Vodacom's non confidential response

Second Information Memorandum on Licensing of Spectrum in the IMT700, IMT800, IMT2600 and IMT3500 Bands

This submission is structured as follows: Page

Executive summary

Vodacom welcomes the opportunity to comment on ICASA's second Information Memorandum ("**IM2**") on the spectrum award process. However, in general, Vodacom is disappointed that ICASA did not properly engage with any of the points made by Vodacom in its response to the first IM ("**IM1**"). Vodacom would re-iterate that it is critical that ICASA devises an appropriate auction design, especially given the large amount of spectrum on offer in the auction. Failing to do so would result in the potential large benefits associated with the spectrum on offer not being realised, which would have a detrimental impact on South African mobile users and the wider economy.

Whilst ICASA has not engaged with the points made by Vodacom, it has made what seems like a subtle but critical modification: it has allowed Non-Tier 1 operators to bid for any MSP package offered in the opt-in round. Vodacom considers that this means Non-Tier 1 operators would very likely obtain 2X25MHz of low frequency spectrum at prices significantly below their market value. This would leave Tier 1 operators having to pay artificially inflated prices for a lower amount of low frequency spectrum – compared to what was proposed in the 2020 ITA and IM1.

Furthermore, Tier 1 operators would face costly coverage obligations, with an unjustified outside-in requirement, particularly onerous for the operator that is forced to acquire the Coverage Lot. In contrast, the coverage obligations imposed on Non-Tier 1 operators are obligations only in name: the most likely Non-Tier 1 operators are either already meeting the required coverage or would be expected to meet it absent any obligation. Vodacom therefore considers that the IM2 proposal can be expected to lead to unreasonable discrimination against Tier 1 operators in favour of Non-Tier 1 operators, and in particular the Tier 1 operator that acquires the Coverage Lot. This would not only distort competition in South African mobile markets, but would likely lead to an inefficient allocation of spectrum, and undermine the ability of ICASA to achieve its objectives for the auction.

Far more onerous coverage obligations are proposed for Tier 1 versus Non-Tier 1 operators

Non-Tier 1 operators who win spectrum at the auction face an 80% population coverage requirement[1] [2]. This is likely to be easily achieved by existing Non-Tier 1 operators, as they are already close to or even beyond 80% population coverage. Even if Non-Tier 1 operators do not have 80% coverage yet, such a level of roll-out is very likely to be commercially viable anyway (especially when low frequency spectrum is deployed), meaning that the obligation itself imposes little to no additional cost on Non-Tier 1 operators.

In contrast, the proposed coverage obligations for Tier 1 operators will impose additional costs on them. This is because the 97% population coverage requirement[3] means that Tier 1 operators will have to roll out to areas that are not commercially viable (with a 5 Mbps throughput). The additional costs will be significantly higher in the case of the Coverage Lot[4], which requires 99.8% population coverage (with a 5 Mbps throughput)[5]. Such a high coverage obligation is out-of-line with international precedent, especially for a country like South Africa that has a large share of the population living in rural areas. The large asymmetry between ICASA's proposed coverage obligations for Tier 1 and Non-Tier 1 operators is also inconsistent with the international evidence ICASA itself has relied upon in its 2020 ITA Reasons Document.

The outside-in obligation (i.e. the requirement to cover rural areas before being able to deploy the newly acquired 700MHz/800MHz spectrum in urban areas) further increases the costs for Tier 1 operators. Furthermore, as Non-Tier 1 operators do not face this obligation, they would be able to roll-out this spectrum in urban areas sooner, and obtain an unjustified competitive advantage relative to Tier 1

[1] Par 11.2.2.3, IM2
[2] For sub-national operators, this coverage obligation would only apply if they acquired the spectrum in the opt-in round.
[3] Par 11.2.2.1, IM2
[4] Non-Tier 1 operators could also win the Coverage Lot. But they are unlikely do so in practice given that i) this would increase their population coverage obligation from 80% to 99.8% and ii) ICASA has designed an opt-in round with a significant amount of low frequency spectrum, including 2X15MHz of 800MHz
[5] Par 11.2.2.3, IM2

operators, not because they are more efficient or innovative, but as a result of the extended coverage obligations with an outside-in requirement being imposed only on Tier 1 operators in the ITA.

Such an outcome would also have a detrimental effect on consumers in urban areas as it would prevent Tier 1 operators from deploying the spectrum where it is most needed (i.e. capacity constrained urban areas) as soon as it becomes available, leading to lower quality of service and mobile speeds for consumers and businesses in these areas, and hampering the ability of the South Africa economy to recover.

The opt-in round provides excessive support for Non-Tier 1 operators

Vodacom is disappointed that ICASA proposes to retain the opt-in round. Vodacom is of the view that this effectively amounts to further unjustified assistance to Non-Tier 1 operators, especially given the way that ICASA now proposes to design the opt-in round.

Vodacom is particularly concerned that 2X25MHz of low frequency spectrum is likely to be sold in the opt-in round. ICASA has modified its proposals from IM1, effectively to provide more assistance to Non-Tier 1 operators, and, in particular, Telkom. [redacted] And, as set out in Vodacom's response to IM1, Telkom has been able to increase significantly its market share since the last competition assessment undertaken by ICASA, without any low frequency spectrum.

[redacted] Given the scarcity of low frequency spectrum in the auction, this represents a fundamental change to the auction design.

Furthermore, the excessive allocation of valuable low frequency spectrum in the opt-in round would also imply that the two Tier 1 operators would likely have to pay artificially inflated prices, and accept onerous coverage obligations, in order to be able to acquire the necessary amount of low frequency spectrum to be able to remain competitive in the South African mobile market.

The proposed auction design will result in unreasonable discrimination against Tier 1 operators

The combined effect of the coverage obligations and opt-in round is likely to result in unreasonable discrimination against Tier 1 operators. In turn, this may distort competition because:

- Tier 1 operators will be unable to deploy 700MHz/800MHz spectrum in urban areas (Batch 1 areas) until they have rolled-out spectrum in rural areas due to the outside-in coverage obligations.

- Tier 1 operators will face a high fixed cost of meeting their coverage obligations, and an inability to recover such costs from rural customers.

- Non-Tier 1 operators may significantly underpay for spectrum, as they will be able to acquire a significant amount of valuable spectrum, whilst facing limited competition.

[1] [redacted]

- Non-Tier 1 operators will likely have been awarded more spectrum than they need to be credible at a very low cost, whilst Tier 1 operators would likely be deprived of valuable spectrum which they could use more efficiently.

Vodacom considers that ICASA cannot justify the design of IM2 on the grounds of promoting competition.

- **First**, these outcomes result in Tier 1 operators likely being in a much worse position than Non-Tier 1, compared to both the likely outcomes under the 2020 ITA and IM1. And yet, there is significant evidence to show that the position of Non-Tier 1 operators versus Tier 1 operators has improved since ICASA's last competition assessment.

- **Second**, ICASA is considering and proposing a range of obligations to be imposed on Tier 1 operators following the market review process, which aim to address its competition concerns in mobile markets.

- **Finally**, and unlike the situation in a large number of other countries, ICASA is setting aside spectrum for a WOAN, which will be a fifth wholesale network and is a further attempt to add additional support to the development of competition in the South African mobile market.

This clearly demonstrates that the level of support that ICASA is proposing to provide to Non-Tier 1 operators in IM2 is unreasonable and unjustified. To the extent that ICASA has competition concerns with the South African mobile markets, it is already addressing such concerns through its market review process.

The proposed auction design will undermine ICASA's own objectives

ICASA's proposed auction design will also undermine the achievement of its own objectives as:

- **It will to lead to an inefficient allocation of spectrum**. ICASA's current proposals include much more valuable low frequency spectrum in the opt-in round than is necessary to ensure the credibility of Non-Tier 1 operators.

- **It will lead to a deterioration of service in urban areas**. ICASA's outside-in obligation will result in a significant amount of 700MHz/800MHz spectrum being unused as soon as it becomes available in urban areas, leading to material deterioration in the quality of service and speeds that consumers can enjoy in these areas, compared to absent such an obligation. Whist there is general support to enhance mobile broadband coverage in rural areas, this should not be done by depriving urban consumers from the best possible mobile services possible through the optimum deployment of all of the IMT spectrum bands available.

Vodacom's proposed way forward for ensuring that the objectives of the ECA Act are met in a non-discriminatory way

To help ensure that the objectives of the ECA Act are met in a non-discriminatory way, Vodacom would propose that:

- All operators who acquire low frequency spectrum should face a population of coverage obligation of 99% (with 5Mbps throughput). Tier 1 operators should be required to meet this obligation 5 years after the digital migration process has been completed. In contrast, Non-Tier 1 operators should be given a longer time period to meet this obligation. This additional time for Non-Tier 1 operators is to reflect the fact that Non-Tier 1 operators may be starting from a lower (but still relatively high) level of coverage. To help make the coverage obligations more achievable, operators should be allowed to share the obligations. ;

- The outside-in obligation be removed for Tier 1 operators;

- If ICASA maintains its view that there should be an opt-in round, then it should include a total of 2X15MHz of 800MHz spectrum only as this would enable, for example, [redacted] This would result in there being 2X35MHz of sub 1GHz in the main auction.

Other issues

Vodacom also has a number of concerns with other aspects of ICASA's auction design namely:

- The social obligations to zero-rate government content;
- The stringent BBBEE requirements;
- The exclusion of the 40MHz of 2.3GHz spectrum from the auction; and
- Rain's 3.7GHz spectrum not counting towards the spectrum caps.

These are explained in more detail in the main body of the Vodacom submission.

A. Introduction

Vodacom welcomes the opportunity to comment on ICASA's IM2 on the spectrum award process. However, in general, Vodacom is disappointed that ICASA has not properly engaged with any of the points made by Vodacom in its response to the IM1. Vodacom would re-iterate that it is critical that ICASA devises an appropriate auction format, especially given the large amount of spectrum on offer in the auction.

Whilst regulators in other countries have, in some cases, provided support to smaller operators in auctions[7], ICASA's approach goes far beyond those levels. Given this, ICASA's proposed auction design is likely to result in unreasonable discrimination against the Tier 1 operators, whilst also undermining ICASA's objectives for the auction.

Therefore, unless ICASA reconsiders fundamental elements of its proposals, in line with the comments offered by Vodacom in its response to IM1, Vodacom considers that the potential benefits of the spectrum on offer will not be realised. The degree to which Non-Tier 1 operators are unfairly favoured and the associated inefficiencies threaten to render the design of the ITA so contrary to the objects of the ECA and ICASA's stated objectives, as to be unreasonable, irrational and unlawful.

Vodacom will not repeat all of the points made in its submission to IM1. Vodacom stands by all of these points and many of them remain relevant given that ICASA's IM2 overlaps significantly with its IM1. Points particular to IM2 will be emphasised in this submission, and, where appropriate, reference may be made to points made in Vodacom's submission on IM1, which should be read in conjunction with this submission.

1. ICASA's objectives under the ECA

Vodacom would again re-iterate that, as recognised by ICASA in its 2020 ITA, ICASA has to take into account a number of objectives when assigning spectrum (under the Electronics Communications Act ("**ECA**")):

> *"3.1.1. Promote broad-based black economic empowerment, with particular attention to the needs of women, opportunities for youth and challenges for persons with disabilities;*

[7] As set out in Section D.3, Vodacom considers that Telkom should not be viewed as a smaller operator given its impressive growth over a sustained period of time

3.1.2. Promote the universal provision of electronic communications networks and electronic communications services and connectivity for all;

3.1.3. Promote the interests of consumers with regard to the price, quality and the variety of electronic communications services;

3.1.4. Develop and promote SMMEs and cooperatives;

3.1.5. Encourage investment and innovation in the communications sector;

3.1.6. Promote an environment of open, fair and non-discriminatory access to broadcasting services, electronic communication networks and to electronic communications services;

3.1.7. Promote competition within the ICT sector;

3.1.8. Promote and facilitate the development of interoperable and interconnected electronic networks, the provision of the services contemplated in the Act and to create a technologically neutral licencing framework; and

3.1.9. Ensure efficient use of the radio frequency spectrum."

When designing the auction, these objectives should be at the forefront of ICASA's thinking. Vodacom returns to these objectives throughout this submission.

2. Best practice principles for obligations imposed in spectrum auctions

ICASA is proposing to impose a long list of onerous license obligations on operators (mainly Tier 1 operators) as part of the spectrum award process. These obligations include:

- High coverage obligations on Tier 1 operators;
  - 99.8% population coverage (5Mbps throughput) for the Coverage Lot[8];
  - 97% population coverage (5Mbps throughput) for the other Tier 1 operator; and
  - An outside-in obligation.
- Spectrum-sharing;
- Zero-rating of websites;
- Stringent BBBEE requirements;
- MVNO access; and
- Reference offers for site access for Tier 1 operators.

Whilst regulators consider the imposition of some obligations as part of spectrum auctions (e.g. coverage obligations), the extensive list and intrusive nature of the obligations proposed by ICASA go far beyond what is typically imposed by other regulators.

[8] Technically, smaller operators can also bid for Coverage Lot, although they are unlikely to do in practice given the high costs of meeting this obligation

International best practice sets out the importance of regulators following a number of principles when imposing obligations as part of spectrum auctions:

- **Predictability**[9]. It is important that the impact of the obligations is predictable over a long period of time (i.e. 20 years for the obligations that will last for the whole of the licence duration). If the impact of the obligations is unpredictable, then it will be difficult for operators to value the spectrum on offer. As a result, the attractiveness and valuation of the spectrum will be reduced. Even once operators have acquired the spectrum, unpredictable licence obligations may deter investment, if it makes operators uncertain about the return that they will be able to make on any investments[10].

- **Transparency**[11]. For similar reasons, it is also important that any obligations are transparent and easy to understand. If not, then this again could reduce the attractiveness and valuation of the spectrum. For example, the EC's Radio Spectrum Policy Group ("**RSPG**") has stated that:

  > *"In all cases it is essential that there is transparency about the mechanisms that will be used and the obligations that will be imposed as part of the award process. This ensures that operators are clear about the rules of the award and the commitments that they will be expected to meet if they are successful bidders in the award."*[12]

- **Proportionality**. Any obligations should be proportionate to the issues that the regulator is trying to address. ICASA has itself recognised this[13].

