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SUBMISSION TO ICASA ON THE LICENSING PROCESS FOR INTERNATIONAL MOBILE TELECOMMUNICATIONS SPECTRUM (NOTICE 597 OF 2019)[1]

31 JANUARY 2019

[1] ICASA, Government Gazette No. 4280 (1 November 2019), "Notice on the licensing process for international mobile telecommunications ("IMT") spectrum, inviting comments in respect of the provisioning of mobile broadband wireless OPEN ACCESS SERVICES FOR URBAN AND RURAL AREAS USING THE COMPLIMENTARY bands, IMT700, IMT800, IMT2300, IMT23600 and IMT3500.

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1. INTRODUCTION

1.1. On 1 November 2019, the Independent Communications Authority of South Africa ("ICASA"), published an Information Memorandum ("**IM**"). This followed the Minister of Communications' ("Minister") "*Policy On High Demand Spectrum And Policy Direction On The Licensing Of A Wireless Open Access Network*" issued in the Government Gazette on 26 July 2019[2] ("**the Policy Directive**"). As ICASA states, the IM is "… *aimed at outlining the Authority's intentions with regard to the licensing process for International Mobile Telecommunications (IMT) spectrum pursuant to consideration of the…*"[3] Policy Directive.

1.2. Following the release of the Policy Directive, the Competition Commission ("**Commission**") made a submission to ICASA[4] with respect to how ICASA might bring effect to the Policy Directive in particular given the Commission's prospective findings from the Data Services Market Inquiry ("DSMI"). The Commission has since released its final report for the DSMI on 2 December 2019 which also included recommendations on spectrum[5]. Those submissions to ICASA as well as the final DSMI report recommendations in respect of spectrum licensing should be considered as forming part of the Commission's submission in respect of the IM, but are not repeated in this submission for the sake of brevity.

1.3. The Commission has reviewed the IM and its views are presented in this submission (as requested by the IM). Our views are presented as follows:

1.3.1. Firstly, we present high level views on the objectives of the IM and how competing objectives should be treated or prioritised in the current market context. We submit that affordability is a key objective and the spectrum assignment process can drive affordability though increasing levels of competition and decreasing costs.

1.3.2. Secondly, we present our submissions on specific aspects of the IM such as the design of the lots and the various obligations on spectrum licensees.

[2] Government Gazette Notice No. 42597, 26 July 2019
[3] ICASA IM, Government Gazette Notice No. 42820, para. 1
[4] Submission to ICASA, 20 September 2019
[5] Data Services Market Inquiry Final Report, section 6.4 and 9.3

2. HIGH-LEVEL VIEWS ON THE BROAD OBJECTIVES OF THE IM

2.1. Section 3 of the IM lists the objectives of licensing spectrum. The primary objective or "*main aim*"[6] for the licensing of spectrum is stated as being "*to provide broadband access to all citizens by 2020*"[7] and there are a number of sub-objectives in paragraph 3.1.1 to 3.1.8. These sub-objectives include a broad list of aspects such as affordability (price and reducing the cost to communicate are mentioned), universal service and access, empowerment of HDGs, quality and variety of services, the WOAN, promoting investment and encouraging infrastructure sharing. Naturally some of the sub-objectives could work against each other or against the stated primary objective. For instance, prioritising universal coverage or quality aspects (such as speed) will have implications for costs and therefore price and affordability, and thus targeting one objective exclusively may only be at the expense of the other.

2.2. The specific objectives of the assignment of spectrum licences, and what objectives are given greater focus given the competing nature of many of the objective, should take into account not just the policy objectives but also the particular market context in which the assignment of spectrum will take place. An understanding of the market context informs the focus of the exercise. The Commission submits that based on the findings of the DSMI report that prices are too high, affordability must be a key focus of the approach to licensing spectrum.

2.3. In terms of policy, affordability is of course a key focus. The IM mentions South Africa's Broadband Policy, South Africa Connect[8] ("SA Connect") in paragraph 2.2 and indeed the purpose of SA Connect refers to strategies for "*universal, affordable broadband access*"[9] (emphasis added) and the first objective of SA Connect is to provide "*affordable broadband access nationally*"[10] (emphasis added). The document also refers to a "*primary policy objective of affordable access for all.*"[11]. Thus from a policy perspective affordability must be a key consideration[12].

[6] ICASA IM, Government Gazette Notice No. 42820, para. 3.1
[7] ICASA IM, Government Gazette Notice No. 42820, para. 3.1
[8] South Africa Connect: "Creating opportunities, ensuring inclusion: South Africa's Broadband Policy", 20 November 2013, in Government Gazette number 37119, page 4.
[9] SA Connect, p. 12
[10] SA Connect, p. 3, 13
[11] SA Connect, p. 3, 15
[12] The focus of SA Connect on affordability appears in contract to the stated "main aim" of the IM which is "to provide broadband access to all citizens by 2020" (para. 3.1) which seems to focus only on access.

