Independent Communications Authority of South Africa

Pinmill Farm, 164 Katherine Street, Sandton

Private Bag X10002, Sandton, 2146

Responses to questions of clarity with respect to the Call Termination Process

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Contents

1. Purpose

1.1. The purpose of this document is to provide clarity in response to licensee's submissions on the Asymmetry Briefing Note published on 22 June 2018 on ICASA's website, the Bottom up Fixed Cost model and the Bottom Up Mobile cost model provided to licensees on 3 July 2018.

1.2. The specific areas to be clarified in this note is as follows:

- Asymmetry
- Bottom Up Fixed Cost model
- Bottom up Mobile cost model

2. Operators concerns regarding Asymmetry

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1.	Some operators indicated that ICASA's position on asymmetry is legally defective for the following reasons: • ICASA alleges incumbency advantages over late and new entrants however this in contradiction to ICASA's findings of absolute barrier entry which states that all licensees have 100% market share and SMP in the relevant market.	The Authority's view is that the 2014 behavioural remedies are still relevant in order to address the four market failures identified in the Findings document of 2017.
2.	ICASA's position is inconsistent with regulatory principles and with international practices. International practices do not entitle established operators to asymmetric rates.	As stated in 2014, the Authority has recognized historic market failures in its decision to grant small operators with asymmetry despite having been in the market for a period longer than three years which is typically accepted by international jurisdictions.

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3.	The Authority has pre-determined the outcome of the cost models which will be used to determine any differences in price before they are even complete. The cost models should be developed in good faith.	The outcome of the consultation process on asymmetry was meant to inform ICASA's position on the principles of asymmetry. The cost modelling exercise was an iterative process that solicited the input of affected stakeholders to establish the underlying efficient cost of providing termination services.
4.	The Briefing Note on Asymmetry (Briefing Note) was published on the 22 June 2018. However, prior to that, when operators met ICASA, ICASA was not in a position to explain why only a single BU model for fixed mobile rates was modelled. This therefore contradicts the approach followed by the authority and also makes it clear that the Authority was not in a position to make a determination that asymmetric rates will apply.	The assumption that the Authority did not have a position on asymmetry during the one-on-one meetings with operators is factually incorrect.

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5.	The Briefing Note is based on historic market conditions, whereas the review of the regulations should be based solely on expectations of costs going forward and designed to maximise overall economic efficiencies. Regulations based on historic market conditions are a contradiction and may also lead to disproportionate remedies as regulations, by nature, should be forward looking.	A regulatory review process is informed by both historical data and forward-looking expectations, therefore the statement that the Authority should solely rely on expectations of costs going forward is incorrect.
6.	The qualifying criteria for asymmetry is irrational because the criteria states that operators with a market share of less than 20% of terminating minutes qualifies for asymmetry, however the Authority determined that all licensees have 100% of market share. The 20% criterion is arbitrary as it is not clear how ICASA established 20% an appropriate benchmark.	This statement is factually incorrect. The 20% of terminating minutes refers to a licensee's share of the total termination market comprising of the sum of each licensee's share of its own termination market.

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7.	ICASA's basis to determine asymmetry has no logical connection with the Authority's objective of addressing alleged effects in a market.	Please refer to section 2.1 of the 2014 asymmetry Briefing Note and paragraph 11.10.1 of the 2014 reasons document**.**
8.	Information about the legal status of the Briefing Note: • Was the Briefing Note issued in terms of a legislative provision? • If so, please identify which Act or Regulations • Was the Briefing Note approved by council of the Authority? If so, when? And if not, then which body or committee was responsible for the issuing of the Briefing Note. • Reasons for the conclusion in the Briefing Note, particularly reasons for rejecting the written submissions that were made by operators on the 14th March 2018.	The purpose of the Briefing Note was to provide clarity in respect of the principles in relation to asymmetry following the review process of the 2014 call termination pro-competitive conditions imposed on licensees. On 27 August 2014 the Authority also published a Briefing Note with respect to the principles of asymmetry for the same purpose. On 22 August 2016, the Council of the Authority established a committee, to review the Call Termination Regulation, 2014. Any other information sought relating to the functions of the committee can be requested in terms of Promotion of Access to Information Act,2000. The Authority received four (4) written submissions in response to the process contemplated in section 67(8)