- **Coherency**. Any obligations should be coherent with other policy decisions taken by the regulator. This is particularly important in South Africa, as unlike other jurisdictions, ICASA is also proposing the imposition of a range of obligations on what it considers to be dominant mobile operators in South Africa, with the aim of promoting competition.

- **Cost-benefit analysis**. Regulators should demonstrate that the benefits of any obligations outweigh the costs.

These principles are reflected in Ofcom's more general approach towards regulation – summarised below. ICASA has referenced Ofcom's approach as a standard to follow in a number of occasions throughout the auction design process.

[9] For example, the GSMA has stated that *"Realising the consumer and business benefits of mobile services will require licensing frameworks which:*
- ensure operators have access to sufficient spectrum;
*- **provide predictability** to support the new network investment needed; and*
- avoid costly restrictions on the use of spectrum beyond those needed to manage interference." [Emphasis added]
(GSMA - Best practice in mobile spectrum licensing (September 2016))
[10] For example, the GSMA has stated that *"Uncertainty in licence terms and conditions will jeopardise investment "*(Auction Best Practice - GSMA Public Policy Position (September 2021)
[11] For example, the GSMA has stated that *"Licensing authorities should ensure that the overall licensing framework offers stability and transparency to reduce regulatory risk and promote investment"* (GSMA - Best practice in mobile spectrum licensing (September 2016))
[12] RSPG Report on Efficient Awards and Efficient Use of Spectrum (24 February 2016)
[13] *"For ICASA to enhance competition through this award, ICASA should, subject to proportionality, take the minimum measures necessary to ensure that at least five wholesale network operators (including the new WOAN entrant) have access to spectrum to enable them to be capable of being credible national competitors at the wholesale level after the auction."* (ITA 2020 Reasons Document, par 44).

OFCOM'S APPROACH TOWARDS REGULATION[14][15]

"When we regulate

Ofcom will operate with a bias against intervention, but with a willingness to intervene promptly and effectively where required.

Ofcom will intervene where there is a specific statutory duty to work towards a goal that markets alone cannot achieve.

How we regulate

Ofcom will always seek the least intrusive regulatory methods of achieving its objectives.

Ofcom will strive to ensure that interventions are evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome.

Ofcom will regulate with a clearly articulated and publicly reviewed annual plan, with stated objectives.

How we support regulation

Ofcom will research markets constantly and will aim to remain at the forefront of technological understanding.

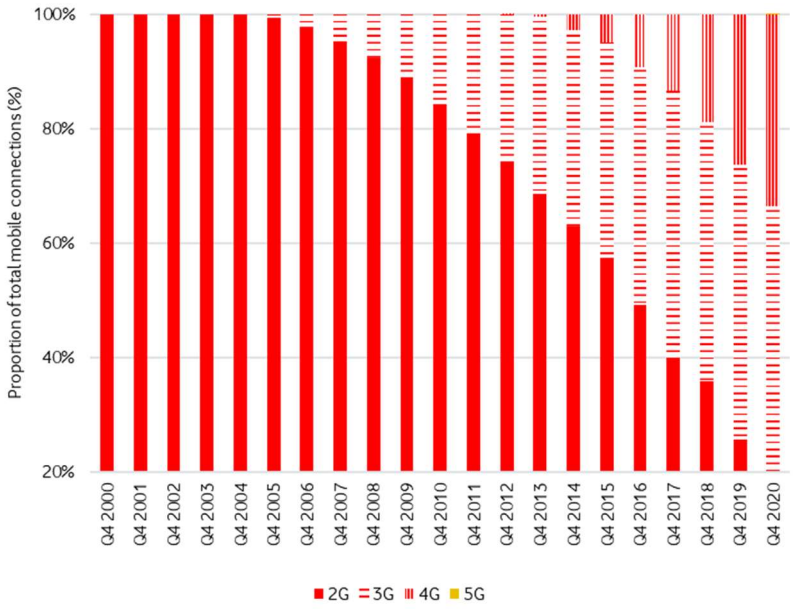
Ofcom will consult widely with all relevant stakeholders and assess the impact of regulatory action before imposing regulation on a market."

Vodacom encourages ICASA to reconsider its proposed list of obligations on the basis of these guidelines. Importantly, there are a number of other more appropriate and applicable processes which ICASA can use to impose some of the obligations it is proposing to attach to spectrum licences, including market review remedies and end-user regulations.

A key benefit of using such processes (instead of the spectrum auction) is that the suitability of the obligations can be assessed on a periodic basis. For example, market reviews are typically carried out every 3-5 years. In contrast, the spectrum licences being auctioned by ICASA have a duration of 20 years. As demonstrated by the experience in South Africa, mobile markets can change rapidly over a 5 year period, let alone 20 years, with a lot of this change being unanticipated: e.g. all mobile connections relied on 2G technology in 2000, primarily used for voice and SMS services. At the end of 2020 this had dropped to 20% with most mobile connections relying on 3G (46%) and 4G (34%), primarily used for data services, as set out in the Figure below.

[14] https://www.ofcom.org.uk/about-ofcom/policies-and-guidelines
[15] This relates to regulation more generally and not just when imposing obligations on spectrum licences

Figure 1: Mobile connections in South Africa by technology over the last 20 years

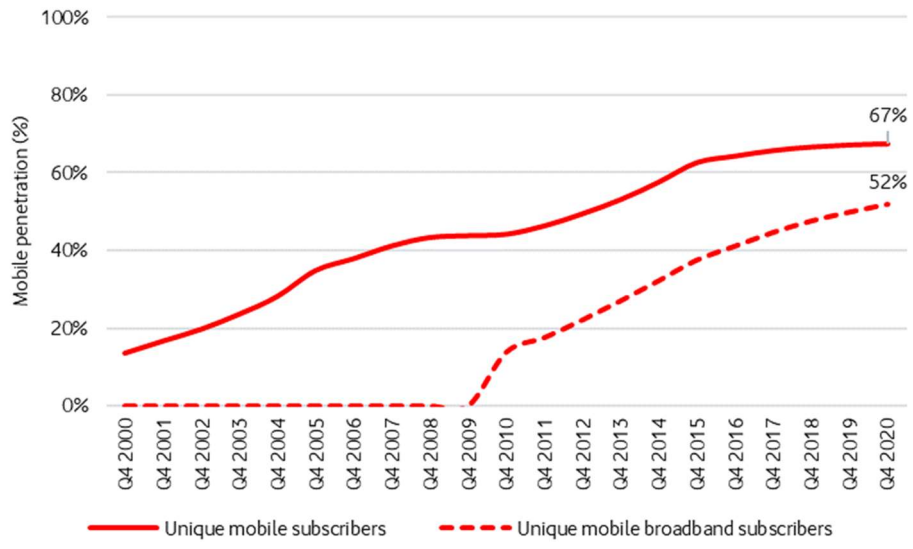


Source: Frontier Economics analysis using GSMA data.

It is worth noting that a considerable amount of this change was experienced in the years between 2015 and 2020, illustrating that the pace of change has increased recently. This is likely to continue in the coming years with the introduction of 5G services.

Alongside changes in the mix of mobile technologies, there have also been significant changes in (i) the take-up of mobile services and mobile broadband and (ii) the use of these services. As shown in the graph below the take-up of mobile services has increased from just 14% in 2000 to 67% in 2020. There has been a similar increase in the take-up of mobile broadband services. And mobile data usage has increased exponentially. The total amount of mobile data traffic (in millions of GB) that Vodacom delivers per quarter has increased by 912% in the last 6 years from 11 million GB in 2014 to 116 million GB in 2020.

Figure 2: Mobile penetration in South Africa over the last 20 years



Source: Frontier Economics analysis using GSMA data.

In conclusion, If ICASA continues to consider that the obligations that it is proposing are fit-for-purpose, the above highlights a clear need for ICASA to re-assess whether such obligations are better suited to other processes. For example, the GSMA has stated that:

> *"When mobile spectrum was licensed to only a single incumbent operator, imposing a series of obligations as part of that operator's licence represented a relatively straightforward way to achieve particular objectives. However,* ***the development of competition in communications markets raises the need to regularly review which policy objectives remain relevant and which operators should be subject to any obligations****. As a result, licence obligations can often result in greater costs than benefits."*[16] [Emphasis added]

3. Structure of this submission

The rest of Vodacom's response is structured as follows:

- Section B explains that ICASA has proposed unjustifiably far more onerous coverage obligations on Tier 1 operators than Non-Tier 1 operators;
- Section C describes how the opt-in round provides excessive support for Non-Tier 1 operators;
- Section D sets out why ICASA's proposed auction design will result in unreasonable discrimination against Tier 1 operators;
- Section E sets out why ICASA's proposed auction design will likely undermine its own objectives;
- Section F sets out Vodacom's proposed way forward for ensuring that the objectives of the ECA Act are met in a non-discriminatory way;
- Section G covers a range of other issues, including the social obligations, the BBBEE requirements, the treatment of the 40MHz of 2.3GHz and Rain's 3.7GHz spectrum, the roaming arrangements and spectrum-sharing;
- Section H comments on the details of the auction stage; and
- Section I sets out areas that require further clarity.

B. Far more onerous coverage obligations are proposed for Tier 1 versus Non-Tier 1 operators

The characteristics of the auction provide excessive and unjustified support for Non-Tier 1 operators, more so if one considers that this differentiation will apply for a period of 20 years. The first key element of this support is the coverage obligations imposed on Non-Tier 1 operators as compared to the coverage obligations imposed on Tier 1 operators. This support amounts to unduly assisting particular competitors rather than promoting competition and universal coverage by all licensees assigned IMT spectrum. It is significantly out of step with any reasonable comparative best practice for achieving coverage objectives and promoting competition and is unreasonable and unjustified.

Non-Tier 1 operators who win spectrum in the auction face an 80% population coverage requirement[17] [18]. This obligation will likely impose little to no additional cost on Non-Tier 1 operators (as they already

[16] GSMA - Best practice in mobile spectrum licensing (September 2016)
[17] Par 11.2.2.3, IM2
[18] For sub-national operators, this only applies if they acquire spectrum in the opt-in round.

have achieved such coverage, or would be expected roll out to 80% without any obligations at immaterial additional cost).

Against this, the proposed coverage obligations for Tier 1 operators will impose significant additional costs on them over the licence period, further increased by the outside-in obligation. The additional costs will be significantly higher in the case of the Coverage Lot[19], which requires 99.8% population coverage[20].

Furthermore, as the outside-in obligation is only imposed on Tier 1 operators, it will give Non-Tier 1 operators an unjustified and unfair competitive advantage in urban areas. In the sections below, we explain that:

- The 80% coverage obligations imply minimal additional costs for Non-Tier 1 operators;
- The coverage obligations would unfairly impose additional costs on Tier 1 operators, particularly in case of the coverage lot;
- The outside-in coverage obligation further disadvantages Tier 1 operators – these are not faced by Non-Tier 1 operators.

We consider the implications of the above outcomes in terms of leading to unreasonable discrimination between Tier 1 and 2 operators in Section D, and consider the detrimental impact on consumers in Section E.

1. The 80% coverage obligation would imply minimal additional costs for Non-Tier 1 operators

[redacted]

[20] Par 11.2.2.3, IM2

[redacted]

Vodacom notes that the high degree of asymmetry between ICASA's proposed coverage obligations for Tier 1 and Non-Tier 1 operators is inconsistent with the international evidence ICASA claims to have relied upon in its 2020 ITA Reasons Document (namely the 2015 Electronic Communications Committee report on mobile coverage obligations)[23]. It is generally not the case that coverage obligations are differentiated on the basis of operator size. It is also generally the case that, where there is variation in coverage obligations, this variation is relatively limited, e.g. in Finland there are two coverage obligations attached to 800MHz: one requires 99% coverage and the other 97%. (This is discussed in more detail below when comparing the Finnish coverage obligations to ICASA's proposals).

This difference in coverage obligation of 2 percentage points compares starkly to ICASA's proposal to have a 17 percentage point difference in the coverage obligations (or 19.8 percentage points for the Coverage Lot).

2. The coverage obligations would result in significant costs for Tier 1 operators relative to non-Tier 1 operators

While coverage obligations are a common feature of spectrum auctions around the world, it is important that such obligations are reasonable, and in the main applicable to all licensees acquiring spectrum. But this is not the case for ICASA's proposals. Instead, ICASA proposes unfair coverage obligations on Tier 1 operators that require significant additional costs when compared to the much lower coverage obligations proposed for Non-Tier 1 operators, especially when considering the 99.8% coverage obligation attached to the Coverage Lot.

Besides the fairness and discrimination concerns between Tier 1 operators and others, Vodacom considers the 99.8% obligation on the Coverage Lot to be excessive in and of itself. The differential in reserve prices between the two types of lots is also too small to account for the extra costs imposed by the Coverage Lot.

[21] https://www.cellc.co.za/cellc/newsroom-detail/Implementation-of-Cell-C-roaming-agreement-with-MTN-now-complete
[22] Par 11.2.2.3, IM2
[23] Available here: https://docdb.cept.org/download/59a0f2f2-668b/ECCREP231.PDF

2.1 The 97% coverage obligation disadvantages Tier 1 operators to compete fairly in the market with other operators by imposing disproportionate costs on Tier 1 operators relative to non-Tier 1 operators

[redacted]

2.2 The 99.8% obligation on the Coverage Lot is excessive and would impose substantial costs on one of the Tier 1 operators

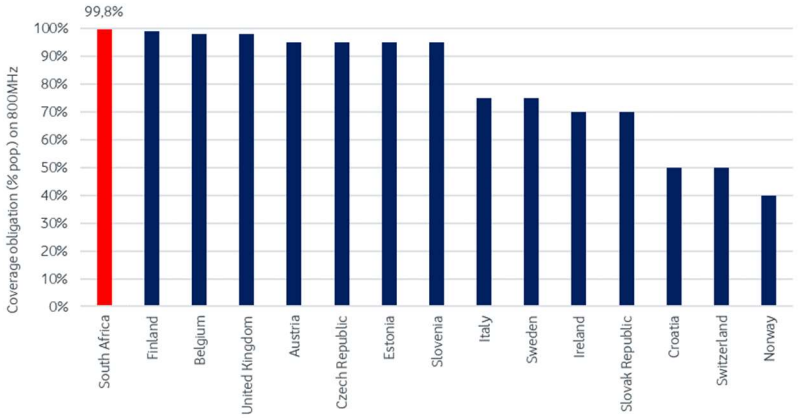
[redacted]

ICASA's proposed obligation clearly does not sit within the range of coverage obligations imposed in international benchmarks. This is because the 99% coverage obligation in Finland relates to "basic coverage" rather than a specific criterion on downlink. It is also the case that alternative operators who acquire 800MHz but do not have a 99% coverage obligation still have similarly high targets at 97% of the population. As such, Vodacom remains of the view that ICASA's proposed coverage is excessive and out of line with international evidence.