2.4. Notwithstanding the policy focus on affordability, even if one considers only *access* to broadband services, the Commission submits that one must consider *true* access (rather than the mere availability or coverage of such services) which is certainly driven by affordability i.e. pricing. As noted in the Commission's DSMI report, just 56.9% (39.6% in rural areas) of households in the country use mobile phones to access the internet[13]. ICASA itself reports that smartphone penetration in the country increased from 43.5% in 2016 to 81.7% in 2018[14], although of course this is well below the operators' coverage figures of almost 100%. Thus a demand gap exists – a large portion of citizens who have *notional* access due to their being within the mobile networks' coverage area but no *true* access due to, quite simply, devices and data services not being affordable. Put plainly, increasing minimum speeds for all users, or increasing coverage, is simply not going to make data services any more affordable (it may do the opposite) and thus there will be no impact on true access. Furthermore, it is commonly known that pursuing 100% coverage in telecommunications can raise costs exponentially and, therefore, prices too.

2.5. Therefore the Commission supports a greater degree of focus on affordability in the assignment of spectrum. The spectrum assignment process can contribute to affordability in three ways:

2.5.1. Firstly, spectrum assignment can increase competition and therefore bring down prices. As noted in the Commission's DSMI report and ICASA's discussion document for its broadband market inquiry, not only are mobile markets not competitive, but spectrum assignments can have a significant impact on competition in mobile markets, and therefore on prices and affordability. The analysis of the Commission in the DSMI report showed that the primary driver of higher prices may not be a lack of spectrum but rather a lack of competition.

2.5.2. Despite claiming a lack of sufficient spectrum, Vodacom, and to some extent MTN, have consistently recorded revenues well in excess of costs, which suggests that these firms are not constrained by competitors[15]. Evidence from

[13] Competition Commission, Data Services Market Inquiry Final Report, 2 December 2019, para. 66.2
[14] Competition Commission, Data Services Market Inquiry Final Report, 2 December 2019, para. 66.2
[15] See Section 4 of the DSMI report (Competition Commission, Data Services Market Inquiry Final Report, 2 December 2019)

Vodacom on the relatively limited impact of spectrum constraints on costs thus far further emphasises the importance of competition to bring down prices. Thus the Commission recommended in the DSMI report that the spectrum assignment process explicitly take account of competition concerns in the market through asymmetric assignments that do not favour the players with market power.

2.5.3. Secondly, assigning spectrum also increases capacity which drives lower prices. Greater amounts of spectrum allow operators to transmit higher volumes of data, often with limited changes in equipment. This increased capacity means that 'per unit' costs fall and thus firms are able to reduce prices while increasing volumes. Thus assigning spectrum to players by itself contributes to lower prices and greater affordability. It also suggests that spectrum should be assigned to a number of firms to ensure that cost benefits are felt broadly across the market.

2.5.4. Thirdly, assigning spectrum provides an opportunity to enforce pro-competitive and pro-poor obligations on licensees. Given the demand for spectrum, there is room to attach conditions and obligations to deal directly with prices or poorer consumers at least.

2.6. Whilst the DSMI expressed a need to release the high demand spectrum, essentially the digital dividend bands, as soon as possible to reduce costs and expand capacity, the Commission does caution against rushing to release additional 5G spectrum in a piecemeal manner without due consideration as to how that market may evolve. The DSMI report recognised that actions now in respect of 5G spectrum are likely to influence the market structure of the future, much like the previous evolutions of mobile technology. The Commission also understands that other spectrum bands for 5G may be made available in future. In this context, it is likely to be prudent to first assess the full range of spectrum to be made available and the implications of licensing design across all those spectrum bands for future 5G competition, infrastructure sharing and new entry (even of currently unlicensed firms). Indeed, the Policy Directive itself called for a study of 5G spectrum prior to its release. Such a study should be concluded with speed in order not to result in excessive delays.

3. SUBMISSIONS ON SPECIFIC ASPECTS OF THE IM

3.1. Our review of the IM has revealed a number of areas where issues of competition and affordability can be better targeted as well as aspects that are unclear or may result in unintended consequences. This fits into the following areas which are each discussed below:

3.1.1. The design of the lots and spectrum caps
3.1.2. The speed and coverage obligations for industry
3.1.3. The open access obligations for industry
3.1.4. The application of obligations to frequency bands
3.1.5. Social obligations
3.1.6. Reserve prices
3.1.7. WOAN obligations
3.1.8. WOAN offtake obligations for industry
3.1.9. Open access obligations on licensees
3.1.10. Empowerment obligations

Design of lots and spectrum caps

3.2. The design of lots is key to the outcomes of the auction process. As described in the IM, ICASA is proposing to assign the bands identified in the Policy Directive in combined lots whereby certain frequencies from both the 700/800Mhz and 2600Mhz bands are included. These lots (B, C, D and in some cases E) and the spectrum set aside for the WOAN thus include both higher- and lower-frequencies and appear to be structured such that there is little differentiation between them. This approach is not taken for the additional frequencies - the 2300Mhz and 3500Mhz bands – where there are lots for each band (e.g. four lots for 2300Mhz and 13 lots for 3500Mhz).

