Telkom

Submission to the Independent Communications Authority of South Africa

DRAFT AMENDMENT TO THE CALL TERMINATION REGULATIONS, 2014

(GG 50325, 22 March 2024)

Submission date: 10 May 2024

1. Pre-amble

1.1 Telkom SA SOC Limited ("Telkom") welcomes the Independent Communications Authority of South Africa's ("Authority") invitation to submit responses to the draft CTR regulations that published in the Government Gazette No. 50325 on 22 March 2024 ("Draft Regulations"). It also commends the Authority for the structured and systematic process that has been followed in arriving at these Draft Regulations. There have been several opportunities for stakeholders to provide inputs into the process and these have added to the transparency of the decisions taken in the Draft Regulations.

1.2 However, Telkom is of the view that, despite this commendable process, the Authority has arrived at a draft decision which will not support competition in the market or benefit South African customers. This is because of flawed reasoning by the Authority on some specific issues. It is also because it has failed to take proper account of some of the points made by Telkom during the consultation process.

1.3 In this response, we provide an explanation of these points in more detail. This response is structured in the following way:

- Section 2 discusses some significant high-level issues where the Authority has erred in arriving at its position in the draft Regulations.
- Section 3 discusses the Fixed Termination Rate ("**FTR**") cost model in more detail.
- Section 4 discusses the Mobile Termination Rates ("**MTR**") cost model in more detail.
- Section 5 discuss the International Termination Rates ("**ITR**").
- Section 6 concludes with some specific recommendations to the Authority.

2. High-level issues

A. Competition in the market

2.1 The Authority references its earlier analysis of competition in the market for call termination on both fixed and mobile networks.[1] The outcome of this analysis was contained in the Findings Document (Government Gazette No. 46107, published on the 28th of March 2022). In this analysis, the Authority determined that there was market failure in the markets for call termination on fixed and on mobile networks. It also proposed a series of measures to address these market failures.

2.2 Telkom agrees with the Authority's primary analysis that these markets are not effectively competitive and warrant some regulatory intervention. However, Telkom's view is that – in addition to this narrow market analysis – the Authority should have undertaken a broader analysis of how call termination rates affect competition in retail markets.

2.3 There are direct links between the wholesale markets for call termination and the broader retail communications markets, not least because the cost of call termination is an input cost into the provision of retail services.

2.4 One of the statutory objectives of the Authority is to promote competition in the market as a whole. This objective is explicitly stated in Section 2(f) of the Electronic Communications Act, No 36 of 2005 ("the ECA"). Unfortunately, as Telkom has stated on numerous occasions, the mobile retail market is not effectively competitive. Rather, it is dominated by the two largest MNOs and this dominance is getting further entrenched over time. The Authority's failure to undertake a broader competition analysis in the context of the update of the Draft Regulations is a missed opportunity to enforce measures that would address this entrenched market dominance and in so doing *"… ensure the provision of a variety of quality electronic services at reasonable prices*" (Section 2m of the ECA).

2.5 One specific outcome of this failure is the Authority's decision to treat mobile and fixed call termination separately for the purposes of setting regulated rates. As the Authority and its advisors have noted, there is a long-term trend of falling volumes in fixed voice calls. For example, Telkom's volume of domestic inbound calls to fixed lines has fallen by approximately 79% over the past 5 years. This steep decline is because customers are substituting to other forms of voice communications, notably mobile circuit switched calls and Over the Top ("OTT") calls on platforms such as WhatsApp, Teams, etc. This is a clear indication that fixed voice calls face competitive constraints from other technologies delivered via mobile. Had the Authority undertaken this analysis, it would have concluded that separate treatment of fixed and mobile networks for the purpose of setting call termination rates is not justified.

B. Mobile versus fixed technologies

2.6 The Authority has adopted pure-LRIC as the basis for setting call termination rates. Embedded in this concept is the use of modern, efficient technology as the basis for calculating costs. One of the primary purposes of this approach is to ensure that the correct economic signals are provided to the

[1] Acacia Economics, "Guide on costing modelling for the determination of mobile and fixed-line wholesale voice call termination rates, Version 5"; 26 January 2024 ("the Acacia Report"); Section 1.

market. It ensures that only businesses with the most efficient technology have an incentive to enter the market to compete.