[24] This figure, as well as other coverage metrics in this section, are measured with ICASA's 5 mbps downlink speed requirement in mind; i.e. it follows the same calculation methodology as the coverage obligations set out in IM2

[25] Vodacom notes that of the countries included in the EC's report, Denmark is the only country to consider a 99.8% coverage obligation on 800MHz spectrum. But this is excluded from the analysis as (i) the obligation related to 3 specific areas in Denmark, rather than nationwide and (ii) the obligation could be split across the licensee so that a different operator is assigned to achieve 99.8% coverage in each of the three regions. The data also includes a 99.5% obligation in Iceland. But this is also excluded from the analysis as it is specified in terms of homes and businesses rather than population. In addition to this difference, Iceland is structurally distinct from South Africa in many ways. It has a population of less than 400,000 people, which compares to South Africa's nearly 60 million. While Iceland's population density is lower than [redacted] Iceland also has a high GDP per capita, which makes it easier to recover the costs of rolling-out networks in less densely populated areas, as ARPUs are likely to be higher

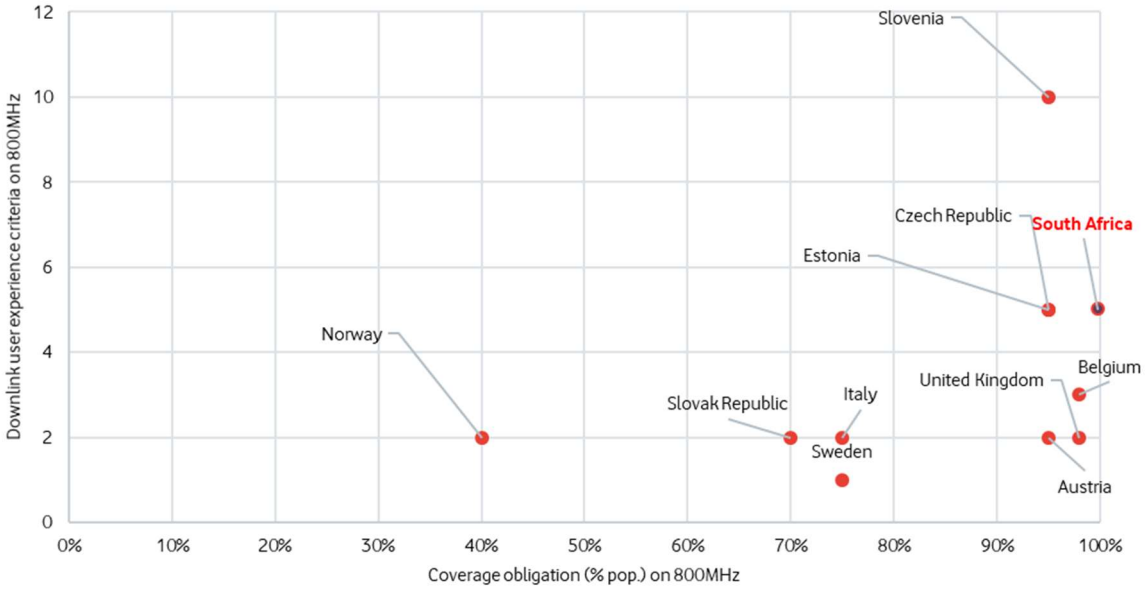
Figure 3: International evidence on coverage obligations



Source: Frontier Economics analysis using data from the 2015 ECC report.
Note: ICASA itself relied on this 2015 EC report when setting its throughput obligation.

It is also helpful to compare ICASA's proposed 5Mbps throughput obligation (combined with its 99.8% coverage obligation) to international evidence. Again, there are clear differences between South Africa and other countries. The Figure below sets out countries' coverage obligations against the downlink user experience obligation on 800MHz spectrum[26]. The Figure shows that South Africa is one of the most extreme countries in terms of coverage and throughput obligations. There is one country with higher downlink obligations than ICASA is proposing for South Africa, which is Slovenia. However, Slovenia's higher downlink criteria should be viewed in the context of it having a lower population coverage obligation of 95%.

Figure 4: International evidence on coverage obligations and downlink criteria



Source: Frontier Economics analysis using data from the 2015 ECC report, see Table 3.
Note: ICASA itself relied on this 2015 EC report when setting its throughput obligation.

2.3 The relative reserve prices do not reflect the costs of achieving the coverage obligation

[26] Where downlink obligation vary by licensee or over time, we have used the maximum obligation

[redacted] If the difference in reserve prices is intended to incentivise and/or compensate an operator willing to bid for the coverage Lot, it is totally inefficient. Vodacom raised this issue in its submission on IM1 but ICASA has not changed any of the reserve prices in IM2, nor provided any substantial response to Vodacom's argument.

Figure 5: ICASA's reserve prices for low frequency spectrum

Lot number(s)	Lot category	Lot size	Number of lots available	Reserve price per lot
1-4	700 MHz	2 x 5 MHz	4	R526 615 392,49
5-8	800 MHz	2 x 5 MHz	4	R752 307 703,55
9	800 MHz	2 x 10 MHz	1	R1 155 174 976,66

Source: ICASA's IM2

[redacted]

Efficient price discovery would be aided by setting an accurate discount or difference between the Lots with coverage obligations and those Lots without. The current low discount carries a risk that the Coverage Lot may go unsold.

3. The outside-in coverage obligation materially disadvantages Tier 1 operators

The outside-in coverage obligation will have a material impact on Tier 1 operator's roll-out plans and detrimental to South African mobile consumers (particularly urban consumers).

3.1 The outside-in obligation set out in IM2

Vodacom understands the outside-in obligation is as follows:

[redacted]

[1] [redacted]

[redacted]

3.2 The outside-in obligation will likely lead to significant additional costs for Tier 1 operators

[redacted]

C. The opt-in round provides excessive support for Non-Tier 1 operators

Vodacom is disappointed that ICASA proposes to retain the opt-in round. Vodacom is of the view that this effectively amounts to further unjustified assistance to Non-Tier 1 operators, especially given the way that ICASA now proposes to design the opt-in round. [redacted]

ICASA set out in IM1 that:

> *"taking into account the IMT spectrum existing holdings, qualifying opt-in bidders must bid for the MSP with lowest total (i.e., considering both sub-1GHz and greater than 1GHz) spectrum top-requirement."*[28]

[redacted]

[28] Par 1.2.12, IM1
[29] Par 15.1.5, IM2

[redacted]

ICASA'S OPT-IN ROUND[30]

ICASA sets out in IM2 that the opt-in round will be a single bidding round at the start of the auction, where eligible bidders can place simultaneous sealed bids on the two MSPs. The eligibility of a bidder – which will be assessed by ICASA prior to the round - will depend on the bidder's existing holdings of IMT spectrum. More specifically, ICASA states that *"bidders who do not already meet either MSP1 or MSP2 will be qualified to Opt-in"*.

There will be two winning bidders in the opt-in round, one for each MSP. The winning bidders may acquire *"only the smallest amount of spectrum that would "make good" that bidder's MSP, taking into account their existing IMT spectrum holdings"*. The winning bidders will be identified by ICASA. The bidder with the highest ranked bid for MSP1 will be the winning bidder for MSP1. If necessary, the bid placed on MSP2 by the winning bidder of MSP1 will be discarded. The highest ranked bid, of those remaining, for MSP2 will be the winning bidder.

The winning bidders for each MSP will be determined by the premium that they bid for the MSP. Each winning bidder must pay a price equal to the lower of (a) the bidder's own winning bid; and (b) the highest bid for either MSP1 or MSP2 that was submitted by a bidder that did not win either MSP. In addition, each winning bidder must pay the sum of the reserve prices associated with the spectrum in its winning MSP.

[redacted]

[30] Par 15.1.2-3,6.2, IM2

[redacted]

[33] This excludes Rain's 3.7GHz, As set out in Section G, Vodacom disagrees with ICASA's proposal to exclude Rain's 3.7GHz when calculating its top-up requirements and the impact of the spectrum caps.

Figure 7: Top-up requirements for MSP2

As discussed in more detail in Section D, taken together, Vodacom is of the view that ICASA's proposals for the opt-in round (amplified by the issues with the coverage obligations) under IM2 would result in unreasonable discrimination against Tier 1 operators, and in particular the Tier 1 operator that acquires the Coverage Lot.

- 2X12MHz of 1.8GHz;
- 2X15MHz of 2.1GHz;
- 1X60MHz of 2.3GHz[34]; and
- 1X28MHz of 3.5GHz

[34] Telkom has itself claimed that it holds 1X87MHz of 2.3GHz
[35] Whilst Telkom states that it wants to acquire 2X20MHz of low frequency spectrum, this by no means implies that Telkom needs 2X20MHz of low frequency spectrum to be credible
[36] For example, see Figure 8 of Telkom's submission to IM1

[38] Rain ITA application, part 1, section 1.1

[redacted]

[41] See portfolios 1 and 2 from the 2020 ITA Reason Document
[42] ITA 2020 Reasons Document, page 115
[43] See portfolios 5 and 6 from the 2020 ITA Reason Document

[redacted]

1. The market review process is already addressing competition issues

[redacted]

[44] This assumes that Telkom and Rain acquire spectrum in the opt-in round

ICASA recently produced Draft Regulations as part of the Mobile Broadband Services Inquiry ("**MBSI**") process. The purpose of these Regulations is to tackle any competition issues that ICASA had identified in mobile markets. In light if this, Vodacom considers that there is no justification for the auction design to be shaped to provide significant support to Non-Tier-1 operators, and to impose onerous obligations on Tier 1 operators.

In particular, as part of the MBSI process, ICASA claims that there is Significant Market Power ("**SMP**") (and ineffective competition):

- In certain regions at the retail-level;
- In a small share of municipalities at the site-level; and
- Nationwide for roaming services for coverage.

As a result, ICASA is proposing the following remedies on Vodacom and MTN, the two operators designated as Tier 1 in the auction:

- The monitoring of margins for national roaming, MVNO and APN services, with the potential threat of a referral to the Competition Commission for further investigation of margin squeeze; and
- The monitoring of approval times for site access.

Whilst Vodacom does not agree with these remedies, it does consider that the market review process is the most appropriate and legally competent, way of addressing any competition concerns. A key advantage of this process is that the suitability of the market review remedies can be re-assessed every 3-5 years. This is important because, as demonstrated by recent years in South Africa, both the evolution of mobile markets and competition in mobile markets can change quickly. In contrast, the spectrum licences are awarded for 20 years.

2. Tier 1 operators will likely suffer from unreasonable discrimination relative to Non-Tier 1

Under ICASA's latest proposed auction design, there is a high chance that Tier 1 operators will suffer from unreasonable discrimination. This is primarily due to a combination of the proposed coverage obligations and the design of the opt-in round.

An additional issue is the site access obligations imposed on Tier 1 operators.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

2.2 Tier 1 operators risk being prevented from competing effectively

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

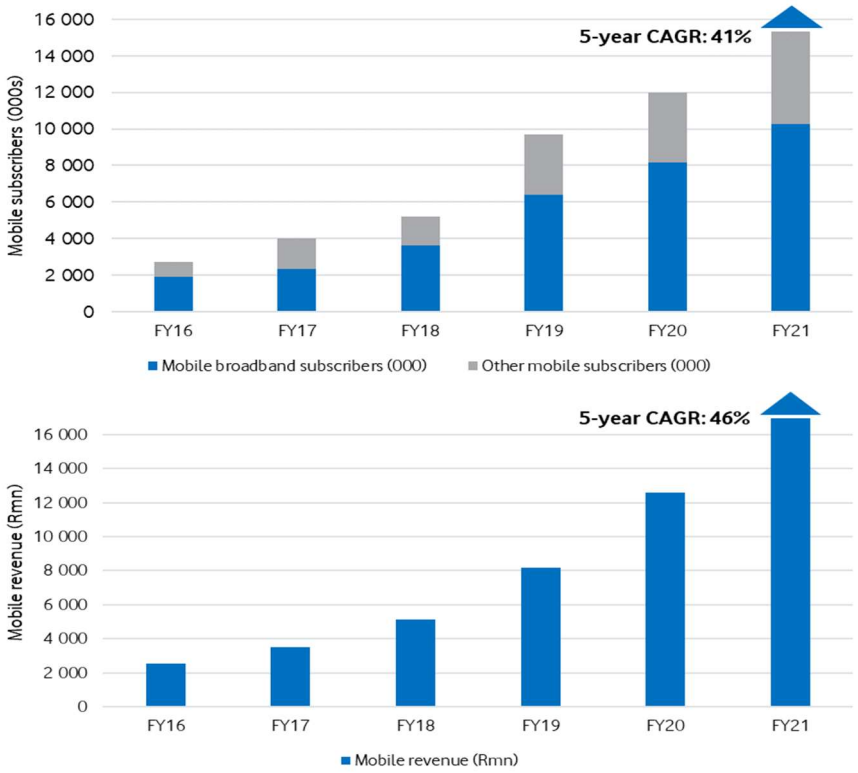
3. Telkom should not be viewed as a smaller operator that requires significant support

As shown by the Figures below, Telkom has managed to achieve impressive growth in the mobile market over a sustained period of time. When looking at the past 5 years, Telkom has grown at a rapid pace[46]:

- Its mobile subscriber base has grown from 2.7m to 15.3m between FY2016 and FY2021; and
- Its mobile revenues have grown from R2.5bn to R16.9bn between FY2016 and FY2021.