3.3. The Commission is of the view that the lot design should incentivise competitive bidding from all operators, including the smaller new players and even potential entrants, in support of more competitive market outcomes. In the context of the current market structure, the Commission has a concern that current design may not achieve that for the following reasons:

3.3.1. These lots appear to be designed to be suited to the larger operators with national networks, to ensure a balanced award between those operators and to easily impose obligations upon them. The combination of low-frequency

(coverage) spectrum with higher-frequency spectrum is most suited to an operator with a large footprint beyond the urban areas as well as voice services in addition to data services.

3.3.2. A potential implication of this design is that it could limit competition for the lots B,C and D as only Vodacom, MTN and Telkom may be realistic bidders for the combined lots given the size of the lots and the reserve prices. Smaller players like Rain and Liquid Telecom are unlikely to see these lots as attractive to them and are also unlikely to outbid one of the larger players. The same is likely to apply to Cell C whose current recapitalisation programme may prevent them bidding for the larger combined lots. Furthermore, as a likely spectrum cap (discussed below) would prevent any of these operators from securing more than one lot, each of the three may be assured to win one of the lots at the reserve price. This will eliminate competitive bidding which the auction design is trying to achieve.

3.3.3. A further potential implication is that this outcome may also not promote competition in the market and could lock in incumbency advantage. Whilst the historical spectrum allocation has promoted the entry of Rain and Liquid Telecom, the design of lots to fit the needs of the incumbent MNOs may prevent these smaller entrants from pursuing strategies around national coverage and consign them to focus on the higher frequencies and data services in more urban areas. This may limit their competitive constraint on the larger firms, due to their coverage limits and limitations to data services only. The full national service of the larger operators would remain ‘must-haves’ for consumers. With Cell C and the WOAN’s more limited assignments of spectrum, the three winners would be more competitive players going forward, possibly pushing the market to an effective three-firm structure.

3.3.4. A final observation is that while the lots are similar, the existing spectrum holdings of the operators are not. The differences in operators’ existing spectrum holdings means that the lots may suit one operator better than another. As different MNOs and frequency holders have different existing spectrum licences, the demand for higher- and lower-frequency bands will differ. For instance, Telkom (which has noted the disadvantages of a lack of sub-1Ghz spectrum), may prioritise low-frequency (coverage) spectrum over

other bands. However other MNOs may potentially prioritise higher-frequency (capacity) spectrum where they lack spectrum relative to Telkom. Currently, bidders would not be able to target only lower- or higher-frequency bands as these are combined in lots B to E (depending on the specific Option).

3.4. As such, the current options presented in the IM may not be the most efficient structure for the lots and may not result in optimal outcomes for competition, either for the lots or in the market thereafter. This is especially the case if the additional 5G spectrum does not form part of this licensing process. Therefore, the Commission recommends that ICASA, and any advisors, give further consideration to how the lots may be designed to facilitate more competition for the lots, including from smaller players and new entrants, given the South African market context. By way of illustration, consideration could be given to an approach whereby the lots are broken up into smaller units, splitting the higher frequencies from the lower frequencies to create smaller lots specific to each frequency band..

3.4.1. This may be more efficient as firms can target what is most needed and thus the lots would likely be more attractive. It may also make the auction itself more competitive as it may draw smaller players into the auction and allow them the opportunity to secure a smaller assignment of low-frequency spectrum which they can use in the context of other arrangements such as roaming or infrastructure sharing arrangements. Indeed, having separate lots within each frequency band was the approach of the German auction referenced by the IM where each frequency band had a number of lots, some specific and some generic. Thus outside of what is assigned to the WOAN, the various 700/800Mhz frequency bands could be treated as separate generic lots, and the various bands under the 2600Mhz range could also be treated as generic lots.

3.4.2. Alternative designs may still be able to accommodate other design considerations such as balancing across larger operators and the imposition of conditions.

3.4.2.1. Balancing of spectrum assignments across the larger operators may be achieved through spectrum caps (discussed below).

3.4.2.2. Obligations may be imposed on the low frequency bands only given their greater relevance to rural areas, or on those firms that purchase spectrum above a minimum specified amount. Other options may also include obligations based on the total amount of spectrum held after the auction or the two dominant operators which have national coverage in any event. Either way, if the smaller new entrants are to be encouraged into bidding for some of these lots, then they should not be discouraged by onerous obligations. We discuss this in more detail in the next section too.

3.5. A further consideration in the lot design is in respect of which spectrum bands are assigned between the WOAN and the other operators. The delay in digital migration means that not all spectrum to be licensed will necessarily be available immediately upon licensing. Whilst it is important to fast-track the digital migration process, this may remain a reality of the licensing process. If the WOAN licensing process is likely to take longer than the spectrum assignment process for other bidders, then it may be appropriate to assign to the WOAN spectrum that may be delayed due to the digital migration process.