2.7 This approach is appropriate for a market in which there is the realistic prospect of entry by new players or expansion of existing players. Mobile is one such market. However, it is not the case for fixed. In the context of South Africa, fixed voice is a legacy service, and it is not realistic to consider that new fixed network operators would enter the market for fixed voice services.

2.8 In this situation, there is a much weaker case for applying the most modern technologies when calculating costs. By doing so, the only significant fixed operator in the market – Telkom – is not able to recover its legitimately and efficiently incurred costs.

2.9 The Authority has not considered this issue in any detail. Specifically, it has not investigated the implications of its decision to apply the most efficient modern technology in calculating the cost of a legacy service such as fixed voice call termination. Rather than the pointless objective of creating incentives for efficient entry into the fixed voice call market – which is highly unlikely to happen - this approach is more likely to disincentivize Telkom from future investments.

2.10 In practice, the proposed decision on FTRs is more likely to result in stranding Telkom's assets as volumes decline and regulatory decisions on call termination do not allow the recovery of costs. This feeds into future investment decisions and is likely to result in less investment, rather than more.

C. Removal of asymmetry and the glide path

2.11 In the draft regulations, the Authority has proposed to retain the asymmetry in CTRs but limit it to only players that have been in the market for up to 3 years.[2] This would exclude Telkom from qualifying for the asymmetric MTRs.

2.12 Telkom's view is that the most pro-competitive basis on which to set CTRs is pure-LRIC. Asymmetry is used as a "second-best" measure that is adopted where base rates are set above pure-LRIC. The Authority's approach is therefore consistent with this, at least in principle.

2.13 However, in practice, for the reasons outlined in this submission, the proposed base MTRs are not set at pure-LRIC. For various methodological and computational reasons (explained in more detail below), the cost models calculate a cost of MTRs that is too high and above a level that would apply if the Authority calculated pure-LRIC for MTRs correctly. Given this, Telkom does not agree with the Authority's proposal to set the MTR for Telkom at the base rate rather than the asymmetry rate.

2.14 A related issue is the proposed speed at which the MTR applicable to Telkom changes. The Draft Regulation proposes that the rate drops from its current level of 13c to 4c over a period of two years (a 69% reduction). This compared with the rate reduction that would be applied to the large MNOs which would be reduced from 9c to 4c (a 55% reduction) over the same period.

D. Overall financial impact

2.15 Taken together, the Draft Regulations would hit Telkom financially in three separate ways. The revenue from incoming calls to Telkom mobile and to Telkom fixed would be drastically reduced. The

[2] Acacia Report, Section 1.1.2.3

outpayments to the large MNOs would also decline but at a much lower rate than the revenue accruing to Telkom. The net result of the proposed Draft Regulations is a significant negative financial impact on Telkom – one which is likely to be much more significant than the impact on the large MNOs.

2.16 This impact on Telkom needs to be placed in the overall context of the Authority's objectives of promoting competition, as discussed above. Telkom is the only viable network infrastructure challenger to Vodacom and MTN. The proposed Draft Regulations would financially disadvantage Telkom more than either of the two large operators. It is therefore only likely to reduce the effectiveness of competition rather than increase it.

3. FTR model

A. Volume forecasts

3.1 The Acacia model, which the Authority has used as a basis for determining the FTRs, is based on volume forecasts that appear high and speculative. Actual data for 2017 to 2021 reported by ITU shows a general strong decline in fixed network traffic between 2017 and 2021, with domestic fixed to fixed traffic nearly halving in the space of four years.[3] As we note above, this trend in traffic is consistent with Telkom's experience in recent years.

3.2 We noted in our January submission[4] that the Acacia model made significant upward adjustments to this profile, and also forecast a growth in volumes in future years. We noted that this was inappropriate and unjustified. Acacia appears to have accepted this and have removed both the upward adjustment to ITU volumes and the projection of fixed traffic growth from the updated model.