[46] Telkom's mobile business also achieved significant growth between FY2015 and FY2016 (Source: Telkom SA SOC Limited - Group Provisional Annual Results for the year ended 31 March 2017)

Figure 9: Telkom's impressive growth between FY2016 and FY2021



Source: Analysis, based on Telkom SA SOC Limited Group Annual Results for the years ended 31 March 2018, 31 March 2021

Telkom's current mobile market share stands at ~15%. Telkom benefits from a number of strengths, including by far the largest fibre network and an extensive site footprint. Telkom also benefits from a competitive market for national roaming services. It now has roaming agreements with both Vodacom and MTN (Telkom recently signed the agreement with MTN) and can easily switch traffic between the two hosts depending on who provides Telkom with the best offer. As a result, Telkom has significant bargaining power when negotiating the terms of access for roaming services. Telkom would therefore also be likely to indirectly benefit from the high coverage obligations that Tier 1 operator would face (i.e. 97% and 99.8%)

Telkom has achieved its impressive growth despite not having access to low frequency spectrum. [redacted]

4. ICASA's proposed support to smaller operators is out-of-line with international precedent

Regulators often don't reserve any spectrum for new or late entrant operators (although some form of spectrum caps is very common). In other countries, there are some examples of regulators having provided support to new/late entrant operators as part of the auction process. However, the level of support provided is typically much lower than ICASA is proposing. And, in most cases, regulators have only provided support to one operator. In contrast, ICASA is in effect providing support to three operators:

- Two operators in the opt-in round; and
- The WOAN.

In 2018, BEREC reviewed a wide range of spectrum auctions in Europe, and concluded that:

> *"Spectrum was reserved only in a few cases and concerned the 700, 800, 900, 1800 or 2100 MHz bands"*[47]

In Annex A, Vodacom shows that in many countries, regulators have not set aside any spectrum for new entrants. Where regulators have reserved spectrum for new/late entrant operators, it has typically only been for a single operator and with less spectrum set-aside than ICASA is proposing.

E. The proposed auction design would likely undermine ICASA's own objectives

Whilst Vodacom recognises that ICASA faces trade-offs between its different ECA objectives, Vodacom considers that ICASA has placed insufficient weight on the efficient use of spectrum, the universal provision of electronic networks and services, and the promotion of consumer interests. Meanwhile, Vodacom considers that ICASA's proposed auction design is likely to actually distort competition rather than promote it.

1. The efficient use of spectrum

ICASA has placed insufficient weight on the efficient use of spectrum in its auction design. When trying to demonstrate that it is ensuring that spectrum is used efficiently, ICASA simply states that:

> *"The pre-qualification criteria will ensure that spectrum will be assigned to licensees that will value it most. In terms of the proposed licence conditions, licensees that do not fully make use of the spectrum within 5 years of the issuance of the licence, will be required to share it."*

However, ICASA also needs to focus on the efficient use of spectrum when designing the opt-in round, obligations and the main auction, rather than just when considering the pre-qualification criteria and spectrum-sharing provisions. The more spectrum that is made available in the opt-in round, the more it is moving away from a market-based mechanism for assigning spectrum (as Vodacom and MTN are excluded from the opt-in round).

The outside-in obligation is also likely to seriously undermine the efficient use of spectrum. As a result of the outside-in obligation, valuable spectrum is likely to go unused in urban areas for some time. In addition, as a result of the low coverage obligation of 80% for Non-Tier 1 operators, valuable spectrum is likely to be unused in rural areas for the duration of the licences of 20 years.

2. The universal provision of electronics networks and services

[redacted]

[47] BEREC report on practices on spectrum authorization, award procedures and coverage obligations with a view to considering their suitability to 5G" (6 December 2018)

[redacted]

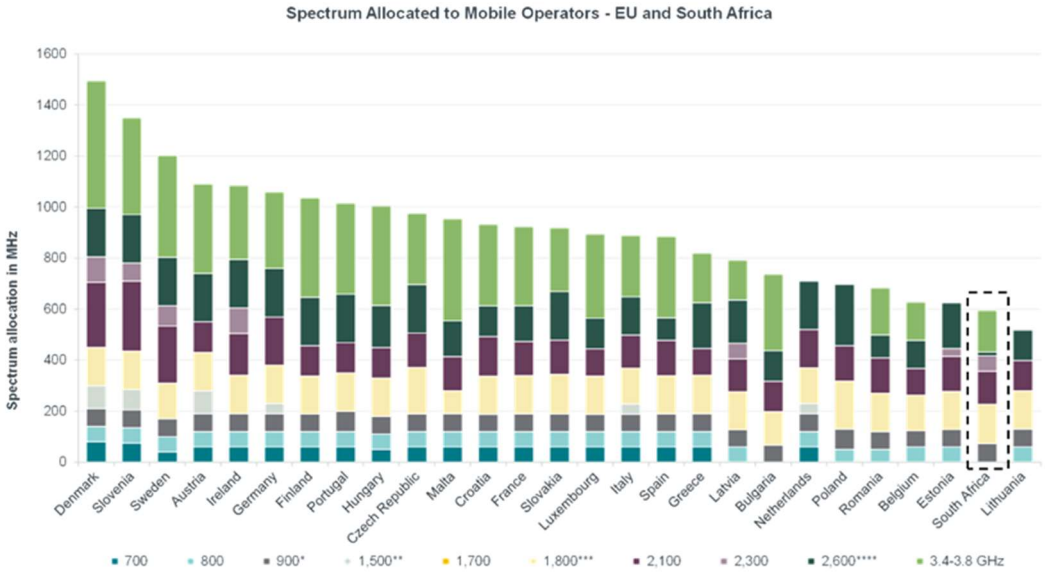
3. Promoting the interests of consumers

ICASA will not maximise the consumer benefits from the assigned spectrum if competition is distorted, spectrum is not used efficiently, and the universal provision of electronics networks and services is undermined. ICASA has itself recognised that there is a spectrum shortage in South Africa, and that this is detrimental to competition in mobile markets and to consumer outcomes (particularly prices).

ICASA acknowledges spectrum shortage and the detrimental impact on consumers

As the Figure below illustrates, there is relatively little spectrum assigned to the mobile industry in South Africa compared to European countries, which limits the mobile operators' capacity and impacts the quality of their service.

Figure 10: Spectrum allocated to Mobile Operators – EU and South Africa



Source: Source: Telegeography

ICASA also recognises this. In its MBSI Discussion Document, ICASA clearly states that operators in South Africa have suffered from a lack of spectrum:

> *"South Africa has assigned relatively little spectrum for mobile use compared to international benchmarks … South Africa is well behind the leading countries when it comes to assigning spectrum for mobile broadband, having assigned about half the spectrum compared to the UK for example, and with* ***an extremely low assignment per operator****."*[48] [Emphasis added]

[48] ICASA (2019) Discussion document on the market inquiry into mobile broadband services in South Africa

Access to additional spectrum could improve network quality i.e. capacity and coverage, and lower retail prices. In particular, it could:

- Reduce the network costs required to achieve a given level of network quality and coverage, which would enhance the incentive and ability of operators to expand coverage and add extra capacity layers to offer higher speed services.

- Alleviate capacity constraints as a result of the increased investment in capacity and coverage set out above. With higher capacity, operators would be able to adopt a more aggressive pricing strategy and to acquire more customers (as Telkom currently does given its abundance of capacity)[49]. More spectrum will enhance all operators' ability and incentive to reduce prices[50].

- As prices per MB decline and speeds and quality improve, consumers would be willing to migrate to the latest technologies - 4G and later 5G, and to consume more data. This would have a positive effect for the economy overall[51].

ICASA itself acknowledges that higher spectrum assignments are associated with lower mobile prices and potentially higher speeds:

> *"Higher levels of spectrum assignment are also significantly correlated with lower prices [...] Finally, higher speeds are associated with lower prices which may be a result of higher volumes driving scale economies. There is therefore some support for the contention that spectrum assignment is associated with lower prices."*[52]

Nevertheless, ICASA seems to be comfortable with major risks of inefficient spectrum assignment, and it is also delaying operators' the ability to address capacity constraints through the utilisation of 700MHz/800MHz spectrum in urban areas through the outside-in obligation. The inefficient spectrum assignment is likely to have an adverse impact on consumers, as discussed below.

The outside-in obligation has a significant impact on customer welfare

The ideal way to increase capacity and achieve maximum efficiency would be via deployment of all the new IMT spectrum in all areas. However, the outside-in obligations would prevent Vodacom from rolling-out 700 and/or 800 MHz spectrum out in urban areas as soon as the spectrum becomes available. This will amplify current congestion and further lead to a significant deterioration in the quality of service for its customers, elevating poor customer experience and increased churn.

[redacted]

[redacted]

Furthermore, the prohibition to deploy sub 1GHz spectrum is in conflict with ICASA's and the EC Act's (section 2(e)) stated objective to ensure efficient use of the radio frequency spectrum. This may lead to an increase in the cost of delivering communication and hamper the further reduction of prices.

[49] See for example Telkom SA SOC Ltd Annual Results Presentation for the year ended 31 March 2021
[50] This is because all operators have an incentive to price in a way that uses up their network capacity, whilst maintaining a quality of service that is consistent with how they position themselves in the market
[51] This is discussed in more detail in Section E below
[52] ICASA (2019) Discussion document on the market inquiry into mobile broadband services in South Africa

F. Vodacom's proposed way forward for ensuring that the objectives of the ECA are met in a non-discriminatory way

In light of the material flaws in IM2, Vodacom has developed a set of proposals that it considers would ensure that ICASA could better achieve the objectives of the ECA in a non-discriminatory way. Vodacom is not proposing to remove all support for Non-Tier 1 operators. However, the level of support proposed by ICASA is excessive, and therefore risks undermining ICASA's objectives for the auction.

1. Coverage obligations

1.1 All operators who acquire low frequency spectrum should face a 99% population coverage obligation

As set out in Section B.2, the 80% coverage obligation imposed on Non-Tier 1 operators imply minimal additional costs, while Tier 1 operators will face significant additional costs from the 97% coverage obligation (and 99.8% for the Coverage Lot). This provides an unfair advantage for Non-Tier 1 operators and undermines the ECA objective for ICASA to ensure that spectrum is used efficiently.

Vodacom would propose that the coverage obligation on all operators who acquire low frequency spectrum should face a 99% population coverage obligation (with 5Mbps throughput). This would ensure a more efficient use of spectrum, with more SA consumers being able to face a choice between infrastructure based mobile competitors. Tier 1 operators should be required to meet the 99% coverage obligation 5 years after the digital migration process has been completed. In contrast, Non-Tier 1 operators should be given a longer period of time to achieve it, after the digital migration process has been completed to meet this obligation. This additional time for Non-Tier 1 operators is to reflect the fact that Non-Tier 1 operators may be starting from a lower (but still relatively high) level of coverage. To help make the coverage obligations more achievable, operators should be allowed to share the obligations, including spectrum sharing and geographical split, as this will facilitate the speed of roll-out and reduce the costs.

1.2 The Coverage Lot

Vodacom supports ICASA's objective to use the auction to support the achievement of increased connectivity throughout SA, through a coverage obligation. However, operators need to have similar obligations in order to avoid distorting competition. Furthermore, the coverage requirement needs to be set at a reasonable level - as set out in Section B.2.2, the 99.8% coverage obligation on the Coverage Lot is excessive and is not supported by ICASA's own benchmarking analysis.

Vodacom considers that the coverage obligations should be designed the following way:

- [redacted]Two 2x10MHz sub-1GHz lots should be created, with a 99% population coverage obligation to be achieved within five years from the time the spectrum is fully available nationally, with a 5Mbps single-user throughput at the edge of cells (as defined in the 2020 ITA). [redacted]

- Any operator securing sub-1GHz spectrum in the auction other than these two lots, should face an initial coverage obligation at 80% of population (with also the 5Mbps single-user throughput obligation) to be achieved within five years from the time the spectrum is fully available nationally. This should increase over a period of another 3 years to 99% of the population, recognising the lower level of initial coverage of the operators likely to acquire these blocks, but also recognising the need for coverage to customers of all operators.

- The reserve price for the early-delivery (5 years from national availability) 99% coverage blocks should be set at an appropriate discount to the other blocks, reflecting the incremental cost of achieving the 99% coverage obligation much earlier.

- All operators obtaining low frequency spectrum should be allowed to achieve coverage obligations through shared roll-out, including spectrum sharing and geographical split, as this will facilitate the speed of roll-out and reduce the costs.

- The additional 0.8% coverage at 5 Mbps should be achieved by the consideration of a USAF that could be delivered by all operators winning low frequency spectrum.

In the event that ICASA maintains a separate Coverage Lot, it should have an appropriate discount when compared to other Lots

[redacted]

To enable efficient price discovery during the auction, ICASA should set the reserve price for the Coverage Lot based on the differential in costs of achieving the Coverage Lot obligation relative to the 97% obligation proposed by ICASA for the other Tier 1 operators using its avoided cost model (for a Tier 1 operator).

In the event that ICASA maintains a separate Coverage Lot, it also needs to have 8 eligibility points

ICASA has still proposed to give the Coverage Lot only 4 eligibility points, which is the same number of eligibility points as the lots of 2X5MHz of low frequency spectrum without the enhanced coverage obligation. In justifying this approach, ICASA has ignored the arguments submitted by operators and simply stated that:

> *"The eligibility and activity rules are designed in a manner that ensures that the bidders are not without spectrum demand at initial stages of the auction and subsequent auction rounds."*[53]

As Vodacom set out in its response to IM1, the Coverage Lot needs to have 8 eligibility blocks, otherwise it will be difficult for operators to switch away from this block. This could deter operators from bidding for the Coverage Lot in the first place.

1.3 Outside-in obligations

As set out above, the outside-in obligation imposes additional costs on Tier 1 operators, distorts competition and undermines the improvements in consumer outcomes that one would expect from the spectrum auction.