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		of the ECA and accordingly considered all the submissions received in reaching its findings.
9.	The current Call Termination Regulations allow certain licensees to charge asymmetrical rates until 30 September 2018. • Operators would like to know if the Authority intends to make new call termination regulations which will allow the charging of asymmetrical rates for the period after 30 September 2018. • If so, please confirm that the Authority intends to comply with the notice and comment procedure in section (4)(4) of the ECA before the regulations are made. • Please confirm that the Authority intends to conduct public hearings in respect of such draft regulations as contemplated by section 4(5) of the ECA. • Please confirm that part of the notice and comment procedure and or public hearings	Please refer to the Briefing Note published on Friday, 22 June 2018. The Authority may conduct public hearings as contemplated in section 4(5) of the ECA.

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	in respect of such draft regulations. Parties will be allowed to make submissions regarding the correctness of the conclusions in the Briefing Note.	
10.	How will the TD and BU models be applied / used to determine the asymmetry rates as well as the termination rates.	The Authority will consider the TD and BU model results in determining the new termination rates and draft regulations.
11.	Is paragraph 2.9 of the Briefing Note applicable to small operators.	Paragraph 2.9 deals specifically with new entrants as it should be read in conjunction with par 2.8.
12.	An operator understands the current regulatory cycle to mean a 3-year period commencing 2018-2021, is this correct?	Refer to footnote 8 of the Briefing Note.

3. Operators concerns regarding BU fixed model

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1.	The Home Subscriber Server (HSS) costs have incorrectly been taken into account. Some operators' networks use the HSS exclusively for the user management of voice subscribers and the controlling of voice calls e.g to setup a voice call. All data users and traffic is managed on the Broadband Network Gateway (BNG)/ Broadband Remote Access Server (BRAS) in combination with other traffic management components. The routing table of the HSS within the latest model reflects that the HSS is used for data as well as voice. This is incorrect and should only include voice related traffic.	On reviewing the matter and analysing multiple approaches taken by other regulators on the issue, the Authority concluded that it is not appropriate to allocate HSS cost to either data or minutes. This is because HSS costs are primarily driven by subscriber numbers, and the such costs are recovered by the line rental, and, as such, are not within the scope of the termination rate models.
2.	The Fixed Model Briefing notes indicated that the input of the *Network Management System (*NMS) per core node had been reduced from 2 to 1 in order to be consistent with the mobile model. This resulted in a total quantity of 8 NMS. In the previous version of the model, the original cost	The Authority recognizes that fixed network operators have to manage a wider range of systems and platforms than a typical mobile operator. This wider range results from (among other things) a relatively larger product range, and larger number of legacy systems. However,

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	of the NMS, as submitted by an operator, was divided by 16 to correlate with the 16 NMSs as presented within the model. The current model is therefore understating the total NMS cost by 50%. It is recommended that the cost of the NMS should be multiplied by two to ensure that the total cost of the NMS is consistent with the original submission by operators.	for fixed networks to require double the number of NMSs of a mobile operator is excessive.
3.	As a consequence of the comments within the Q&A, the submitted Session Boarder Controller (SBC) costs were revisited. There was a mistake in the originally submitted costs and they should be adjusted.	The model has been updated with the revised SBC costs.
4.	The Softswitch costs still do not fully incorporate the Geoprobe voice testing equipment costs. As noted before, the voice testing equipment is not optional and installed within the network to	The model does not contain a specific cost element for Geoprobe. The cost of this function is covered within NMS and Softswitch. The unit costs of both NMS and Softswitch are already higher than those in several

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	ensure carrier grade quality of service is provided on all voice calls to subscribers.	international benchmarks, and higher than comparable costs supplied in some other operators' submissions. For this reason, the Authority does not feel any additional cost is required to cover this functionality.
5.	In point 2.4 of the Q&A it is argued that the core length has been reduced from the original figure to be more in line with that of the mobile network. It is clear that the access and core lengths as calculated by the model is understated in comparison to the operators' figures. It is the operators' position that the length as submitted by them reflects a real-life network and not an approximate network as assumed by the model. It is therefore proposed that the average access aggregation link and the core length should be adjusted to reflect the real-life network.	The fixed operator's core network was not reduced to the corresponding mobile networks distance. The Authority revised the length of the fixed core network distance in line with SANRAL's reported distance for managed national roads.
6.	In the latest model, ICASA has reverted back to the initial assumption of 40 years useful life for	It is not unusual for a regulator to set useful life in its bottom-up (BU) costs models different to those used for statutory accounting purposes.