B. Unit equipment costs

3.3 We noted in our January submission that the Acacia model significantly understated unit equipment costs, both in comparison to Telkom's own capex and unit capacity submissions and those in the EU's 'Eurorate' FTR model, which forms the basis for current FTR regulation in the EU.[5] Acacia appears to have accepted this and has now used Telkom's own capex and unit capacity submissions.

3.4 In addition, we noted that Acacia's model assumed a negative capex cost trend, which was unreasonable given the weakening of the ZAR against international currencies. Acacia has not updated this trend to take into account ZAR depreciation against the Euro.

3.5 Acacia has also corrected an error in the application of the opex cost trend.

C. Other changes

3.6 Acacia has adjusted the volume measure used for network dimensioning for certain types of network equipment. This equipment had a capacity that was measured as the number of "concurrent sessions" it can handle. Previously, Acacia used the total number of calls in the busy hour to dimension this equipment. It has now switched to using a measure of "simultaneous calls" based on calculating the number of calls that occur simultaneously at any given time in the busy hour.

3.7 This interpretation of "concurrent sessions" appears reasonable. However, we would suggest applying a profile to calls within the busy hour, to take into account the fact that calls are not evenly distributed across each minute of the busy hour (as is implied by the current calculation). In reality, the network needs to be dimensioned to handle the maximum number of simultaneous calls in the

[3] Sheet 'ITU'

[4] Letter from Telkom to the Authority, 15 January 2024, "THE REVIEW OF THE 2021 CALL TERMINATION REGULATORY PROCESS"

[5] A copy of the EU FTR model is available at https://digital-strategy.ec.europa.eu/en/library/finalisation-fixed-cost-model-delegated-act-single-eu-wide-fixed-voice-call-termination

busy hour, rather than the average number of simultaneous calls. This effect could also be achieved by applying a markup to the average number of simultaneous calls.

3.8 An error has been corrected in one of the lookups for incoming minutes. This appears correct.

3.9 The market share of the hypothetical efficient operator has been reduced from 90% to 50%. This only has a minor impact on the FTR.

4. MTR model

A. Shared RAN assets

4.1 Over one third of the cost of modelled MTRs relates to assets such as towers which are shared between 2G, 3G and 4G technologies ('shared RAN assets').[6] Newer and more efficient technologies (4G in particular) require fewer additional active RAN units than older technologies to service the increment of call termination, which in turn means they require fewer additional shared RAN assets to host those active units.

4.2 Acacia accepts the importance of ensuring "*that the relative efficiencies of the different technologies are correctly reflected in the model*".[7] This requires that relative efficiencies are reflected in:

- the calculation of technology-specific RAN costs (e.g. 4G macrocell units);
- the calculation of shared RAN costs (e.g. towers); and
- and allocation of shared RAN costs (e.g. towers) between different technologies (2G, 3G and 4G).

4.3 We noted in our January submission that the model's treatment of Routing Factors does not achieve that objective for the allocation of shared RAN costs, since it ignores relative efficiencies, and leads to over-stated allocations for 4G MTRs and under-stated allocations for 2G and 3G MTRs.

4.4 Acacia suggests that changes it has made to the assumed efficiency of technology-specific RAN costs go some way to addressing this concern[8]. We do not agree, since those changes do not address the underlying problem with assumed Routing Factors. We again highlight the fact that this issue can easily be addressed, by adopting the EU model's approach of adjusting the Routing Factors for each technology applied to shared RAN asset categories, so that they reflect the cell sector capacities of each technology[9].

4.5 The inappropriate consequences of the Routing Factors currently adopted can be demonstrated in a number of ways:

- though a common sense check of ratios of shared RAN costs to technology-specific RAN costs;
- through a common sense comparison of 4G macrocells incremental to 4G termination with 4G's share of incremental shared RAN assets; and
- through a formal analysis of multi-product incremental costs.

