it used incorporated land and construction costs derived from Australian and European data. At the time, the ACCC considered that "land costs comprised a substantial component of site values".[13] We accept that differences in land values might be captured through PPP-adjustments (though this should be verified by the ACCC) however, the main driver for high site costs in Australia appears to be construction costs (see **Appendix A**). Clearly, the 2G-only nature of the WiK also limits its usefulness in providing the ACCC with an informed view on site costs. We typically design and build sites to support multiple technologies and expect other MNOs would also take this approach. This necessitates construction costs that are likely to be higher than those use in a single-technology network.

Natural disaster protections are mandated by councils depending on the site location. The requirements will vary depending on the area. For instance, we deploy fire zone shelters where required or use heavier duty poles in cyclone prone areas. We follow the specifications set out in relevant Australian standards. In our experience, a fire zone shelter or a heavy-duty pole adds about [c-i-c] to site deployment costs and a raised shelter (for flood-prone areas) adds about [c-i-c] to site deployment costs.

Vodafone has provided evidence that the cost of recent site deployments in Australia is significantly higher than the site costs used in the benchmark models. Unfortunately, we are unable to provide the ACCC with the evidence it requires on the average site cost for the history of our operations in Australia. Nonetheless, the high cost of site deployment is a material issue in the MTAS Public Inquiry and the ACCC should not rely on site cost inputs used in the benchmark models without investigating this issue.

2.9 Weighted average cost of capital

We note the ACCC's methodology for determining the weighted average cost of capital (**WACC**).

We welcome the specific guidance the ACCC has provided on its approach to determining the credit rating and debt issuance costs for the hypothetical efficient operator. We do not consider it appropriate to use Vodafone Group Plc or CK Hutchison as comparable entities for determining the credit rating of a hypothetical efficient operator in Australia. Both entities operate across diversified geographies and, in the latter case, diversified industries. That said, we acknowledge the proposed use of A- credit rating is robust without these entities and we consider it reasonable to use that credit rating for the purpose of determining the WACC.

The ACCC has indicated that it considers a ten-year term to be appropriate for estimating the cost of debt. While we are aware some Australian telecommunications companies use ten-year corporate bonds, the ACCC should consider how typical the use of this type of debt instrument is in the telecommunications industry before relying on it to determine the cost of debt for the hypothetical efficient operator. We believe shorter debt terms are more widely used in the industry and this should be reflected (potentially with adjustments to align the term for debt and equity) in the ACCC's WACC calculations.

[13] ACCC (2007), *Draft MTAS Pricing Principles Determination 1 July 2017 to 31 December 2008*, p94.

3 FTAS review required

The ACCC's approach to FTAS pricing does not promote the long-term interests of end-users. The Draft Report indicated that the ACCC will "consider whether to conduct a holistic review of the MTAS and the fixed terminating access service (FTAS) prior to the expiry of the current MTAS and FTAS declarations".

As we observed in our previous submission, the FTAS rate is likely to be above the efficient cost of supplying the service.[14] The evidence from international benchmarks is that the regulatory FTAS rate is likely to be above the efficient cost of supplying the FTAS in Australia. The Australian FTAS rate (0.86 cpm) vastly exceeds many European benchmarks, 28 European countires having an FTAS rate that less than a quarter of the Australian rate – the average FTAS rate in these countries is 0.13 cpm.

The ACCC's approach to the MTAS and the FTAS are fundamentlly inconsistent. The ACCC acknowledges that a review of the FTAS is warranted but it has not committed to undertaking this review. It should reconsider this position.

[14] VHA (2020), *Access determination for the mobile terminating access service*, Submission to the ACCC, January.

A Site cost sample

[c-i-c]