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	ducts based on comments from other operators claiming inconsistency between the mobile and the fixed model. The operator notes that duct costs are not an input into the mobile model. It is therefore not necessary to require consistency between the two models. The MSAN and OLT lifetime costs have also been increased from 10 to 12 years. Operators submit that ICASA's modelling assumptions should take account their accounting policies in respect of lifetimes. Duct, MSANs and OLTs represent significant asset classes within their fixed asset register. The lifetime used by them for accounting purposes has been verified and approved by external auditors.	In determining lifetimes for the BU fixed model, the Authority has considered the submissions of all operators, and has also taken international examples into account.

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7.	The combined opex assumed in mobile (for a non-sub 1GHz small MNO) and fixed models for some operators, appears to exceed actual opex by a factor. The comparison excludes the access network, which we would expect to carry more opex than the core fixed network. There are no employee costs in the reported figures. However, overall, it appears that the ICASA models may substantially overestimate the operators cost, even after adjusting for some opex/capex substitution in the fixed model. We would be grateful for a high-level reconciliation, explaining the vast differences with the operators reported figures.	The Authority deems that such a reconciliation is neither meaningful nor necessary. The BU model is modelled on a hypothetical efficient operator (not any specific operator). The TD models are based on specific operators and, therefore, reconciling these with BU results will not add any value.
8.	In a workshop with ourselves, it was confirmed that there was no small operator scenario in the fixed BU model. The Authority's creation of a second BU Fixed scenario was undertaken over a very short time frame, during the period 20 June 2018 to 29 June 2018, and was prepared in	In light of the valid concerns raised by the stakeholders, the Authority's position is that a small operator scenario in the fixed BU model will not be considered for price setting of Fixed Termination Rates (FTR).

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	parallel to undertaking material changes to the BU mobile model and without requesting any information from ourselves as a small FNO. We therefore consider that the small fixed operator scenario has been developed in insufficient time, is not based on robust assumptions and has been prepared without sufficient consultation with industry and hence produces unreliable results. The approach and method here appear clearly to be fatally arbitrary.	

4. Operators concerns regarding the Bottom Up Mobile Model

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1.	The principle that the network is dimensioned to account for the maximum load is incorrectly applied in the model as the technology splits by service do not vary over time.	The model has been updated, taking into account the technology splits in line with the data submitted by the operators.
2.	We would note that the market calculation within ICASA's model is not very transparent, since total traffic volumes are pasted into the model and the subscriber forecasts are identical in all years. This necessitates most of our arguments being presented in terms of total traffic rather than the measures of traffic per subscriber (since the subscriber values in the model are not representative of the still-growing South African market).	The model has been updated, taking into account the subscriber values in line with data submitted by the operators.
4.	The Authority has determined that the modelled situation is one in which the small operator is	The modelled situation is one in which the small operator is only entitled to use national roaming outside its own

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	entitled to use national roaming only outside its own network coverage area. We disagree with this principle, as this ability to use roaming anywhere on the host network is a benefit to small MNOs which leads to a lower cost base. Not reflecting this in the BU model, inappropriately overstates the costs of the small MNO.	network coverage area. We consider that national roaming is a cost incurred by small operators in areas they serve, but where they do not roll out their own infrastructure. We covered the issue of national roaming in our briefing paper of November 2017 (Section 2.2.3).
5.	The commercial roaming rate assumed in the model is inappropriately high and the current contractual rate is more than 20% lower. Maintaining a forward-looking cost input which is higher than both the prevailing and 2020 levels is clearly not rational and leads to an unrealistically high cost of national roaming assumed in the model. As a result, the level of asymmetry is inappropriately overstated. The model should be updated to reflect actual national roaming rates.	The national roaming rates applied in the model are based upon analysis of all operators' data submissions. The formulation of NR as a cost considers commercially negotiated rates, as there is no basis (neither via benchmarks, nor via efficiency adjustments) upon which to propose alternatives.