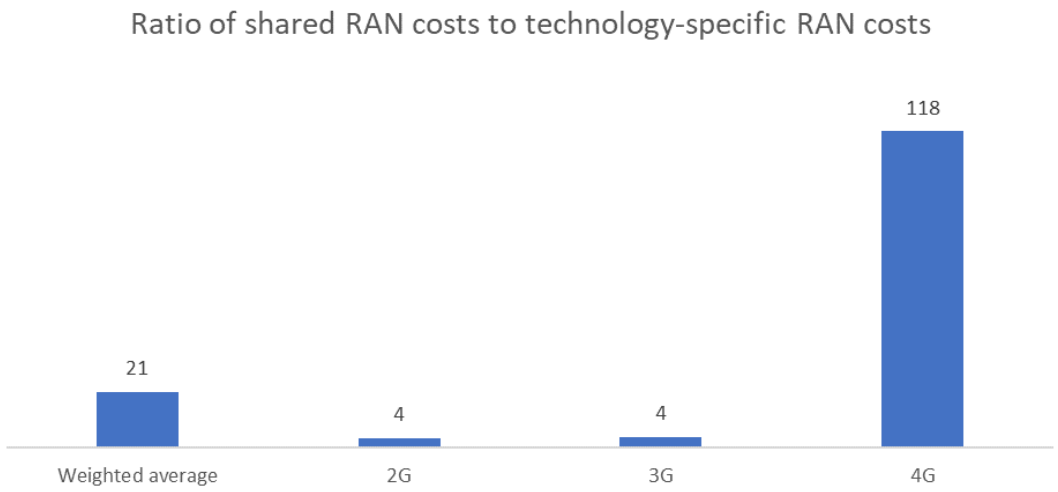
[6] In 2026, 1.45 cents out of 3.95 cents
[7] Paragraph 3.4.7, Acacia report
[8] Paragraph 3.4.7, Acacia report
[9] See for example, rows 81, 102 and 123, sheet '3B MAP ROUTING FACTORS' of the EU model.

B. Check of ratios of shared RAN costs to technology-specific RAN costs

4.6 The table below summarises the RAN components of modelled MTRs for each technology, and overall, for the year 2026:

2026 MTR components ZAR cents	2G	3G	4G	Weighted average
Technology-specific RAN	0.44	0.34	0.01	0.07
Shared RAN	1.60	1.39	1.44	1.45
Other	3.47	2.29	2.32	2.43
Total	5.51	4.02	3.78	3.95

4.7 For each technology, and overall, we have calculated the ratio of shared RAN costs to technology-specific RAN costs, as shown in the chart below:



4.8 It can be seen that on average, the model allocates 21 cents of shared RAN costs for every 1 cent of technology-specific RAN costs. However, the allocation:

- is as low as 4 cents for 2G and 3G; and
- as high as 118 cents for 4G.

4.9 The disparity between the ratios for 2G and 3G, and the ratio for 4G, strongly suggests an over-allocation of shared costs for 4G, and an under-allocation of shared costs for 2G and 3G.

C. Comparison of 4G incremental macrocells with 4G's share of incremental shared RAN assets

4.10 The model calculates that an annual average of 8.5 incremental 4G macrocells are required over the modelled period as a result of 4G termination[10].

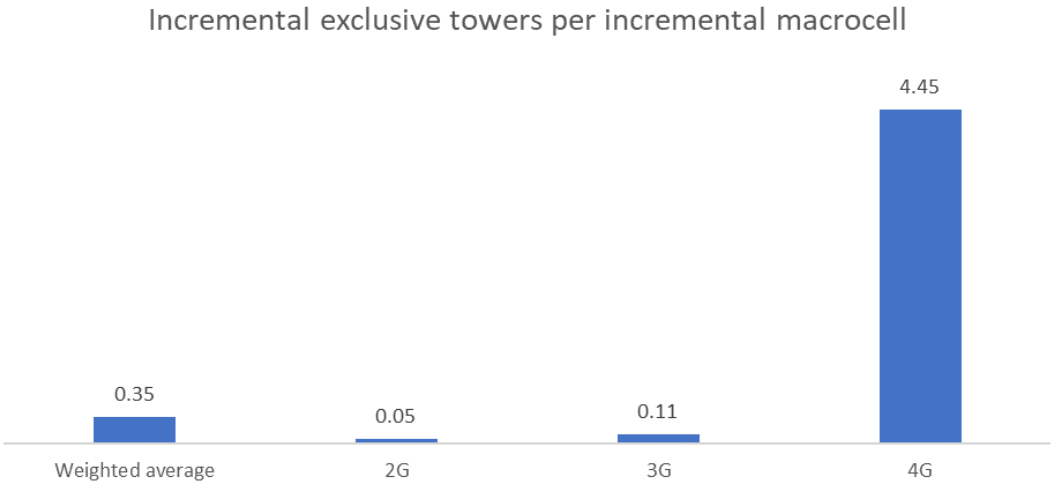
[10] Row 3237, '4a Network -sites, RAN'