3.6. The IM provides for the use of spectrum caps and asks for "*representations on the factors and considerations that can inform the Authority's formulation of radio frequency spectrum caps*"[16]. The Commission is of the view that spectrum caps are a crucial aspect of the design of the auction process given the South African market context. The key factors that inform the selection of spectrum caps are as follows:

3.6.1. Spectrum has a direct impact on competition. Larger volumes of spectrum increase capacity in order to pursue market share and reduce per unit costs making a firm more competitive in pursuing that market share. As described above, one of the key concerns with spectrum assignment is the impact on competition, and in fact the reason for using spectrum caps themselves is to prevent negative consequences for competition.

3.6.2. Spectrum assignments without caps can entrench dominance and allow anti-competitive behaviour. The primary risk with spectrum in terms of competition is that one operator holds a disproportionately large assignment of spectrum.

[16] ICASA IM, Government Gazette Notice No. 42820, para. 5.5

This is discussed in Appendix F of the provisional DSMI report and in the discussion document for ICASA's mobile broadband inquiry. The concentration of spectrum on one player may have a range of negative consequences for competition. Such an assignment of spectrum may entrench a dominant position as other firms face higher costs and are unable to challenge the dominant player and therefore unable to constrain its pricing. Where a firm is already dominant, disproportionate assignments of spectrum to the dominant player may reinforce its dominant position.

3.6.3. The existing asymmetry in spectrum holdings in South Africa has already seen some positive green shoots of greater future competition that need to be nurtured if we are to ultimately achieve a competitive market.

3.6.3.1. The spectrum-constraints of MTN and Vodacom have driven them to enter into roaming deals with Rain and Liquid Telecom. These arrangements allow for the larger operators to increase their capacity at a lower cost than building more sites and infrastructure. These arrangements also have pro-competitive benefits in that they allow for these players to gain a foothold in the market and invest in infrastructure. This is recognised by the discussion document for ICASA's broadband inquiry which states that (in respect of the Rain-Vodacom arrangement) "*(t)he arrangement has also facilitated the expansion of Rain as a wholesale and retail competitor in mobile broadband, which is deemed to be pro-competitive*"[17]. What this means is that constraints on the largest players will also have some competition benefits. Well-resourced and high-profit players such as MTN and Vodacom have the means to invest in infrastructure or roaming deals to increase capacity. There is also a risk that such deals are no longer needed or beneficial to the larger operators if they win significant amounts of spectrum, and the broader impact of this must be considered.

3.6.3.2. As noted in the DSMI final report, both Vodacom and MTN point to the higher spectrum holdings of Telkom Mobile as providing it with some advantages in seeking to compete with them, as opposed to Cell C

[17] ICASA, Broadband market inquiry discussion document, para. 93

which lacks any such asymmetry. Whilst Telkom Mobile is not an effective constraint on these two, it has been in a better position to offer larger data bundles at lower prices relative to Cell C.

3.7. A key principle of spectrum assignment therefore is that assignments must be asymmetric insofar as larger dominant firms should have less spectrum per subscriber whereas smaller firms should have more spectrum per subscriber. This allows smaller firms to aggressively pursue market share by pricing lower to attract more customers and better utilise capacity. Thus asymmetric assignments of spectrum promote the competitiveness of smaller players and therefore promote more competitive markets which ultimately benefit consumers. This is also discussed in more detail in Section 6.3 of the DSMI report.

3.8. In determining a suitable cap with this principle in mind, one should consider the current spectrum assignment across the various operators as well as the amount of spectrum to be licensed.

3.8.1. The following table summarises the spectrum assignments across different frequencies and across licensees in South Africa. It shows there is a total of 584Mhz currently assigned[18]. We have presented shares for all spectrum and for sub-3Ghz spectrum as the 3500Mhz and 3600 to 38000Mhz ranges were not utilised for consumer data services until recently (Rain has released its 5G network in the 3600Mhz to 3600Mhz bands).

3.8.2. The IM provides for as much as 446Mhz to be assigned in addition to the existing assignment in the table below (giving a total of 1,030Mhz), although some will be set aside for the WOAN – it appears from the IM that at least 80Mhz will be set aside for the WOAN.