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6.	We remain of the position that the utilisation parameters for backhaul should be less than 50%, primarily to deal with data traffic spikes without dropping packets.	The current backhaul utilisation factor of 70% is consistent with international benchmarks and is thus not updated.
7.	The Draft BU mobile model assumes the same proportion of cell tower sites are shared for large and small MNOs, i.e. effectively 50% shared and 50% exclusive. This is unrealistic as the proportion of cell towers shared should be greater for small MNOs when compared to the proportion for large MNOs. Unique assumptions should be used for large and small operators respectively.	It is impossible to predict with certainty the degree to which a hypothetical operator (that is, one thought of as operating with today's technology and under today's market conditions) would share sites. The Authority deems that in this context the working assumption of 45% shared cell towers, 45% exclusive cell towers and 10% rooftop sites is acceptable.
8.	We note that the adjustments made to the busy hour parameters lead to a lower outcome for data in the revised BU model than the previous version of the BU model. This is in stark contrast to the data previously provided to ICASA	The busy hour parameters were determined using data from all operators, in addition to international benchmarks.

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	regarding actual busy hour statistics. There is no evidence that ICASA has considered these empirically grounded parameters. Furthermore, it is not clear to what extent international benchmarks have been used to inform the current model inputs and whether these benchmarks are appropriate in the context of the characteristics of the South African market. Can ICASA provide a detailed methodological note regarding the derivation of these inputs?	The model calibrates reasonably with the operators' actual number of sites and the Authority, therefore, concludes that the input parameters are internally consistent.
10.	We fundamentally disagree with the proposed scenarios and submit that there should be a single model with a single scenario to set MTRs and the market share for the hypothetical operator should be set with reference to the number of MNOs in the market. The regulatory precedent from Europe, where small operators exist in many markets, demonstrates that relative scale of established operators is not a	The Authority has prepared the large and small MNO scenarios without prejudice, based upon traffic and subscriber data provided by all operators, both large and small.

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	consideration when setting MTRs and has not historically been used as rationale for asymmetry.	
11.	We consider that the wealth adjustments made in the BU model materially understate upfront spectrum fees. We understand from analysis of the wealth adjustments that they are based on relative nominal GDP per capita data. The basis and rationale for this approach is not clear but we consider there to be material issues relating to the timing which understates the output.	The Authority deems that there is no unanimously accepted methodology when comparing auction benchmarks. It is, therefore, not surprising that using different methodologies results in significant differences between benchmarks.
12.	We consider that the relative GDP per capita is not the most appropriate method to benchmark the value of the spectrum. We consider that relative mobile ARPU levels are a more appropriate benchmark with which to value the spectrum as this reflects the relative value of subscribers, and ultimately the value which can	The Authority deems that methods based on measures of relative wealth, such as GDP, are generally more widely used for this sort of inter-country benchmarking than ARPU.

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	be realised from purchasing spectrum. We submit that the valuation be reconsidered.	
13.	Cell radii in the rural geotype should not be different for the large operator and the small operator. The rationale to reduce the coverage cell radius to account for comparatively high traffic demand is contrary to the underlying BU principle and logic which is meant to add capacity sites as required to supply demand in excess of coverage capacity. It effectively amounts to defining a new geo-type with differential assumptions where the geo-type assumptions should be the same. Assuming that the stated reasoning has merit, it is not clear how the Authority arrived at 5.5 km as an appropriate cell radius for a small MNO in the rural geo-type. This decision is arbitrary and irrational.	The coverage layer refers to sites which are traffic-loaded, and the cell radii hence vary with traffic density – this is separate to the issue of capacity sites. With regard to the 5.5km, we have adopted a value based upon data provided by operators in their previous submissions, whilst also considering the range of international benchmarks.
14.	Staying with the Authority's high-level approach, it is recommended that direct costs be excluded	