4.11 This number can be compared with the number of shared RAN assets effectively allocated to 4G termination, as a result of the Routing Factors in the model.

4.12 For example, in respect of exclusive towers, the model:

- calculates that an annual average of 46 incremental exclusive towers are required over the modelled period as a result of call termination across 2G, 3G and 4G[11];
- allocates 83% of the cost of these towers to 4G termination[12] - equivalent to 38 of the 46 incremental towers; and
- effectively assumes that each incremental 4G macrocell should bear the cost of 38/8.5 = 4.45 incremental exclusive towers.

4.13 The chart below shows the results of the same calculation for each technology[13]:



4.14 It seems self-evident that no reasonable approach to cost allocation can result in the allocation of the cost of more than one incremental tower to support each incremental 4G macrocell. This again demonstrates an over-allocation of shared RAN assets to 4G call termination, combined with an under-allocation of shared RAN assets to 2G and 3G call termination.

4.15 Similar anomalies are in principle applicable to all shared RAN assets: exclusive towers, shared towers, rooftops, in building solutions, microsites, lampposts/billboards, macrocell bases, macrocell spectrum bands, microcell bases, microcell spectrum bands, inbuilding cell bases, and inbuilding cell spectrum bands.

D. Formal analysis of multi-product incremental costs

4.16 A more formal analysis is based on the principles of cost allocation for a multi-product firm.

[11] Rows 3187 to 2189, '4a Network -sites, RAN'
[12] Cost shares based on Routing Factors, unit costs and call volumes set out in 'Cost results'
[13] For simplicity, this analysis is based on undiscounted figures. A similar analysis using discounted figures results in an allocations of incremental exclusive towers to each incremental macrocell of 0.30 weighted average, 0.09 for 2G, 0.25 for 3G, and 5.97 for 4G..

4.17 It is well established that in a firm providing (say) three services, A, B and C, where aggregate revenues (A+B+C) are set equal to aggregate costs (A+B+C), the aggregate revenues of services A+B must be at least equal to the incremental cost of providing services A+B together, in order to avoid cross-subsidy from the third service, B[14].

4.18 In the context of cost allocations intended to reflect cost causality, costs allocated to A+B should be at least equal to the incremental cost of providing A+B together. If allocated costs are below this level, that means that incremental costs which are causally attributable to A+B are being allocated to service C. Less formally, cost allocations to any service or set of services should never fall below the incremental cost of providing that service or set of services.

4.19 As it stands, the model fails that test, in respect of the allocation of the cost of shared RAN assets. Taking exclusive towers as an example, the table below compares the allocation of costs to technologies resulting from current Routing Factors, with the incremental cost of call termination calculated by the model[15], for different sets of services:

Call termination services	Costs allocated £m	Incremental costs £m	Costs allocated as a proportion of incremental costs	Cost causality test
2G + 3G + 4G	224	224	100%	Pass
2G	46	71	65%	Fail
3G	47	167	28%	Fail
4G	130	1	9,682%	Pass
2G + 3G	93	222	42%	Fail
2G + 4G	177	72	244%	Pass
3G + 4G	177	168	105%	Pass

4.20 It can be seen from the above table that the cost causality test is failed for 2G, 3G and 2G+3G: in none of these cases does the cost causality cover the incremental costs associated with those services, indicating that cost allocations are inappropriately low for both 2G and 3G call termination, and as a result, inappropriately high for 4G call termination.