Vodacom would recommend that ICASA remove the outside-in obligations. Operators will roll out permanently assigned spectrum in rural areas in parallel with urban areas. More generally, the coverage obligations for all areas will still ensure ICASA meets its objectives within an aggressive timeframe (i.e. 5 years after the digital migration process is complete for Tier 1 operators).

However, if ICASA decides to retain the outside-in obligations, then Vodacom would propose that ICASA clarifies that operators be allowed to start rolling out:

[53] Par 17.3, Reasons Document for the IM2

[redacted]

2. Opt-in round

Vodacom considers that ICASA should modify the opt-in round to reduce the adverse consequences that would arise under the IM2 design of the opt-in round. Vodacom notes further, that as set out in its response to IM1[54], taking into account the current state of the market and international precedent, it considers that, at most, a national wholesaler requires 2X5MHz of sub-1GHz spectrum, combined with suitable mid/high band spectrum, to be credible.

Vodacom is therefore of the view that ICASA should reduce the amount of sub-1GHz spectrum available in the opt-in round to a total of 2X15MHz of 800MHz spectrum across both MSP 1 and MSP 2. [redacted]

This would effectively be consistent with ICASA's conclusion in the Reasons Document that *"2X10MHz of spectrum would be the optimum for the wholesaler's credibility."*[55] And, it would be consistent with the 2020 ITA and IM1.

By reducing the amount of sub-1GHz spectrum available in the opt-in round, 2X35MHz would be available for the main auction, leading to a more efficient allocation of the valuable low frequency spectrum by enabling more of the spectrum to be allocated according to which operators can make the best use of it, to the benefit of South African consumers.

G. Other issues

1. Social obligations

IM2 provides:

> *"A Licensee assigned spectrum through the auction process will be required to zero-rate all the Mobile Content provided by Public Benefit Organisations including .gov.za websites."*

Zero-rating of websites has become the subject of large scale abuse

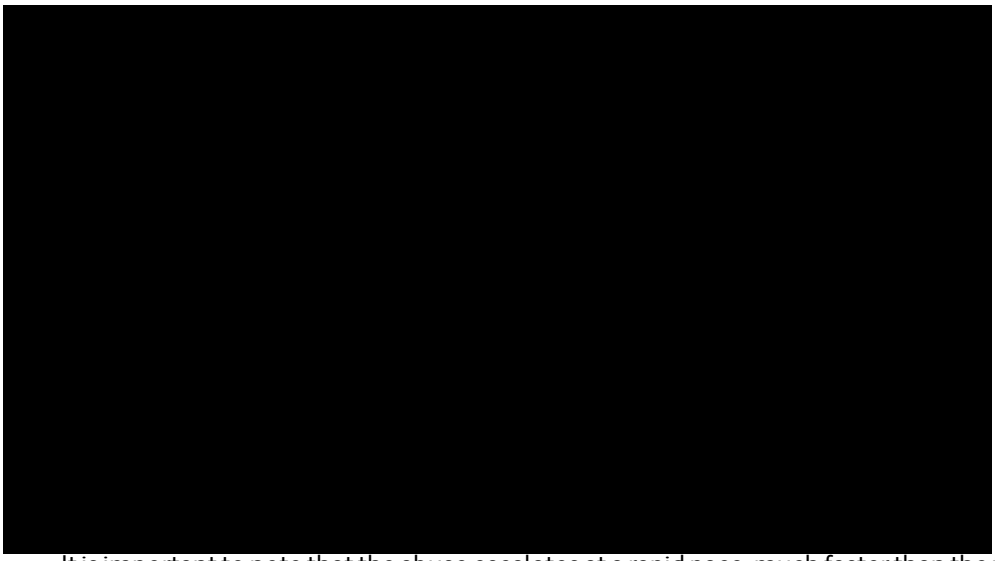
Vodacom puts significant emphasis on its social contract with South Africans, with zero-rating public benefit content forming a key component of this contract. However, Vodacom is concerned that the proposed 20 year obligation to zero-rate may have a number of unintended consequences. Practise has proved that this obligation, while seemingly intended for public benefit, is unfortunately abused for unintended purposes.

The obligation under the COVID-19 Regulations to zero-rate has become the subject of large-scale abuse (e.g. uncharged break-out to non-zero-rated sites). This is a significant issue as the high volume of illegitimate zero-rated content undermines materially the performance of the mobile networks in certain areas. As a consequence, licensees were forced to rapidly introduce emergency measures, whilst the scope, complexity and scale of abuse evolve continuously.

[54] Add xref
[55] 2020 ITA Reasons Document – Competition Assessment, para 88.4.

Abuse mitigation measures are costly, and difficult to plan for in advance. The appeal of large amount of free data provides a strong incentive for abusers to attack all parts of the network, including the distribution system by discarding large number of SIM cards once the abuse has been detected. Secondary markets for 'stolen' data have started to evolve, underpinned by the initial zero-rating of websites.

Effective abuse mitigation requires complex integration between the website owner and operator systems. The figure below shows data usage trends from July 2021 to date.



It is important to note that the abuse escalates at a rapid pace, much faster than the time that traditional regulatory response strategies require to be effective. The abuse vectors are complex and often difficult to unravel before significant losses have been inflicted. Some examples include:

- **Tunnel in Tunnel**. This exploit was encountered within the Vodacom network, across all sites hosted on Cloudflare that did not have a static dedicated IP. Any website, such as Cloudflare, that has proxy capabilities enabled can be exploited. There are freely available instructional videos on Youtube, showing exactly how to use this exploit on Vodacom's network, using the HA Tunnel application on the mobile handset: https://www.youtube.com/watch?v=ln95m99BzJo

- **SNI Spoofing**. Traffic detection is susceptible to fraud when it is done on SNI alone. There are methods to inject incorrect SNIs into the TCP message exchange, thereby allowing any website to be accessed for free, using a single SNI that has been zero rated. Such an exploit is detailed on the following journal article: https://hal.inria.fr/hal-01202712/document

- **HTTP Payload**. Another method that was found to bypass normal charging was using HTTP payload. This vulnerability is exploited in rule definitions that do not have the server-ip-address check. The destination IP of these packets is the fraudulent servers.

- **DNS Tunnelling**. For a subscriber to be able to access a website for free, the DNS request must also be zero rated. However this is often exploited, by using the DNS connection to tunnel general internet traffic. There are several variants to this fraud, the main being signature incomplete HTTP headers sent from the user with a second header added to the first one.

Unfortunately, the trigger for the above-mentioned exploits appears to be the fact that initial zero-rating happens at the point of starting the transaction, but there is no control of the internet backend by any one entity, operator or otherwise. Given the above observations over a very short period of time (18 months), an obligation for the 20 year licence period fundamentally increases unpredictability and uncertainty.

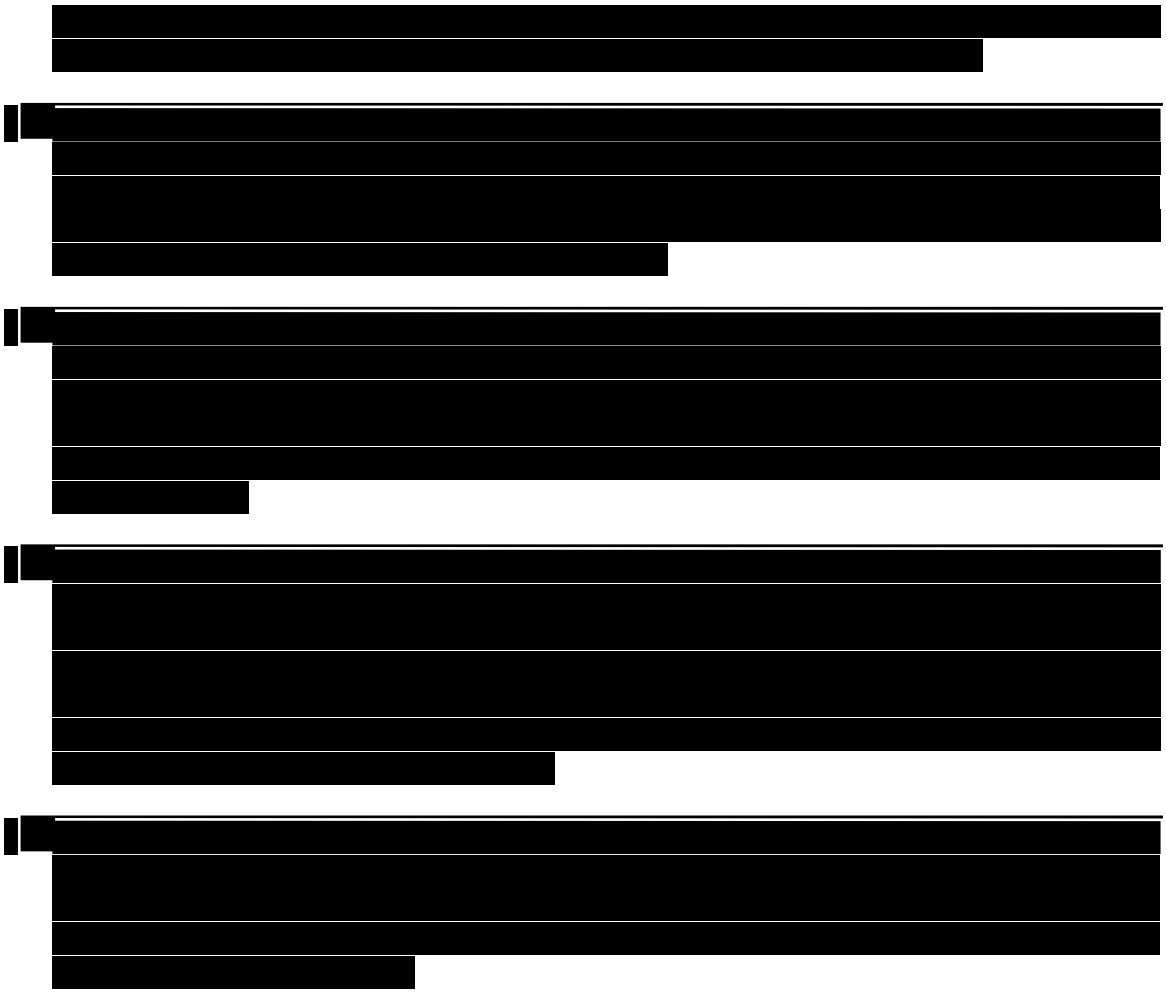
In addition to the risk uncertainty that surrounds zero-rating abuse, the use of the term *"Mobile Content"* is very broad and adds to the uncertainty and unpredictability in terms of assessing the cost and impact of obligations. Such broad definitions could be used in future for purposes that are contrary to the purpose of zero-rating genuine PBO and .gov.za content.

It would be irrational for ICASA to expect that bidders would be able to effectively conclude a reasonable impact assessment, given such broad framing of the zero-rating obligation, combined with the fact that the industry has struggled with zero-rating, a challenge for which there is no clear technology solution. Even if bidders were to conclude such an assessment with their own assumptions, such assumptions are unlikely to be rooted in fact. In such a circumstance, it is quite likely that there will be a large degree of variance in the bidder zero-rating obligation assumptions, leading to potentially one or more bidders bidding in an irrational manner, rendering the auction process ineffective.

Despite all of the above challenges with zero-rating content, Vodacom is keen to find a solution that helps to deliver the widespread social benefits associated with zero-rating content without suffering from all of the challenges that come with the abuse of such content. Unfortunately, the ITA process attempts to include an obligation that both government and industry are still grappling with in terms of effective and sustainable implementation. We propose that ICASA should instead use other processes available to it to engage constructively on a sustainable framework for zero-rating, that maximises social benefit while still ensuring that the networks remain sustainable.

However, should ICASA decide to include its zero-rating obligations within the current ITA, then Vodacom proposes that following control measures be authorised as a minimum:

[redacted]



While the above-mentioned measures, should they be authorised, may currently be effective in containing zero-rating abuse, operators cannot predict all the future methods that may evolve to exploit zero rated services. This leaves the operators vulnerable to methods of abuse that may take months to understand and mitigate, at the expense of network stability and sustainability.

To date the only consistently effective mitigation measure to limit the damage of zero-rating fraud and abuse has been to immediately block zero-rating of abused sites. In order to reduce the impact on legitimate users, while still allowing for stable and sustainable network operators, ICASA is requested to allow operators flexibility to react quickly to zero-rated abuse, with measures that are tailored to their individual abuse circumstances. Failing to do so would render the zero-rating obligation in direct conflict with other licence obligations, such as the obligation to ensure stable and reliable service levels.

It is imperative that ICASA recognise the role that zero-rated website owners have to play in this regard. While for the moment site owners are unaffected by abuser breakout, the regime of zero-rating for social benefit is dependent on an ecosystem of providers and users that leverage zero-rating for the purpose originally intended. In this regard, ICASA should oblige the zero-rated site owners to play a more active role in curbing abuse, including the validation, verification and registration of legitimate users, the blocking of abusers, tighter site security controls, and the sharing of abuser information such that there can be a co-ordinated response to abusers.

International precedent

Internationally, there are many examples of operators zero-rating content outside the scope of an obligation. Since the emergence of COVID-19, there are also an increasing number of examples of operators zero-rating content for public benefit:

- In Greece, operators offered discounts on mobile broadband services, as well as zero-rated applications concerning tele-education.
- In Hungary, operators offered extra data to the residential and business customers; temporarily zero-rating additional services or offering services free of charge, such as educational content and platforms;
- In Ireland, access to healthcare and educational resource websites identified by the Government was zero-rated for all customers where technically feasible.
- In Italy, one operator launched a 12 moths zero rating offer which allowed students to browse freely on the main e-learning platforms.
- In Norway, one mobile ISP introduced temporary zero-rating of official websites dedicated to information related to COVID-19.