[18] The IM refers to 566Mhz (para. 2.1)

Table 1: Spectrum holdings and shares by band and licensee

Licensee	900Mhz (paired)	1800Mhz (paired)	1800Mhz (unpaired)	2100Mhz (paired)	2100Mhz (unpaired)	2300Mhz (unpaired)	3500Mhz (unpaired)	3600 to 3800 Mhz (unpaired)	Total (Mhz)	Share <3000 Mhz	Share all
Telkom		24		30		60	28		142	27%	24%
MTN	22	24		30	10				86	20%	15%
Vodacom	22	24		30	5				81	19%	14%
Cell C	22	24		30					76	18%	13%
Liquid Telecom		24					56		80	6%	14%
WBS/Rain		24	10					80	114	8%	20%
Transnet SOC			5						5	1%	1%
Total	**66**	**144**	**15**	**120**	**15**	**60**	**84**	**80**	**584**	**100%**	**100%**

Source: Drawn from ICASA Discussion document for broadband inquiry

3.9. The Commission is of the view that the spectrum cap should be set such that sufficient spectrum is available to smaller players in the current licensing process. This is because the two largest operators are far better resourced than any of the competitors, and therefore may be in a position to secure all the spectrum that they are limited to. This could also be done strategically to limit their competitors. Given the current spectrum holdings and amount to be assigned, there is a risk that even a seemingly low cap on total spectrum holdings may undermine the principle around asymmetry and allow the two largest operators to capture all or a significant portion of the additional spectrum.

3.9.1. For instance, if the auction set a spectrum cap on total spectrum holdings at around 25%, far lower than the cap of 37% used by OFT for a four-firm market, then this would not prevent Vodacom and MTN in securing almost all of the new spectrum in the IM given the current spectrum holdings and the amount to be licensed. Such a cap would allow both these operators to secure around 176MHz[19], or roughly 94% of spectrum available to operators other than the WOAN (assuming 80Mhz is set aside for the WOAN). In this scenario, Telkom's share of spectrum holdings would move from 24% to 15.5% under this

[19] Vodacom could secure an additional 176Mhz while MTN could secure an additional 172Mhz.

scenario[20], Cell C would reduce to around 7.4% and Liquid and Rain to 11.1% and 7.1% respectively.

3.9.2. If the additional 5G spectrum does not form part of this licensing round, then a cap of even 22%[21] of total licensed spectrum would still enable the two largest operators to secure around 95% of the spectrum on offer (assuming the WOAN is licensed 80MHz).

3.10. In the South African context, a cap placed on the new spectrum assignment only is likely to be more effective in securing the kind of asymmetric assignment that would be pro-competitive and enable the smaller challenger networks, including RAIN and Liquid Telecom, to secure some of the new spectrum on offer.

3.11. A further consideration in spectrum caps is whether ICASA would want to protect against strategic behaviour around critical spectrum bands such as the lower-frequency bands which are best suited for coverage. Another option is to place a further cap on overall spectrum holdings for the lower frequencies to ensure that no single operator could win all lower-frequency bands (outside of the bands assigned to the WOAN).

3.12. Finally, the Commission is in agreement with the IM that some of the frequency bands can be auctioned on a regional basis rather than a national basis. As the DSMI report identified, some of the scarce national spectrum is not being utilised in all regions due to either roaming agreements being in place, or new entrants not pursuing a national coverage strategy. A regional award also permits ICASA to overcome some of the complications with alternative solutions to make use of this spectrum, such as dynamic spectrum sharing. Consideration should be given to what might be the regional basis.

3.12.1. For instance, a provincial assignment is unlikely to make a difference given that each province has desirable urban areas which all operators will wish to target, including the new entrants.

[20] This is calculated under the assumption that Telkom wins the remaining 6% (18Mhz) of the additional spectrum not won by Vodacom and MTN under a 25% cap on total spectrum.
[21] The spectrum on offer would be 250MHz (assuming 80MHz for the WOAN) and a 22% cap would then constitute roughly 200MHz, allowing each of the operators so secure roughly 115MHz each.

3.12.2. One alternative may be to split urban and rural municipalities, such that the spectrum may be assigned to community or other initiatives in rural areas whilst allowing the new commercial operators to pursue an urban strategy.

Speed and coverage obligations for licensees

3.13. Speed and coverage are important measures to consider for any mobile services industry. Regulators and customers of course prefer better coverage and speed figures to worse ones. However, there is a clear trade-off between speed and coverage obligations on one hand, and affordability on the other. Investing in coverage is costly, and more costly the closer one gets to 100% coverage as population densities decrease and costs on a 'per unit' basis increase. It is widely recognised that costs can increase exponentially as one approaches 100% coverage. Similarly, increasing speeds requires infrastructure and investment, or alternatively more spectrum (if the investment and infrastructure is already in place). Thus coverage and speed targets, if too onerous, may increase costs and reduce scope for price reductions that should naturally flow from the assignment of additional spectrum.

3.14. The IM identifies a number of obligations for licensees related to speed and coverage.

3.14.1. Firstly, it requires that all licensees provide data services to 100% of the population with an average uplink speed of 15Mbps and average downlink of 30mbps, all by 2025. This appears to be based on references to the best performing 4G countries in the OpenSignal report referenced by the IM.

3.14.2. Secondly, drawing on the example of Germany, it requires holders of lots B, C and D to roll out to 97% of the population in identified underserviced areas before rolling out in urban areas. It appears that licensee will have three years after the 700Mhz and 800Mhz becomes available to meet this obligation.