4.21 Again, similar anomalies are in principle applicable to all shared RAN assets.

[14] See for example *Cross-subsidy analysis with more than two services*, Faulhaber, 2002

[15] We have adapted the functionality of the model slightly to allow the calculation of incremental costs for subsets of services, by setting incoming call volumes to zero for technology not included in the incremental cost calculation. We then use the remaining functionality of the model, including the preservation of all other assumptions, to calculate incremental costs.

E. Backhaul

4.22 The model's logic for upgrading backhaul links to higher capacities as traffic grows appears to be flawed and generating an overstatement of costs. For example:

- the model indicates an aggregate Present Value of total leased line costs for the modelled operator serving all volumes, including termination, of ZAR 51.5m[16];
- this is based on the model's assumptions on upgrade strategies across 2Mbps, 30Mbps, 100Mbps and 500Mbps capacities;
- if, however, the upgrade strategy is constrained to disable the option of upgrading to 500Mbps links[17], the present value of leased line costs falls to ZAR 47.5m;
- this means that as it stands, the model predicts that the modelled operator will behave irrationally and upgrade to 500Mbps links in a manner that serves to increase, rather than reduce, its total costs;
- as a result, the model overstates both costs and MTRs.

4.23 The issue would not appear limited only to 500Mbps links, or to leased lines. Other capacities, and other links (e.g. microwave backhaul) also appear to be affected. In our view, the model's logic for upgrading backhaul links needs a review to ensure that it serves the purpose it appears to be aimed at: to use the availability of different capacities to minimise costs.

F. Leased capacity

4.24 The model calculates the incremental requirement for and cost of 500Mbps and 10Gbps leased capacity as a result of call termination. This requirement is driven by the need to provide transmission links between BSCs and RNCs and the core network[18].

4.25 BSCs and RNCs play no role in 4G technology, and the presence of 4G call termination does not result in any incremental cost for these transmission links. Therefore, none of these costs should be allocated to 4G call termination.

4.26 However, the model assumes Routing Factors for 10Gbps leased capacity which allocates its incremental costs to both 3G and 4G termination[19], and as a result the 4G MTR includes costs relating to network components which are not relevant for 4G technology. These Routing Factors should be amended to allocate costs to 2G and 3G services only.

[16] Calculated in line with the approach in the backhaul ED sheets, but basing asset counts on "with incoming" volumes in 4b Network - backhaul

[17] Modelled by increasing the backhaul upgrade threshold at row 461, 2a Network parameters, to a very high level

[18] Rows 58 to 91, 4c Network - BSC, RNC, links

[19] Row 67, 2b Routing factors

G. SBCs

4.27 The model assumes a capacity for SBCs of 2,000 Busy Hour voice Mbps, based on Ofcom's 2021 model[20]. However, the effective capacity of SBCs in Acacia's model is very different from that in Ofcom's model.

4.28 Ofcom's model calculates that in 2026/27 (including call termination) its modelled operator requires 2 SBCs[21], for 17.7m 4G subscribers[22], 6,525m annual incoming 4G voice minutes[23], and 1.57m Busy Hour incoming 4G voice minutes[24] - an effective capacity per 2,000 Mbps SBC of:

- 9m subscribers;
- 3,263m annual incoming minutes; and
- 0.8m Busy Hour incoming minutes.

4.29 In contrast, Acacia's model determines that in 2026 (including call termination) the modelled operator requires 25 SBCs[25], for 25.5m 4G subscribers[26], 8,772m annual incoming 4G voice minutes[27],and 2.78m Busy Hour incoming 4G voice minutes[28] - an effective capacity per 2,000 Mbps SBC of:

- 1m subscribers; and
- 350m annual incoming minutes; and
- 0.1m Busy Hour incoming minutes.

4.30 The inconsistency between the effective capacities in the two models strongly suggests that the Acacia model has misinterpreted the Ofcom capacity units upon which it relies, and has applied incorrect traffic conversion factors to determine the requirement for SBCs.