Importantly in all of these examples, operators voluntarily chose to zero-rate the public benefit content, rather than its being a regulatory requirement. The zero-rating of the public benefit content is also temporary in nature. In fact, the Czech regulator (CTU) clearly stipulated that the zero-rating of the public benefit content had to be temporary in nature:

> *"Regarding zero-rating, in the early phase of the pandemic, CTU expressed positive attitude towards the proposed zero-rating of access to government website and sites officially dedicated to COVID-19 (by all MNOs). CTU advised the MNOs that they should agree on clear rules on which websites this would be applied and under which conditions. CTU also declared that the practice should be only temporary (during the time of crisis) and consumers should be well informed about it."*

2. Empowerment provision for the industry

ICASA states that:

> *"A licensee would have to, within 12 months of being issued with a radio frequency spectrum licence, reach a Level 1 contributor (BBBEE status) in terms of the Codes of Good Practice, applicable to the ICT Sector, published in terms of Section 9 (1) of the BBBEE Act and maintain such status for the period of the licence."*

Vodacom supports strongly ICASA and the Government's broader objectives to promote broad-based black economic empowerment in accordance to the Codes of Good Practice - ICT Sector Code, issued in terms of Section 9.1 of the BBBEE Act. However, it is concerned that BBBEE requirements as formulated in IM2 are not practical nor reasonable. Vodacom also believes that the BBBEE requirements should be specified in greater detail and clarity, to avoid any ambiguity for bidders.

2.1 The requirement to achieve Level 1 status

Vodacom is concerned that it and other licensees would be required to achieve Level 1 status within 12 months. While Vodacom presently has a Level 1 BBBEE status (and has achieved the same status for the past 3 years), Vodacom is concerned that ICASA seeks to require licensees to achieve and maintain a Level 1 BBBEE status within 12 months of being issued with a radio frequency spectrum licence and to maintain that status for the duration of the licence.

Vodacom does not consider this to be practical or reasonable. Level 1 BBBEE status is the highest status that can be achieved in terms of the ICT Sector Codes and is substantially more difficult and costly to achieve than Level 4 (being the pre-qualification requirement). In the period 2017 to 2021, ICASA undertook an extensive enquiry into the equity ownership by historically disadvantaged groups ("**HDG**") and the application of the ICT Sector Code in the ICT Sector, which culminated in ICASA publishing the Regulations in respect of the Limitations of Control and Equity Ownership by HDGs and the Application of the ICT Sector Code in Government Gazette No 44382 on 31 March 2021 ("**HDG Regulations**").

The HDG Regulations, which apply to the holders of individual licences and class licences issued in terms of the ECA, require the holders of individual and class licences to have a minimum Level 4 BBBEE status. ICASA conducted market studies and detailed engagements with stakeholders in the ICT Sector at the time to arrive at the ownership and BBBEE status requirements prescribed in the HDG Regulations.

ICASA has not provided any reasons for imposing the substantially higher Level 1 BBBEE status in IM2. The imposition of the Level 1 requirement stands in stark contrast to the Level 4 BBBEE status required under the HDG Regulations, which ICASA determined 9 months ago as being appropriate for individual and class licensees in the ICT Sector after undertaking substantial enquiries. We therefore do not believe a Level 1 BBBEE status requirement within 12 months from awarding of spectrum licence, and obligation to maintain such status for the period of the licence is rational or reasonable. Although it is Vodacom's goal to achieve and maintain the highest Level BBBEE status possible, given the outcome of the enquiry into the equity ownership by HDGs and the application of the ICT sector Codes, the minimum requirement for spectrum licence should remain the same as Individual ECS and ECNS Licences i.e. Level 4.

2.2 The time-frame and scoring to achieve Level 1 BBBEE Status

As already set out above, IM2 requires that a licensee meet the Level 1 BBBEE status within 12 months after the issue of the licence. If a licensee pre-qualifies using the equity target of 30% and Level 4 BBBEE status, the licensee will, notwithstanding best endeavours, be unable to attain a Level 1 within 12 months. In order to substantiate this, we have set out an explanation of the timing for the measurement of a company's BBBEE status in terms of the ICT Sector Codes, and an explanation of Vodacom's journey to achieve Level 1 BBBEE status.

Time-frame

In terms of the ICT Sector Codes, a BBBEE status is attained after a company's financial year end and against a company's last audited financials. This is when a BBBEE verification agency will conduct a BBBEE verification and issue a BBBEE verification certificate confirming the company's BBBEE status.

BBBEE measurement is retrospectively applied in that it is measured against the last audited financials and the initiatives that were implemented during that financial period. Whilst a licensee will track its performance towards a BBBEE level based off its projected financials for the year concerned, the actual attainment of the desired level is only realised after the financial year end has been audited. In some instances where the Nett Profit After Tax has exceeded the budget forecast, the licensee could realise lower than forecasted results for the Supplier Development, Enterprise Development and Socio-Economic Development elements of the ICT Sector Codes, since these 3 elements are measured against target spend of a total of 6,5% of Nett Profit After Tax.

Figure 13: Time frames for BBBEE certificate

Licensee	FY end	BBBEE cert issue Date	Re-issue date	Expiry date
MTN	31-Dec	03-Jun-21		02-Jun-22
Telkom	31-Mar	06-Jul-21	12-Jul-21	05-Jul-22
Vodacom	31-Mar	28-May-21		27-May-22

Furthermore, where a company is listed, the requirement under Section 13G of the BBBEE Act is for the listed company to submit its BBBEE verified data within 90 days from the end of its financial period.

It must be noted that a company can request a re-issue of its BBBEE verification certificate if evidence against spend claims is received after the original issue date of the BBBEE certificate, where such will improve the score or level of the entity. In this instance, the original expiry date remains in force.

Therefore, the expectation of licensees retaining or attaining a Level 1 within 12 months from the granting of a spectrum license is unreasonable given the timelines it will take for such licensee to determine its BBBEE result. Any requirement for an improvement in a licensee's BBBEE status from that which a licensee has at the date of issue of its licence should be based on the BBBEE verification process as outlined in the ICT Sector Codes and not with reference to the date of issue of the licence.

Also, since BBBEE is retrospectively measured, a company cannot be held liable for financial factors outside of its control (such as the effects of Covid 19), which could decrease its level of scoring even though it had implemented all of its intended initiatives for that year based off its forecasted financials. The BBBEE requirements in the ITA should be clear that a licensee will not be penalised for its failure to achieve or maintain a BBBEE status as a result of factors beyond its control.

Impact of amendments of codes on BBBEE Levels and Vodacom's timelines to achieve BBBEE Levels

In Annex B we set-out the challenges with achieving higher BBBEE status levels generally and the unreasonableness to expect a licensee to achieve Level 1 BBBEE status within 12 months. We explain the changes to the applicable BBBEE Codes of Good Practice since 2007 together with the timing and costs associated with Vodacom's achievement of different BBBEE status levels since then.

Vodacom remains of the view that the timeline and significant costs incurred to achieve Level 1 BBBEE status make the BBBEE requirements set out in the IM2 unreasonable and impractical for licensees. The BBBEE requirements should also be based on the ICT Sector Codes as they currently are so that the licensees have certainty that they can achieve the BBBEE requirements for the duration of the licence. If the ICT Sector Codes or BBBEE legislation changes, the licence conditions should be flexible to allow ICASA and the licensees to engage with each other to determine how such changes may be addressed by the licensees.

Vodacom therefore proposes that the BBBEE requirements in paragraph 13 of IM2 should be amended to provide for the following:

- The BBBEE status requirement should be the same as per the HDG Regulations i.e. a Level 4 BBBEE status;

- All prescribed BBBEE requirements should be based on the ICT Sector Codes in their current form and must factor in any future amendments to the ICT Sector Codes or BBBEE legislation. Thus, the BBBEE requirements should be defined with reference to the ICT Sector Codes and the BBBEE Act

as at the date of issue of the ITA and as amended from time to time. However, if the ICT Sector Codes or BBBEE legislation is amended such that the achievement of BBBEE requirements may become more onerous for the licensees, licensees must be given a clear and reasonable time period within which to achieve the prescribed BBBEE requirements through the implementation of an empowerment improvement plan. Please refer to Vodacom's suggested changes below.

- However, if ICASA maintains that the Level 1 BBBEE status should be achieved (and if this is supported by clear rationale), licensees should be afforded a clear and reasonable time period within which to achieve Level 1 BBBEE status through the implementation of an empowerment improvement plan. As indicated above, it is costly to achieve Level 1 BBBEE status and will require significant time to do so.

- The following amendment as a minimum to the requirements is proposed:

  - A licensee which has not attained level 1 BBBEE status on application, must, within 3 months of being issued with a radio frequency spectrum licence, present ICASA with a Board approved Empowerment Improvement Plan, outlining the empowerment initiatives that will lead to the attainment of a BBBEE Level 1. The Empowerment Improvement Plan must indicate the period in which the Licensee envisages to achieve the BBBEE Level 1 which period may not exceed 5 years.

  - The same requirement will apply in the instance where the ICT Sector Codes are amended in a manner that materially affects the ability of a licensee to achieve a BBBEE Level 1 and as such, a licensee's BBBEE status drops below Level 1. In such a case the Licensee must, within 3 months of the decrease, present ICASA with a Board approved Empowerment Improvement Plan, outlining the empowerment initiatives that will lead to the attainment of a BBBEE Level 1. The Empowerment Improvement Plan must indicate the period in which the Licensee envisages to achieve the BBBEE Level 1 which period may not exceed 5 years.

- Licensees should also not be penalised for their inability to obtain and maintain the BBBEE requirements due to changes beyond their control.

2.3 Adding clarity to the BBBEE requirements

Further to the above, Vodacom considers that it is important to ensure that the BBBEE requirements to be imposed on licensees are as clear and unambiguous as possible. In this regard, we note that clause 11.3.3 of the IM2, relating to open access obligations, provides as follows:

> *"A Licensee assigned spectrum through the auction process will be required to provide open access to MVNOs which must have 51% ownership held by persons from Historically Disadvantaged Persons…"*

Vodacom has set out, above, its view that this requirement should not be included in the final ITA, given ICASA's findings, in its MBSI, on the state of competition in the MVNO market. Nevertheless, if this requirement is retained, it is important that it is clarified with reference to the HDG Regulations. That is, Vodacom recommends that, if it is kept, this clause should read as follows:

> *"A Licensee assigned spectrum through the auction process will be required to provide open access to MVNOs which must have 51% ownership held by persons from Historically Disadvantaged* ***Groups or Black People as measured in terms of the HDG Regulations****… "*

Similarly, Vodacom considers it is important to clarify, in paragraph 13.1 of IM2, that ICASA is acting in accordance with the ICT Sector Codes, in order to eliminate any ambiguity in this requirement. That is, Vodacom recommends that paragraph 13.1 be supplemented to read as follows:

The obligations herein are intended to promote broad-based black economic empowerment in accordance with the Codes of Good Practice - ICT Sector Code, issued on 7 November 2016 in terms of Section 9(1) of the BBBEE Act, in addition to what is prescribed in terms of Regulation 7 of the Radio Frequency Spectrum Regulations, 2015. The BBBEE requirements in Regulation 7 of the Radio Frequency Spectrum Regulations, 2015 will be measured, mutatis mutandis, in accordance with the Regulations in respect of the Limitations of Control and Equity Ownership by Historically Disadvantaged Groups and the Application of the ICT Sector Code, published in Government Gazette No 44382 on 31 March 2021.

3. 40MHz of 2.3GHz should also be included in the auction

Vodacom considers that the 2360-2400MHz band should also be awarded as part of the auction process. In its 2020 ITA, ICASA stated that it would not auction this band as part of this auction as it first needed to conduct a feasibility study to consider the migration of fixed services out of this band and to amend the relevant licenses that do not conform to IMT services.

3.1 The 2360-2400MHz spectrum is clearly usable for IMT services

While this process may still be underway, Telkom itself believes that the 2360-2400MHz spectrum is usable for IMT services, as it has applied to ICASA to have its 2300-2360MHz IMT assignment extended to 2300-2387MHz through a licence conversion of the downlink part of its fixed link assignment. This therefore suggests that Telkom itself no longer perceives a challenge with migrating the fixed links from its assignment of 2307-2387//2401-2481MHz.

Even ICASA, through its provisional spectrum assignments on 26 November 2021 has recognised that the 2360-2400MHz spectrum is usable for IMT services.

Vodacom notes that in its IM1 submission, Telkom has now claimed an additional 27MHz of IMT spectrum in the 2.3GHz band (an increase from 60MHz to 87MHz).

3.2 The 2360-2400MHz spectrum should be awarded through a competitive process

Telkom seems to confuse re-farming of spectrum among different technologies with assignment of spectrum for a specific service use. The latter is not "re-farming". Telkom is seeking a new assignment of TDD spectrum within the 2300MHz band. This can only be lawfully achieved under Regulation 7 of the Spectrum Regulations, which requires this to be done via a competitive process, such as an auction.

The upcoming auction represents an ideal opportunity to assign the 2360-2400MHz spectrum

Even if Telkom were to argue that it is still in the process of migrating the legacy fixed services out of the 2307-2387//2401-2481MHz range, the current process provides an ideal opportunity for ICASA to make such spectrum available for assignment, ensuring that the remainder of the 2300MHz band (not currently assigned as TDD to Telkom) is available for the broader benefit of South African consumers. Otherwise, by not assigning 2300MHz in the upcoming auction, there is a risk that Telkom monopolises the entire band before ICASA has a chance to run a future auction process for the band.

Allowing Telkom to use the 2360-2400MHz spectrum for IMT services without its having been assigned this spectrum through a competitive process would have adverse consequences

Should Telkom's application be successful, it would further prejudice other operators in the market. Telkom currently has far more IMT spectrum both in absolute terms, and on a per subscriber basis, than any other operator in South Africa (as illustrated below). Telkom has enjoyed the privilege of dominating the 2300MHz band in South Africa for some time, with little alternative capacity assignments being made available to other operators. Should ICASA expand this privilege, it will further entrench Telkom's spectrum dominance, potentially with irreversible consequences.

Telkom's large holdings of IMT spectrum allow it to provide uncapped data services with an above average quality of service. Neither Vodacom nor Cell-C can currently replicate Telkom's uncapped offer (MTN has only recently offered an uncapped service), where Telkom out-prices its competitors for data – this is a direct result of Telkom's significant spectrum holdings.