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	when calculating the % mark-up to better reflect on the cost causal link which. We disagree with the inclusion of direct retail costs (50% of total costs) when calculating the proportion of "non-common costs" because it reflects poorly on the cost causal link and results in a disproportionate allocation of common costs to non-network. Direct retail costs such as acquisition and retention costs which mainly include handset subsidies, ongoing commission, and equipment costs which account for +/-50% of total cost do not attract common business operating expenses (CEO, IT, Finance, HR, Legal, etc.) in proportion to their contribution to total costs, they attract significantly less.	There are two opposing effects here. First, a possible adjustment to the classification and assumptions regarding causality along the lines suggested by the commenter, which would tend to increase the mark-up. Second, a possible efficiency adjustment which (if we were to attempt it) would tend to reduce the mark-up. The mark-up we have recommended has the advantage that it is based on actual operator data (from the TD models) but the disadvantage that it does not carry out either of these two possible adjustments, which go in opposite directions. It is worth noting that one of the operators did provide the recurring cost (e.g., opex) inputs already fully marked-up for each network element. We have compared the percentage of capex represented by these inputs with the equivalent non-marked-up opex percentages implied by the other operators' submissions. This comparison supports the range of mark-ups that we have proposed (9% - 16%).
15.	The revised routing factors for voice termination should be amended to reflect just terminating	The cost incurred by voice termination is determined by consideration of both voice and data traffic, in

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	traffic. The impact of this adjustment to reflect terminating calls only has a material impact on the MTR outputs and the relative level of asymmetry.	combination with their corresponding routing factors. As such, the cost per minute determined by weighting using all traffic is a cost-recovering rate and has, therefore, not been amended.
16.	ICASA's arguments for not adjusting the large operator voice traffic forecast are flawed. Recent data shows that voice traffic has been declining for some time and continues to do so, contrary to ICASA's statement that this is a recent trade (<2 years). Finally, the proportion of on-net traffic has been falling consistently for a period of time and there is no evidence to support a levelling out of this trend, as is predicted in ICASA's draft final voice forecast. The voice forecasts for the large operators should thus be updated using the data provided to	The voice traffic forecast has been updated for both large and small operators, based upon the data provided to ICASA by all operators in their previous submissions.

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	ICASA in previous submissions, reflecting the projected decline in voice traffic.	
17.	The data forecast of the small operator significantly underestimates the growth in data traffic on their actual networks. This undermines the entire methodology of the study. Furthermore, the small operators are well above 20% in traffic terms, therefore not meeting ICASA's initial asymmetry threshold.	The Authority does not deem the assertion made as correct. The forecast was derived from data provided by both small and large operators.
18.	ICASA's decision to apply a 25% mark-up to the price of electronic RAN equipment for the small operators is highly questionable for the following reasons:	The Authority included an uplift because it was clear from operators' submissions, and subsequent discussions, that small operators do appear to pay more per unit for access network electronics than large operators.

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	• The fact that one of the smaller MNOs did achieve similar RAN electronics unit capex as the large operators proves that a small MNO can buy at the same unit prices as a large MNO • There is no international precedent for such a mark-up in regulatory mobile LRIC models • ICASA has presented no evidence or analysis to support its assumption, which is even more important given the departure from international best practice • Small operators are hypothetical, as are large ones. ICASA has not defined who they are owned by or which group they are part of • There is nothing efficient about purchasing inefficiencies which are assumed to be perpetual.	Therefore, the inclusion of the uplift is in response to an observed condition within the South African market.

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19.	We are of the view that sales commission is not an activity, whereas the act of paying it and designing the commission scheme are. The cost of paying the commission and designing the commission scheme are in retail opex, whereas the commission itself is in cost of sales. Because cost of sales are NOT activities, they should not be part of the mark-up calculation. We suggest interconnection cost of sales (out-payments to other operators) and commercial cost of sales (commissions to retailers) be taken out of the mark-up calculation to align with Ofcom and other regulators and the rationale of EPMUs.	There are two opposing effects here. First, a possible adjustment to the classification and assumptions regarding causality along the lines suggested by the commenter, which would tend to increase the mark-up. Second, a possible efficiency adjustment which (if we were to attempt it) would tend to reduce the mark-up. The mark-up we have recommended has the advantage that it is based on actual operator data (from the TD models) but the disadvantage that it does not carry out either of these two possible adjustments, which go in opposite directions. It is worth noting that one of the operators did provide the recurring cost (e.g., opex) inputs already fully marked-up for each network element. We have compared the percentage of capex represented by these inputs with the equivalent non-marked-up opex percentages implied by the other operators' submissions. This comparison supports the range of mark-ups that we have proposed (9% - 16%).