3.15. The Commission is concerned that the IM as currently formed may create costly obligations, especially in relation to coverage by smaller operators, that will result in either smaller firms not bidding for spectrum or having to drive up prices in order to cover the costs involved therefore reducing access due to worsening affordability.

3.15.1. The IM references the approach of the German auction. While we recognise the benefits of the approach, it must be noted that the German operators were only required to provide coverage to 90% of the population in the selected villages and districts[22] at each stage, which is significantly less than 97% given how costs escalate as one approaches universal coverage. Importantly there was no requirement for the operators to roll out to 100% coverage. Operators were also given a period of six years to fulfil this obligation, rather than three.

3.15.2. Importantly, the German auction also allowed the operators to cooperate in providing infrastructure in outlying areas. Indeed it appears that the German operators only met the coverage obligations in combination and not individually[23]. The IM appears to require *all* spectrum licensees (all winners of spectrum in this auction) to cover 100% of the population at the required speeds. There is no need for all operators to adhere to this requirement in order to ensure the required access for consumers.

3.15.3. The requirement for 100% coverage by 2025 appears unprecedented even on the evidence referred by ICASA itself. The OpenSignal resource, as referenced by the IM, shows of all the countries, the one with highest LTE coverage still has 97.5% LTE availability (although a stricter measure than pure coverage), less than 100%. We are aware of only a few specific countries with 100% LTE coverage, but none with the rural population and land mass of South Africa. In fact, none of the three German operators that won 800Mhz spectrum in the 2010 auction referenced by the IM have covered more than 98% of the population – nine years after the original award of spectrum. In South Africa, despite national coverage obligations, the largest operators are yet to cover 100% of the population. While MTN's LTE coverage now exceeds 95%[24], 3G coverage is yet to extend to 100% of the population – Vodacom's 3G coverage was 99.5% in 2019[25].

[22] Not all towns and districts were covered, but rather those selected on the basis of low coverage including fixed line broadband.
[23] For instance, Deutsche Telkom's Annual Report (2012), p 67 states: "*Together with the other two 800 MHz network operators, we have met the LTE roll-out obligations in Germany in all of the 16 federal states. The gaps have been closed – even rural regions now have access to broadband internet*." (emphasis added)
[24] DSMI Final Report, para. 66.1
[25] Vodacom 2019 Integrated report. P.2. Available at: http://vodacom-reports.co.za/integrated-reports/ir-2019/documents/downloads/Integrated-report-2019.pdf

3.15.4. The speed requirement of 30mbps downlink and 15mbps uplink appears to be drawn from the OpenSignal data referred to by the IM. SA Connect refers to a 5mbps target for 90% of the population by 2020 and a 10mbps target for all of the population by 2030. If minimum speeds are included in the IM, the targets specified in SA Connect may be more justifiable given the potential costs of the 30mbps speed identified by the IM. It is important to note that the speeds from OpenSignal referenced by the IM are for LTE only and South Africa's speed in the report (20.4mbps) exceeds the average speed of 16.9mbps. These speeds also cannot be achieved by consumers using 3G (or 2G) devices which are more common in South Africa. Thus to the extent that such targets are set this can only be applicable to LTE.

3.16. Aside from the largely unprecedented nature of these obligations, in the South African context they may have substantial unintended consequences for competition, reducing it from the existing low levels.

3.16.1. The obligation for roll-out to underserviced areas before urban areas will unduly favour MTN and Vodacom over the smaller players. Vodacom and MTN are more able to quickly cover the underserviced areas due to national infrastructure already being in place, and which may in some cases already be equipped to use the new spectrum immediately. In contrast, challenger networks would have to invest in their networks if they are to radiate their own spectrum in underserviced areas (as opposed to roam on the other two national networks). This would mean that MTN and Vodacom could attain an advantage in being allowed to roll out the new spectrum in urban areas before the challenger networks, which would simply reduce competition from the low levels that already exist.

3.16.2. This may have implications for competition in the auction itself, as smaller players may be disincentivised from bidding for spectrum due to the onerous cost implications of the coverage obligations. Even if the obligation does not require that they radiate their own spectrum and can achieve the target through roaming, this may still put the networks at a disadvantage given that roaming costs are generally higher than the own network costs. Furthermore, it will also impact on roaming negotiations because the existence of this obligation will

enhance the bargaining position of the roaming provider, making roaming agreements even more one-sided.

3.17. The Commission therefore recommends that ICASA re-examine these obligations on coverage and speed in light of the South African market context and the need to balance coverage against affordability and competition. By way of illustration:

3.17.1. These obligations could be shared amongst the operators securing low frequency spectrum, much like the German auction.

3.17.2. Obligations may be restricted to those networks with existing national coverage, Vodacom and MTN, and which have a dominant position in the mobile market in any event. Relaxing this requirement for smaller players and challenger networks may also allow these firms to move more quickly in urban areas which may be pro-competitive and provide strong commercial incentives for Vodacom and MTN to achieve their rural rollout quicker.