Indeed, it is clear that Telkom wishes not only to expand its 4G spectrum advantage, but also to create a platform for an unassailable 5G advantage. The 2300MHz band is a sought-after band. Globally, three auctions were held in Q1 2021 and 54 known LTE networks are operational in this band as of the same time period. This is illustrated in the Figure below. The ecosystem is mature and has amongst the highest number of supported terminals when considering available TDD bands. The band provides a good balance between coverage and capacity. The GTI group considers the band to be the "golden mid-band" due to its balance characteristics.

[redacted]

In areas where Telkom deploys its network, Telkom will be able to achieve throughputs unattainable by any other operator, and will also be able to provide superior in-building coverage, even when compared to future capacity bands that may be obtained through ICASA's proposed ITA.

Telkom's 2300MHz band monopoly does not only provide it with the advantage of being able to offer a better quality of service to its customers, but also provides it with the ability to service more users in the same band. A classic example of how devices are compatible to this 2300MHz band is below:

[redacted]

[redacted]

- This shows that Band n40 is not a niche band in South Africa and that other operators like Vodacom can benefit from having an assignment within the band, as the ecosystem has started to mature within South Africa.

In most cases, countries that allow assignments of 60MHz or more in the 2300MHz band either prevented the assignee from acquiring further spectrum in a different band, or the spectrum was assigned for legacy technologies, and not for IMT use.

As an example, in Saudi Arabia, STC was not allowed to obtain 2600MHz to help balance the assignments between the various operators. Such practices by regulators are not uncommon and are intended to ensure that there is a reduced incentive for operators to dominate a single band.

Figure 14: STC not allowed 2600MHz

The trend within Africa is that (in countries such as Ghana, Tanzania and Ivory Coast) at least three operators are assigned spectrum within the 2300MHz band with holdings of 30MHz each. This suggests that regulators received interest from multiple operators, and since there was competitive demand for the band, tried to make equal assignments to the interested MNOs so as to avoid a monopoly of the band, even when considering the legacy WiMax allocations.

4. Rain's 3.7GHz spectrum should be included in the spectrum holding calculation

IM2 provides that:

> *"The Authority acknowledges the possibility that bands such as the 3600 – 3800 MHz band could be identified for IMT by future ITU WRCs. Should the 3600 – 3800 MHz band be allocated to the Mobile Service and identified for IMT, the Authority will undertake a process to assess*

the spectrum assignments in the band to ensure that the spectrum cap is not exceeded by all licensees."

Vodacom considers that Rain's 3.7GHz spectrum should be included in the calculation of the overall spectrum caps (and any top-up requirements if Rain participates in the opt-in round).

If ICASA excludes Rain's 3.7GHz spectrum from the caps, then it may result in an unfair outcome. The key issue is that Rain's 3.7GHz spectrum is being used as a direct substitute for some services that will be offered using the IMT spectrum to be assigned through this process. ICASA may well allow Rain to convert its 3.7GHz spectrum to IMT spectrum when ICASA reallocates this band. ICASA's proposed approach would provide Rain the privilege of still potentially retaining its current IMT-like service in the 3.7GHz band, while bidding for a large amount of additional IMT spectrum in the current ITA process. This is a privilege that no other incumbent operator has, and grants Rain the opportunity to bid speculatively in the auction, potentially driving up prices in the auction, knowing that it has a fall-back plan.

If ICASA does not follow Vodacom's guidance, then it should provide a clear indication in the ITA as to how it intends to treat the spectrum caps if certain bands (e.g. the 3.7GHz) are converted to IMT services in the future. In particular, it needs to:

- Specify the caps that it will apply until a further open, fair and competitive IMT assignment process is run when reallocating bands.

- Clearly indicate the process it will follow to migrate legacy services out of newly allocated IMT bands.

- Provide clear guidance on the timeline for migration of legacy services out of IMT bands, such that legacy service operators don't hoard the band, through practices such as growing their legacy customer base in anticipation of IMT license conversion.

Should ICASA not provide such direction as indicated above, there is a risk that the practice of speculative acquisition of non-IMT bands would become widespread, making a mockery of ICASA's attempts to assign IMT spectrum on a competitive basis.

5. Spectrum Sharing

Vodacom notes that ICASA has maintained its spectrum sharing obligation in IM2:

"The Authority recognises the need for the radio frequency spectrum to be shared with ECNS licensees in areas that spectrum is not utilised to stimulate competition, promote SMMEs and cooperatives, and ensure that the radio frequency spectrum is used efficiently in accordance with section 2 (f), (p) and (e) of the ECA, respectively. The Authority is in alignment with the submission from APC and has accordingly included the spectrum sharing obligation in the second IM."

As Vodacom set out in its response to IM1, Vodacom disagrees with the obligation to share spectrum (5 years after the digital migration process has been completed). To promote investment certainty, any operator assigned spectrum in the auction, and which has met the coverage and throughput obligations, must be allowed exclusive use of such spectrum over the full 20 year license period. In particular, operators should not be forced to surrender or share spectrum or be subject to any other process that would deny them exclusive use of the spectrum. It is typically the case that operators are unlikely to deploy all bands of their spectrum in all areas of the country.

6.1 Tension in ICASA's obligations

There is a tension between ICASA's obligations given that:

- Operators will face ambitious coverage and throughput obligations, which will result in a specific roll-out pattern over the initial 5 years for those operators that acquire sub-1GHz spectrum. Under ICASA's proposals, Tier 1 operators will face an outside-in obligation that will force them to roll-out the newly acquired spectrum to rural areas (Batch 2/3 areas) first.

- Spectrum has to be shared in areas where spectrum is not utilised.

This tension makes ICASA's proposals irrational. For example, given that ICASA's outside-in obligation is in effect preventing operators from utilising spectrum for a significant period of time in urban areas (Batch 1 areas). This could result in an outcome where opportunistic operators could identify areas not yet covered after the initial 5 year period, and then insist on spectrum sharing.

6.2 Uncertainty created by ICASA's proposals

ICASA indicates that:

> *"The spectrum in the licensing process is to be assigned on a national basis exclusive to the Licensees"*

However, ICASA then states that:

> *"In cases where the spectrum is not fully utilised by the licensee within 5 years of issuance of the Radio Frequency Spectrum Licences, the Authority will initiate the process for the Licensee:*
> - *to share unused spectrum in all areas to ECNS licensees who may, inter alia, combine licensed spectrum in any innovative combinations in order to address local and rural connectivity in some municipalities including by entrepreneurial SMMEs;*
> - *to surrender the radio frequency spectrum licence or portion of the unused assigned spectrum in accordance with Radio Frequency Spectrum Regulations, 2015; and*
> - *the Authority has the power to cancel the issued radio frequency spectrum licence in accordance with the Radio Frequency Spectrum Regulations, 2015."*

The effect of ICASA's forced spectrum sharing obligation is that the period of exclusive use of the spectrum licences could end up being as short 5 years. Such uncertainty may lead to irrational and inconsistent behaviour by bidders, as they each apply their own interpretation of the conditions put forward by ICASA.

Operators typically have a short, medium and long-term planning horizon, which they use to determine the investment into their networks. If operators face uncertainty about their future ability to use spectrum, then this could undermine investment. Such an outcome would surely go against the objectives of ICASA and the government in general.

Mandated spectrum sharing for licensees that have met their coverage obligations would deny those licensees the flexibility to leverage their spectrum assets based on consumer demands and business feasibility. This would amount to a diminishing of their exclusive use rights. If operators are concerned that they may be forced to share spectrum, then this will likely reduce their valuation of the spectrum being assigned.

6.3 Ofcom does not impose spectrum-sharing

During their award process for the 2.3GHz and 3.4GHz bands, Ofcom agreed that spectrum-sharing should not be mandated:

"A11.74 We do not believe that the fact that an MNO is not currently using all of its spectrum or that it has not deployed it at all of its sites necessarily implies spectrum hoarding or an inefficient spectrum allocation. We generally use auctions to allow the operator that has the highest intrinsic valuation for the spectrum to acquire access to it (with competition or other measures, where appropriate). It is up to individual MNOs to decide how they deploy the spectrum that they purchased at auction. For some MNOs, their valuation will be a function of immediate deployment while for others it will be based on long-term deployment plans. In general, the auction outcome should determine which is likely to yield larger benefits for consumers."

6.4 Voluntary spectrum-sharing should be permitted

While ICASA's proposed mandated spectrum sharing has significant disadvantages, Vodacom considers that operators should be allowed to reach commercial agreements to share any assigned spectrum, as this may improve consumer outcomes in terms of the efficient use of spectrum, while still preserving spectrum usage rights and providing operators with certainty.

6.5 There should be a process in place if operators fail to meet their coverage obligations

If for any reason an operator has not met its coverage (and throughput) obligations, then there should be a process for ICASA to engage with the operator concerned. In particular, there should be a notice, a consultation, a hearing and a determination before ICASA can act in terms of enforcing any spectrum-sharing provision. The consultation process may involve ICASA's giving notice when it considers a breach has occurred and providing the operator with an opportunity to remedy the breach or to justify why it has failed to meet the coverage obligation. ICASA should pay particular attention during its consultation to the reasons behind the coverage and/or throughout obligations not being met, which would include a feasibility assessment of providing coverage in areas that have not been rolled out to at that time. This is necessary to prevent speculative and opportunistic operators acquiring spectrum rights, which would detract from ICASA's objective of sustainable networks, built on consistent investment.

6. Sub-national wholesalers should face coverage obligations if they acquire spectrum in the main round

Under ICASA's proposals, sub-national wholesalers have to meet the 80% coverage obligation only if they acquire spectrum in the opt-in round:

"Tier-2 operators that cover less than 80% of the population with IMT services must expand such coverage to at least 80% of the population in general across South Africa, including Batch 1 and Batch 2 areas in accordance with their commercial interest. ***This obligation does not apply to sub-national wholesalers who do not Opt-in for Lots.****"*

Sub-national wholesalers will also not have any throughput obligations under any scenario. Put another way, sub-national wholesalers would be able to acquire low frequency spectrum in the main auction without having to face any throughput or coverage obligations. This could result in the inefficient use of spectrum, as the frequencies allocated to sub-national wholesalers may go unused in large parts of the country.

It is also to be doubted whether ICASA has correctly defined sub-national wholesalers. In the 2020 ITA document, ICASA defines Rain as a sub-national wholesaler, even though their population coverage is far above the 50% threshold.

7. Vodacom disagrees with the MSPs set out by Telkom

In its submission on IM1, Telkom has set out a table of alternative MSPs that it wants ICASA to consider (copied below for reference). Telkom's proposed MSPs differ from ICASA's in two key ways. They include a third MSP (see Portfolio 3), in addition to ICASA's two MSPs, and add 30MHz additional mid/high frequency spectrum to ICASA's two existing MSPs (Portfolio 1 and Portfolio 2).

Vodacom disagrees with Telkom's proposals.

- **First**, it appears that Telkom has proposed the third MSP in response to its view that under IM1, if a licensee acquires sub 1GHz spectrum in the opt-in round, then the licensee cannot bid for any more of such spectrum in the main auction. It therefore proposes Portfolio 3 with 2X2X10MHz of sub 1GHz to *"enable Telkom to achieve parity with MTN and Vodacom in sub 1GHz bands post the auction".*

  But a third MSP is not necessary to achieve this outcome. Instead, IM2 has clarified that Non-Tier 1 operators should be free to acquire additional spectrum in the main auction, even if they acquire the same band of spectrum in the opt-in round. Vodacom also notes that Telkom's suggestion that 2X2X10MHz of sub 1GHz is necessary to achieve parity with MTN and Vodacom is misleading. Both Vodacom and MTN have a significant base of legacy subscribers. This restricts Vodacom's and MTN's ability to re-farm spectrum for more advanced technologies. In contrast, due to its later market entry, Telkom has very few legacy subscribers so it can focus its spectrum holdings on more advanced technologies. Telkom can use its roaming agreements with Vodacom and MTN to serve these legacy subscribers rather than having to use up valuable spectrum.

- **Second**, the amount of spectrum in Telkom's proposed MSPs clearly goes far beyond what operators require to be credible. Telkom claims that this is to reflect the "5G era". It also notes that these updated spectrum portfolios are designed in the 3+1 market advanced by Telkom and therefore are only relevant if ICASA also revises its 4+1 policy – which it shows no sign of doing.

- **Third**, in addition to increasing the absolute amount of spectrum in each MSP, Telkom also increases the "top up" requirement by excluding key bands in the above 1GHz group. This goes against ICASA, who has itself recognised that other mid/high frequency bands (2.3GHz and 3.5GHz) should also be included. In IM2 ICASA noted that: *"When bidding for MSP1 or MSP2, the bidder may bid for and acquire only the smallest amount of spectrum that would "make good" that bidder's MSP, taking into account their existing IMT Spectrum holdings."* IMT spectrum is not limited to 1.8GHz, 2.1GHz and 2.6GHz but also includes 2.3GHz and 3.5GHz.

- **Fourth**, having 3 portfolios in the opt-in round could also reduce competition even further in the opt-in round, which could result in prices that are even further below market values.

H. Auction stage

1. Mock auctions

Based on international best practice, Vodacom would urge that all qualified participants are given access to a practice electronic auction system in order to run mock auctions. This will allow all participants familiarity with the detailed auction rules, and will test for and eliminate any technical problems with accessing the auction system online. Further it provides time for any ambiguities or errors in the implementation of the auction rules to be detected and corrected. At least a minimum of 2 weeks should be granted between access to mock auctions and the live auction; Vodacom note that regulators in the UK and Ireland have typically provided months of such access before recent auctions.

2. Auction location

Vodacom welcomes ICASA's proposal to conduct the auction using an online system and standard Internet browsers. In the event of a bid team emergency (like widespread power outage or building evacuation because of fire or terror alert), Vodacom would advise that ICASA calls a temporary halt to the auction to allow the affected bid team(s) to relocate to back-up facilities. Provision for placement of bids via telephone or secure email using one-time access codes should also be considered, and tested before the start of the auction.