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20.	The changes implemented to the data forecasts at the draft final stage discriminate in favour of the large operators, resulting in data traffic in 2020 just over half what it was for the large operator in the draft version of the model. This diverging and discriminatory forecast will be harder for the small operators to achieve, and easy for large operators to achieve. ICASA is urged to assume that data usage per subscriber converges in the future, or grows at the same rate, but not that the small operators will outstrip growth rates of market average or large operators.	The changes implemented to the data forecast at the draft final stage were derived from data provided by both small and large operators.
21.	The change in forecasting of voice traffic is discriminatory and has disadvantaged the small operators. The CAGR for the large operator is 4%, whilst the CAGR for the small operator is	The changes implemented to the voice forecast at the draft final stage were derived from data provided by both small and large operators.

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	10%. Such a forecast is neither reasonable or justifiable based on the historic behaviour of the South African market. We recommend that ICASA realign the forecasts for the large and small operators and at the very least bring the small operator forecast close to the total-market CAGR.	
22.	The Authorities decision to restrict the RAN equipment price mark-up to equipment CAPEX for electronic components is unjustified and results in annualised unit costs significantly below those experienced by small operators. The mark-up should be returned to its initial form which, as noted in our previous submission, resulted in close agreement with our actual costs.	The uplift was derived from operators' submissions, and subsequent discussions. Therefore, the inclusion of the uplift is in response to an observed condition within the South African market.

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23.	A single common cost mark-up of 12% is applied to all operators, however, ICASA notes that the range of common cost percentages from the TD models is 9%-16%. One would expect the small operator to incur a proportionally larger amount of common cost, based upon the fact that a significant proportion of these costs are fixed. Therefore, the common cost mark-up should be set at 9% for the large operator and 16% for the small operator.	The mark-up applied by the Authority is based on actual submitted operator data. However, this change has been implemented in the final model. The common cost mark-up is set at 9% for large operators and 16% for small operators.
24.	The calibration of the draft final mobile model is biased in favour of the large operators. There is close agreement to the number of sites reported by the large operators, however, the calibration of the small operator model is poor and underestimates the number of sites by a significant margin. This situation remains effectively unchanged from the draft version of the model and should be rectified, based upon	Operators have provided additional data submissions regarding the split of traffic based upon ICASA's geoptypes. These additional data submissions have been used to update the traffic forecast, particularly the split of traffic between geotypes and technology generations. The model cannot be reasonably expected to calibrate both small operators' site numbers simultaneously, given the two small hypothetical operators are assumed to

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	the additional data provided to assist with the calibration exercise.	have the same coverage and traffic. Calibration is more readily achieved for the large hypothetical operator, given that the two large operators in the market have a relatively similar number of total sites. However, the Authority does not agree with the position that this is equivalent to bias.
25.	It is recommended that ICASA rebalance the coverage by geotype for the small operator with sub-1GHz spectrum (and by extension the small operator without sub-1GHz spectrum). Our analysis shows that actual coverage in the urban geotype is greater than that of the modelled small operator.	The coverage for the small operator has been adjusted, based upon the additional data provided by operators, in addition to the data in their previous submissions.
26.	The coverage area of the small operator without sub-1GHz spectrum should be reduced in comparison to that for the small operator with sub-1GHz spectrum, particularly in the rural	An important point to note is that these hypothetical operators are not intended to exactly reflect the network structure adopted by the actual operators in the market. It is unreasonable to have two forms of 'small operator' who have differing coverage, and presumably, therefore,