Open access obligations for industry

3.18. The IM also anticipates that any winner of a lot will have to provide "*open access*"[26] to a minimum of three MVNOs with 51% ownership held by people from Historically Disadvantaged Groups. Whilst the Commission recognises the support for transformation that this is intended to provide, it has a concern that this requirement may negatively affect the WOAN which will likely be dependent on an MVNO-based business model. Indeed, the rationale for the WOAN was to provide more support for service-based competition from MVNOs, and to support overall transformation of the industry.

3.19. As outlined in the DSMI report, the Commission is of the view that instead of committing to a number of MVNOs, MNOs receiving spectrum should rather commit to a standard MVNO agreement where the maximum wholesale rate per GB is at a discount to the average retail rate of the MNOs. The Commission is also of the view that this should apply to all operators that are licensed spectrum, including the spectrum lots in the 2300ZMHz and plus 3500MHz range.

[26] ICASA IM, Government Gazette Notice No. 42820, para. 6.3.1

Social obligations

3.20. In paragraph 6.5.2 of the IM, ICASA has invited submissions on social obligations that could be imposed on licensees, outside of rural coverage and speeds. Social obligations should be imposed to achieve affordability and actual, real access, particularly for the poorest citizens of South Africa. As submitted to ICASA previously and detailed in the DSMI report, the Commission submits that there are a number of potential options here. In line with the Commission's DSMI report, a pro-poor focus is necessary given the challenges faced by consumers in South Africa (as dealt with extensively in our report). We make the following suggestions for social obligations on licensees:

3.20.1. Firstly, we suggest that that obligations to provide a small amount of free data and/or access to zero-rated content must be placed on licensees, or at least licensee of a certain size. Free data may involve a small allocation per subscriber per day. Commitments to zero-rate content on certain types of sites such as government, education institutions including schools and universities, health sites and educational sites may be appropriate and useful.

3.20.2. Secondly, focusing more on affordability, operators could be forced to commit to certain price reductions on specific products on the award of spectrum. This can be placed on the large or dominant operators alone as well.

3.20.3. Thirdly, conditions for transparency can be enforced. Due to the difficulty in understanding the true cost of data for consumers, and the tendency to price higher to less sophisticated customer in complex telecommunications markets, the DSMI report recommended that customer be informed of the true effective price of data used each month. Such transparency will reinforce competition and enable users to switch to lower priced options.

Reserve prices

3.21. The IM also requests submissions on the appropriate reserve prices for different lots. The Commission submits that there is no benefit to affordability and therefore access in setting reserve prices too high, which may unduly raise costs for operators and

potentially exclude small operators from bidding successfully for lots. Reserve prices should rather play the role of eliminating frivolous bids.

WOAN Obligations

3.22. The IM sets out conditions to be applied to the WOAN as well as obligation in respect of the WOAN for those operators awarded lots B, C, D and E[27].

3.22.1. The Commission is in agreement with the proposed conditions to be imposed on the WOAN itself, including mandatory wholesale services on a non-discriminatory, transparent and cost-orientated basis.

3.22.2. The Commission is also in agreement that mandatory offers of facilities leasing and national roaming should be extended to the WOAN by other operators if it is to succeed in getting established.

3.22.3. However, if ICASA is to arbitrate on disputes regarding the commercial negotiations required, especially over costs, then an additional obligation for accounting separation of the wholesale divisions of the commercial operators is likely to be required. Thus ICASA may consider enforcing such obligations on licensees that have obligations to provide such access and roaming services to the WOAN.

WOAN offtake obligations for industry

3.23. Paragraph 6.3.5 of the IM specifies that licensees that are awarded spectrum in the auction must collectively procure 30% of the WOAN's national capacity for a period of 5 years from when the WOAN becomes operational. These requirements are aimed at ensuring the competitiveness and sustainability of the WOAN and thus are key obligations. However, the precise formulation of these obligations will influence the decision that potential bidders make and the value that they place on spectrum lots and thus the following may be considered further by ICASA.

[27] ICASA IM, Government Gazette Notice No. 42820, section 6.4 and sub-paragraphs

3.23.1. Firstly, the IM states that capacity to be procured would be proportionate to the high demand spectrum assigned to each licensee. As per the Commission's previous submission to ICASA[28], there are potential unintended negative consequences for enforcing this obligation on the basis of the share of spectrum awarded in this process. If a smaller or new player wins any of the spectrum, the burden of purchasing capacity from the WOAN may be far greater than for larger firms. This may disincentivise smaller firms from bidding for spectrum, making the auction less competitive and potential the market too. Furthermore, to the extent that the price for access to the WOAN is high (which is likely to be before it achieves sufficient scale), this will also raise costs, which will affect the smaller players more than the larger players and in turn negatively impact competition in the market.