[redacted]

5. Electronic auction format

As mentioned above, Vodacom welcomes ICASA's proposal to conduct the auction using an online system and standard Internet browsers. Vodacom advises that all bidders must be able to observe a log of their own access attempts to the system, and that the round times (and breaks between rounds) are sufficient to allow bidders to switch between their main bidding systems and any back-up systems. In line with the proposal at 15.10.4, a mechanism should be provided to allow a file of each round's bid prices and round results to be downloaded from the electronic system, so that bidders can plan their next bids efficiently. The formats and examples of these files should be advertised to all qualified participants at minimum 2 weeks before the start of the auction,

There is some further welcome clarity in the auction rules for the main stage of the auction, in particular the decision at 15.4 that set percentage increments will be applied for new bids, rather than allowing bidders just to name any price above the current standing high bid (which could lead to very slow progress).

[redacted]

[redacted]

6. Frequency Assignment Phase

Vodacom are still concerned about the complete lack of clarity in how the frequency assignment stage of the auction is supposed to work (15.12.1).

Vodacom has previously advised that a single round of sealed bids with a second price rule would represent international best practice in this area, is quite easy to implement (any provider of EAS will know how to deliver this), and provides the minimum of distortions to the bidding process, because it incentivises all bidders to accurately value and bid the differences in value between each of their assignment options.

I. Areas that require further clarity

[redacted]

[56] Par 11.2.2.1, IM2
[57] Par 11.2.2.1, IM2

[redacted]

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[redacted]

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[redacted]

[redacted]

[58] Par 11.2.2.3, IM2
[59] IM2 Reasons Document, par 9.4
[60] Par 11.2.2.3, IM2
[61] Par 11.1.1, IM2
[62] IM2 Reasons Document, par 10.1

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[redacted]

63 Par 11.1.1, IM2
64 Par 11.1.1, IM2
65 Par 11.2.2.1, IM2
66 Par 11.2.2.3, IM2
67 IM2 Reasons Document, par 9.3
68 Par 11.1.1, IM2
69 Par 11.2.2.1, IM2
70 Par 11.2.2.3, IM2

[redacted]

[71] Par 6.3, IM2
[72] Par 6.4, IM2
[73] Par 15.1.5, IM2
[74] Par 6.4, IM2

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[75] IM2 Reasons Document, par 5.22
[76] IM2 Reasons Document, par 8.9
[77] Par 6.9.1, IM2
[78] Par 6.9.2, IM2

Annex A

Support provided to smaller operators in other countries

Country	Year	Total spectrum auctioned	Total spectrum reserved for new / late entrant operators	Take-up	Spectrum reserved for new/late entrant smaller operators but not taken up
Austria	2010	2x70 in 2.6 GHz 1x50 in 2.6 GHz	-	-	-
Austria	2013	2x30 in 800 MHz 2x35 in 900 MHz 2x75 in 1800 MHz	2x10 in 800 MHz	No take-up	2x10 in 800 MHz
Belgium	2011	2x70 in 2.6 GHz 1x45 in 2.6 GHz	2x10MHz cap 1x45 in 2.6GHz	1x45 won by BUCD BUVA	2x10 in 2.6 GHz
Czech Republic	2013	2x30 in 800 MHz 2x24.8 in 1800 MHz 2x70 in 2.6 GHz 1x45 in 2.6 GHz	2x10 MHz in 800 MHz 2x15.8 MHz in 1800 MHz	No take-up	2x10 MHz in 800 MHz 2x15.8 MHz in 1800 MHz
Czech Republic	2020	2x30 in 700 MHz 1x200 in 3.5 GHz	2x10 in 700 MHz	No take-up	2x10 in 700 MHz
Denmark	May-10	2x70 in 2.6 GHz 1x50 in 2.6 GHz	2x10 1x50	1 smaller operator (Hi3G)	-
Denmark	Sep-10	2x5 in 900 MHz 2x10 in 1800 MHz	2x5 in 900 MHz 2x10 in 1800 MHz	1 smaller operator (Hi3G)	-
Denmark	2012	2x30 in 800 MHz	-	-	-
France	2011	2x30 in 800 MHz 2x70 in 2.6 GHz	-	-	-
Germany	2010	2x30 in 800 MHz 2x25 in 1800 MHz 2x20 in 2.1 GHz 1x19.2 in 2.1 GHz 2x70 in 2.6 GHz 1x50 in 2.6 GHz	-	-	-
Greece	2011	2x35 in 900 MHz 2x20 in 1800 MHz	-	-	-
Greece	2014	2x30 in 800 MHz 2x70 in 2.6 GHz 1x40 in 2.6 GHz	-	-	-
Ireland	2012	2x30 in 800 MHz 2x35 in 900 MHz 2x75 in 1800 MHz	-	-	-
Italy	2011	2x30 in 800 MHz 2x15 in 1800 MHz 1x15 in 2.1 GHz 2x60 in 2.6 GHz 1x30 in 2.6 GHz	-	-	-
Italy	2018	2x30 in 700 MHz 1x15 in 700 MHz 1x200 in 3.6 GHz 1x1000 in 26 GHz	2x10 in 700 MHz	1 new entrant (Iliad) *Merger remedy to maintain 4 MNOs*	-
Netherlands	2010	2x65 in 2.6 GHz 1x55 in 2.6 GHz	2x40 MHz of paired	2 new entrants(Tele2 and Ziggo)	-
Netherlands	2012	2x30 in 800 MHz 2x35 in 900 MHz 2x70 in 1800 MHz 4.9+9.7 in 1900 MHz (unpaired) 2x10 in 2.1 GHz 1x55 in 2.6 GHz	2x10 in 800 MHz 2x5 in 900 MHz	1 new entrant (Tele2 Netherlanc	2x5 in 900 MHz

Support provided to smaller operators in other countries (continue)

Country	Year	Total spectrum auctioned	Total spectrum reserved for new / late entrant operators	Take-up	Spectrum reserved for new/late entrant smaller operators but not taken up
Norway	2013	2x30 in 800 MHz 2x15 in 900 MHz 2x55 in 1800 MHz	-	-	-
Portugal	2011	2x1.25 in 450 MHz 2x30 in 800 MHz 2x10 in 900 MHz 2x57 in 1800 MHz 1x10 in 2.1 GHz 2x70 in 2.6 GHz 1x50 in 2.6 GHz	-	-	-
Romania	2012	2x30 in 800 MHz 2x35 in 900 MHz 2x75 in 1800 MHz 2x70 in 1.6 GHz 1x45 in 2.6 GHz	-	-	-
Singapore	2017	2x45 in 700 MHz 2x30 in 900 MHz 1x40 in 2.3 GHz 1x45 in 2.6 GHz	2x10 in 900 MHz 1x40 in 2.3 GHz	1 new entrant (TPG Telecom)	2x10 in 900 MHz 1x30 in 2.3 GHz
Slovak Republic	2013	2x30 in 800 MHz 2x20.4 in 1800 MHz 2x70 in 2.6 GHz 1x50 in 2.6 GHz	2x15 in 1800 MHz	1 new entrant (SWAN)	-
Slovenia	2014	2x30 in 800 MHz 2x35 in 900 MHz 2x75 in 1800 MHz 2x5 in 2.1 GHz 1x20 in 2.1 GHz 2x70 in 2.6 GHz 1x50 in 2.6 GHz	2x10 in 800 MHz was reserved for operators with less than 15% market share	1 existing MNO (Tusmobil)	-
Spain	May-11	2x5 in 900 MHz 2x15 in 1800 MHz	2x5 in 900 MHz reserved for Orange, Yoigo, or a new entrant 2x15 in 1800 MHz reserved for Yoigo or a new entrant	2 existing MNOs (Orange and Yoigo)	-
Spain	Jul-11	2x30 in 800 MHz 2x10 in 900 MHz 2x70 in 2.6 GHz 1x50 in 2.6 GHz	-	-	-
Spain (re-auction of unsold)	Nov-11	2x5 in 900 MHz 1x50 in 2.6 GHz	-	-	-
Sweden	Mar-11	2x30 in 800 MHz	-	-	-
Sweden	Oct-11	2x35 in 1800 MHz	-	-	-
Switzerland	2012	2x30 in 800 MHz 2x35 in 900 MHz 2x75 in 1800 MHz 2x60 in 2.1 GHz 1x20 in 2.1 GHz 2x70 in 2.6 GHz 1x45 in 2.6 GHz	-	-	-

Source: Ofcom Annual licence fees for 900MHz and 1800MHz spectrum, Annex 8; Ofcom Annual licence fees for 900MHz and 1800MHz spectrum, October 2013.

Annex B

Challenges with achieving higher BBBEE status levels

In order to demonstrate the challenges with achieving higher BBBEE status levels generally and that it will not be reasonable to expect a licensee to achieve Level 1 BBBEE status within 12 months, Vodacom sets out an explanation of the changes to the applicable BBBEE Codes of Good Practice since 2007 together with the timing and costs associated with Vodacom's achievement of different BBBEE status levels since then.

DTI Codes 2007 to 31 March 2012

The implementation of BBBEE was first introduced on 9 February 2007 by the gazetting of the DTI Codes of Good Practice (DTI Codes). From 2007, of the DTI Codes were applied by all economic sectors excluding the Mining Sector to determine the rate of compliance and procurement recognition spend. On 19 June 2012, the ICT Sector Codes were gazetted as a Code of Good Practice with specific application to the ICT Sector in terms of section 9(1) of the BBBEE Act, and as such, replaced the DTI Codes as the implementation instrument for the ICT Sector.

From 2007 to end March 2012, the following Levels indicating the scores across the measurement elements were realised by Vodacom:

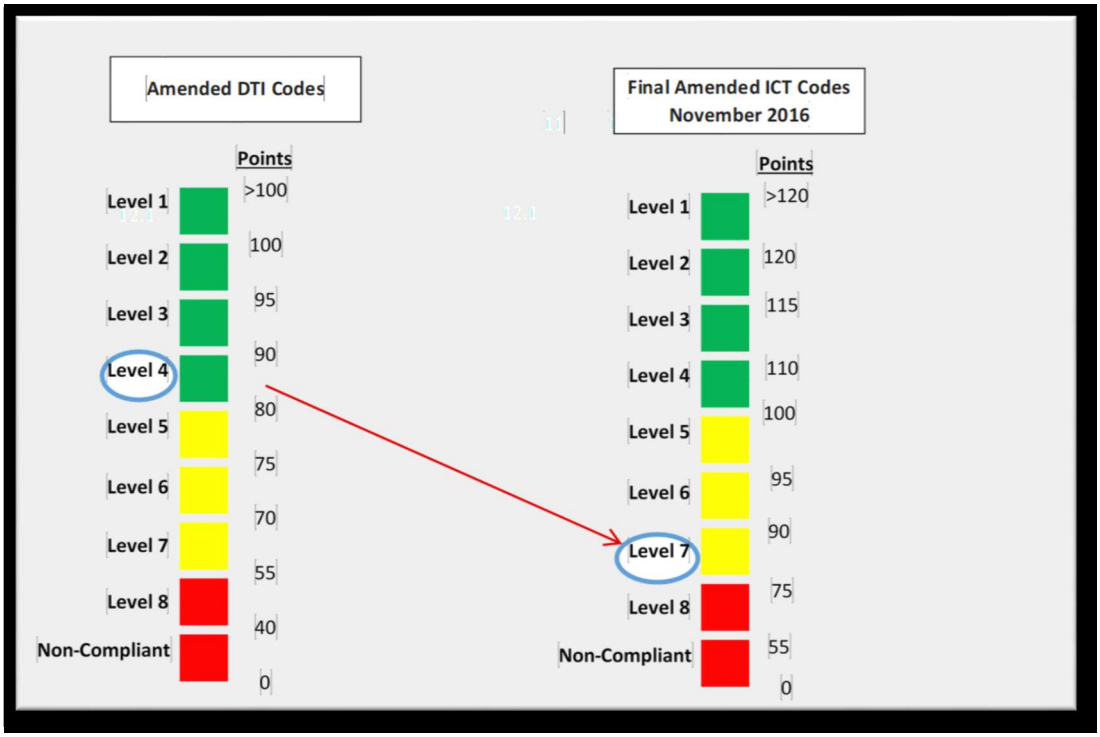
ICT Sector Code 2012

The ICT Sector Code of 2012 applied to the ICT Sector until 6 November 2016 (when the ICT Sector Codes were substantially amended). Vodacom sets out its results together with implementation budget costs for the period 2012 to 2016 based on the 2012 ICT Sector Codes:

The noticeable difference in budget between 2012/13 and 2013/14 is due to the fact that under the DTI Codes, contributions to Enterprise Development were cumulatively calculated (over 5 years) whereas the ICT Sector Code provided for annual spend recognition only.

Amended ICT Sector Code 2016

On 7th November 2016 with 3 months of implementation period to financial year end, the ICT Sector Codes of 2012 were amended to give effect to alignment with the 2013 DTI Codes which was implemented in 2015. Not only did the amendment of the ICT Sector Codes impact on the manner which transformation initiatives would be recognised, but also resulted in a revision of the BBBEE Levels as it relates to the points assigned to each, as illustrated in the diagram below. Whereas 90 points under the Amended DTI Codes will result in a measured entity having a Level 4 BBBEE status, 90 points under the Amended ICT Sector Codes will result in a measured entity only having a Level 7 BBBEE status.



From Vodacom's perspective, this sudden change resulted in our previously attained Level 2 (in 2016) dropping to Level 8 prior to us putting initiatives into place to remedy at least to a Level 4 (in 2017).

Vodacom's improvement from Level 3 (in 2018) to Level 1 (in 2019) was as a result of having concluded a 6,23% BBBEE deal in Vodacom Group at a value of R16.4 billion and a direct cost to company of R3,3 billion in addition to the R765 million cost of BBBEE. Furthermore, it must be noted that of the early payments to black owned SMMEs within less than 5 days from receipt of invoice, Vodacom is only granted the recognition of c.R40million due to the 15% limitation of recognition of total Supplier Development target spend.

Based on the above data, which provides evidence of the substantial effort by Vodacom to promote broad-based black economic empowerment in accordance with the Codes of Good Practice - ICT Sector Code, it effectively took Vodacom 12 Financial year periods to become the first telecommunications company to attain a Level 1 BBBEE status.