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	geotype. It is not viable for an operator to cover such a large area using 1800MHz spectrum.	different traffic and roaming forecasts based on actual operator data. It is the Authority's view that only the two small operators' differing spectrum allocations may be viewed as inherent, unavoidable sources of differences in the cost of call termination.
27.	Cell radii should not vary by technology and should be restored to the values in the DRAFT model. Reduction in 3G cell radius will increase coverage site requirements by 55%. In fact, the 20% reduction in 3G cell radius has no impact on the dense urban/urban/suburban geotypes, which are capacity-driven.	The Authority is of the view that an uplift to the number of 3G sites is necessary to account for cell breathing, however, the decrease of cell radii by 20% appears to have been excessive. The cell radii have thus been restored to those in the draft version of the model and a 20% mark-up has been introduced for the number of 3G coverage sites. This approach is in line with the comments made in operators' previous submissions regarding cell breathing.
28.	The core transmission network of the large operator is assumed to have a total length of 12,000km. ICASA has been provided with an outline of the core transmission network of a small operator including all links, both existing	The Authority agrees that a small operator could reasonably require a national core transmission network similar to that of the large operators. This change has thus been adopted in the final BU Mobile model.

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	and planned. From this submission it is clear that the core transmission length in the planned backbone is as large as that for the modelled large operator and, as such, the inputs should be equal for the two operators.	
31.	ICASA should be consistent in which countries it uses in its benchmarks. ICASA's raw data includes 2300MHz auctions in India, Latvia, Indonesia and Thailand that are not included. However, there have been also other auctions within the last five years (e.g. Australia, Canada and Nigeria) that could be considered. ICASA should seek to base the value on a wider selection of datapoints.	The Authority deems that there is no unanimously accepted methodology when comparing auction benchmarks. It is, therefore, not surprising that using different methodologies results in significant differences between benchmarks.
32.	The 2300Mhz spectrum of the small operator without sub-1GHz spectrum should be excluded from the model because it is dedicated to support	We have opted to consider it as a mobile band, taking our cue from international trends in this regard. The BU mobile small operator without sub-1GHz spectrum is

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	area-and customer specific Fixed Wireless access broadband solutions and only serves as an overflow for the mobile devices which support the 2300 MHz frequency band in addition to the other bands (inter-radio access technology mobility). Market realities in South Africa mean that all MNOs need to offer an LTE-based fixed wireless broadband proposition in order to compete effectively. All MNOs in SA provide fixed wireless and they reserve spectrum for that purpose. The voice services are then concentrated on the other spectrum bands at the relevant sites. This is a legitimate and efficient way of managing spectrum assets and should be reflected in the model.	modelled on a hypothetical efficient operator scenario and not based on operator-specific business decisions.

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33.	The cell radii of the small operators should be decreased in comparison to those for the large operators as a result of the fact that most of the small MNO's antennas on shared sites have been deployed on the lowest parts of the towers. This would bring the cell radii in line with those in initial submissions.	The Authority does not consider this to be an inherent and enduring disadvantage faced by small operators and it is not clearly reflected in the initial data submissions.
34.	We are in agreement with the views expressed by other operators during the Q&A in relation to the total market demand for voice traffic. Whilst we appreciate the comments made by ICASA in the Q&A, we do not agree that the current declining trend is a short-term phenomenon. Considering that the model correctly reflects a saturated market with a flat subscriber rate for the entire market across the numbers of years modelled, it is our view that the total voice minutes will continue to decline in line with international precedence.	The changes implemented to the voice forecast at the draft final stage were derived from data provided by both small and large operators.

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35.	We consider that there is an inconsistency between the CAGR voice growth of rate of 2% assumed for the large operator (which is understated) and the 11% CAGR as applied to the small operators. These figures should logically result in an increased voice market share for the smaller operators because they are assumed to be growing faster than the larger operator. However, this is at odds with the modelling assumption that market shares in terms of subscribers remain constant across the different operators. We are concerned that these modelling assumptions result in unrealistic future projections. For instance, the modelled increase in sites is due to increases in capacity and coverage. However, we note that the model	The voice forecasts for both large and small operators have been updated from the draft-final version of the model. The new market voice traffic has been determined by consideration of all operators' data request submissions, which have also allowed us to derive a consistent set of market shares and technology splits for voice services. Consequent submissions regarding traffic forecasts and their mapping to the ICASA geotypes have also been considered in deriving the updated traffic forecast.

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	assumes total coverage of the large operator increases at a CAGR of 6% while the Small operators only increase coverage at a CAGR of 3%. This implies that the large increase in site numbers as reflected in the graph above for the small operators is driven primarily by an increase in combined voice and data traffic demand and related capacity sites.	