3.23.2. To the extent that the IM's reference to high demand spectrum is intended to convey that this obligation would only apply to the 700/800Mhz and 2600Mhz bands (and thus only lots B, C, and D), this concern may be mitigated to some extent. However, to the extent that a smaller player like Telkom wins one of the lots, the cost of the obligation to purchase capacity in the WOAN would significantly higher relative to its revenue compared to Vodacom or MTN. Given that the cost of access to the WOAN is not yet clear, this may create significant risk for smaller potential bidders.

3.23.3. Criteria that could take account of the bidder's size may address this concern. The Commission suggested in its earlier submission to ICASA that the share of capacity in the WOAN purchased by licensees should reflect traffic volumes, but other measures such as subscriber numbers or mobile service revenue may also be appropriate.

3.23.4. Secondly, the definition of capacity is not clear from the IM and may result in uncertainty for bidders. For example, if the WOAN is roaming on other networks, it is not clear whether capacity would include the additional capacity held through roaming agreements. In such a scenario, one may find an operator providing roaming services to the WOAN while that operator also purchases capacity from the WOAN, which would imply that the operator is in fact purchasing capacity on its own network.

[28] Commission submission to ICASA, 20 September 2019, para. 5.4 – 5.4.2

3.23.5. The alternative would be to provide that the obligation applies only to capacity provided on the WOAN's own infrastructure, which may be very limited at first. However, the WOAN would have the ability to control how much capacity is purchased in terms of any roaming deals with other networks and thus this may be appropriate.

3.23.6. Further clarity on how precisely how capacity will be measured may also be helpful to prospective bidders that will be subject to the offtake obligations.

Open access obligations on licensees

3.24. Paragraph 6.3.6 refers to the Policy Directive's provisions for open access obligations on infrastructure and/or network facilities on winners of spectrum. The Policy Directive's requirement for "*leasing of electronic communications networks and electronic communications facilities and provision of wholesale capacity to other licensees*"[29] is explicitly not limited to provide such access to the WOAN. Thus there is an imperative to use the spectrum assignment process to enforce such facilities and capacity. This is line with the Commission's previous submission to ICASA as well as the recommendations of the DSMI report in terms of interventions at the wholesale level. As such we suggest the following obligations are included for winners of spectrum (all spectrum lots).

3.24.1. An obligation to provide MVNO and roaming services according to standard service and pricing arrangements that provide for quality access at true wholesale prices that are below the retail price of the operator. This is discussed in the DSMI final report and is a recommendation for action at the wholesale level of the industry.

3.24.2. An obligation to offer standard quality and pricing arrangement or agreements on facilities and site access, with an obligation for cost-based access where facilities are defined as essential facilities. The DSMI final report also recommends the ICASA proceed with the definition of essential facilities to give effect to such obligations.

[29] Policy Directive, para. 2.1.4(a)

3.24.3. An obligation to implement full accounting separation for their wholesale network infrastructure, including the radio access network (RAN) and core network.

Empowerment obligations

3.25. While the Policy Directive has more detailed specifications regarding the empowerment requirements of the WOAN[30], with respect to the assignment of spectrum for other players, it specifies that the policy objective of "*compliance with empowerment requirements*"[31] must be achieved.

3.26. The IM thus specifies empowerment obligations. Broadly it states that qualification criteria would be in accordance with regulation 6 and 7 of the Radio Frequency Spectrum Regulations of 2015 ("RFSR"). Regarding transformation objectives specifically, the minimum qualification criterion is that an applicant for spectrum should have either a minimum of 30% equity ownership by HDGs or B-BBEE level 4 status. This reflects the minimum criteria set out in regulation 7 of the RFSR[32].

3.27. However, the IM goes further by requiring that licensees (and therefore any winner of spectrum), would need to reach a B-BBEE level 3 status within 36 months. The Commission supports this progressive approach and believes that there is also scope for ICASA to give consideration to an even more ambitious empowerment requirement from the industry in the licensing process. The Commission understands that the process to licence a WOAN is separate to this process and thus the specific empowerment criteria for the WOAN would be specified in that separate process.

4. CONCLUSIONS

4.1. The licensing of spectrum that is coming available as a result of digital migration is an urgent imperative if capacity is to be expanded and costs reduced to the benefit of consumers and the economy more broadly. However, in the rush to licence spectrum, one should also not lose sight of the fact that the assignment of spectrum and

[30] Policy Directive, para. 3.3
[31] Policy Directive, para. 2.1.4(e)
[32] RFSR, Section 7(3)(d)

obligations imposed can have significant effects on future competition and overall data affordability to the population as a whole. In the context of uncompetitive mobile data markets and high prices, the design of the spectrum assignment process therefore needs to put these objectives front and centre in its design. This includes the 5G spectrum which may not be ready for release until the implications of a future 5G market are fully understood. Finally, digital migration needs to be fast-tracked in order to enable this spectrum to be utilised immediately once assigned.