H. Wholesale billing

4.31 Assumed wholesale billing costs have risen since the December model, and now account for 0.86 cents of 2026 modelled MTR of 3.95 cents. That means that for every ZAR 100 of network costs caused by voice call termination, the model allows for an additional ZAR 28 for the cost of billing those network costs to other operators.

[20] Row 565, 2a Network parameters
[21] Row 1166, Nw-4G, NON CONF 2 - Network
[22] Row 10, Subscribers, NON CONF 1 - Traffic
[23] Row 395, Output, NON CONF 1 - Traffic
[24] Dividing annual volumes by 250 days (row 6, Cost drivers, NON CONF 2 - Network) and applying a Busy Hour percentage of 6.0% (row 24, Cost drivers, NON CONF 2 - Network)
[25] Row 96, 4d Network - core
[26] 33% market share x row 22, 1 Volumes
[27] Rows 255:258, 1 Volumes
[28] Applying the 0.0317% assumption at row 546, 2a Network parameters

4.32 In contrast, we note that the fixed termination model makes no allowance whatsoever for the cost of billing network costs to other operators.

4.33 It is not clear what justification there is for such a high level of administrative costs in the case of mobile termination, when no such costs are allowed for in fixed termination.

5. ITRs

5.1 The inclusion of price regulation for calls originating outside South Africa is not supported. Telkom submits that ITRs fall outside the market review scope, which identified national wholesale voice termination rates as being the main contributor to high national call (off-net) retail rates. Telkom is concerned that including such calls in the price regulation regime prevents local licensees from being able to exercise any bargaining power when negotiating termination rates with international operators.

5.2 Notwithstanding the above, Telkom observes high amounts of attempted international bypass fraud whereby a number of entities attempt to circumvent international termination rates by manipulating the original call line identification number to make internationally originated calls look like local calls, which would attract a lower regulated termination rate. Introducing reciprocal ITRs on international agreements will not resolve this arbitrage problem.

6. Conclusions and recommendations

A. Summary

6.1 In this response, we have outlined our analysis of the Draft Regulations and the outcome of the cost modelling process that has been undertaken by the Authority. It is Telkom's view that the conclusions reached by the Authority at the end of this process are flawed.

6.2 In this response, we have identified specific issues in the FTR and MTR cost models which have either not been addressed at all by the Authority or which have not been adequately addressed. In summary, these are:

- Failure to deal with an appropriate allocation of shared RAN asset costs between 2G, 3G and 4G technologies;
- Flawed logic for upgrading backhaul links to higher capacities as traffic grows.
- Incorrect allocation of transmission costs relating to BSC/RNC links to the core network to 4G;
- Significant understatement of the capacity of SBCs;
- Unreasonably high wholesale billing costs in the MTR model; and
- An inconsistent approach to the treatment of wholesale billing in the FTR model (compared with the MTR model) resulting in the cost of wholesale billing being understated in the FTR model.

6.3 If the Authority were to address these issues and correct the cost models, it would result in significantly lower base MTRs and higher FTRs than proposed in the Draft Regulations.

6.4 Implementation of the CTRs, as proposed in the Draft Regulations, will not enhance competition in the market and will not benefit consumers.

6.5 On the contrary, the Draft Regulations – as they stand - are likely to further entrench the market positions of the two largest MNOs and make it more difficult for Telkom to gain market share and create a more effective competitive constraint.

6.6 Regulating ITRs will remove the commercial flexibility of local operators when negotiating with international operators.

B. Telkom's recommendations

6.7 In view of these problems with the Draft Regulation, Telkom recommends that the Authority undertake the following:

- Reconsider the decision to retain separate rates for FTR and MTRs, despite rapidly converging markets;
- Review the basis on which the FTR cost is calculated and make a more explicit allowance for declining volumes;

- Reconsider the decision to remove the asymmetry from Telkom at this stage;
- Reconsider the MTR and FTR rates following adjustments to the MTR and FTR cost models to address the problems outlined in this response;
- Introduce a longer glide-path in which the transition to the final rates takes place over a period of 3-4 years, rather than the 2 proposed in the Draft Regulations; and
- Avoid regulating ITRs and address the concerns around international fraud bypass activities directly.

END