



29 February 2012

Dr SS Mncube
The Chairperson
Independent Communications Authority of South Africa
Pinmill Farm
164 Katherine Street
Sandton
2146

Per email : chairperson@icasa.org.za
CC : ykedama@icasa.org.za

Attention: Yolisa Kedama

Dear Chairperson

Re: Draft spectrum assignment plan and draft Invitation to Apply for spectrum in the 800 MHz and 2.6 GHz frequency bands

Please find herewith Vodacom's written submission in response to the published draft assignment plan for the combined licensing of the 800 MHz and 2.6 GHz bands and the draft invitation to apply for Radio Frequency Spectrum licence to provide mobile broadband access using complimentary 800 MHz and 2.6 GHz bands.

Vodacom hereby confirm its willingness to participate in any further consultative process which the Authority may schedule in respect of this matter.

We trust that you will find this in order.

Yours sincerely



NKATEKO NYOKA

CHIEF OFFICER: REGULATORY AFFAIRS, LEGAL AND STAKEHOLDER RELATIONS

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Vodacom (Pty) Ltd's written submission in response to the Independent Communications Authority of South Africa's Draft Spectrum Assignment Plan for the Combined Licensing of the 800 MHz and 2.6 GHz Bands and the Draft Invitation to Apply for Radio Frequency Spectrum

1. INTRODUCTION

Vodacom (Pty) Ltd ("Vodacom") welcomes the opportunity to comment on the Independent Communications Authority of South Africa's ("the Authority") Draft Spectrum Assignment Plan for the combined licensing of the 800 MHz and 2.6 GHz bands ("the draft spectrum assignment plan") and the Draft Invitation to Apply for Radio Frequency Spectrum ("the draft ITA") which were published on 15th December 2011 in Government Gazette No. 34872 under Notice No. 912 of 2011.

The draft spectrum assignment plan and draft ITA were, in an unprecedented move, published by the Authority a day after the Department of Communications ("the DoC") published the Draft Policy Directives to ICASA on Exploitation of the Digital Dividend Spectrum and Radio Frequency Spectrum for Electronic Communications Services¹. The approach taken by the Authority in the draft spectrum assignment plan and the draft ITA raises clarity seeking questions and concerns with regards to some of the complex concepts alluded to in the documents such as the wholesale open access network framework, combinatorial licensing approach and spectrum set asides which were not clearly defined and expanded by the Authority.

Without significant additional time to consider, clarify and modify the current proposals it appears to us that the most valuable spectrum to become available in South Africa will not be put to best use. By seriously limiting the ability of existing operators to secure spectrum and invest in the next generation of mobile broadband, there is likely to be extremely limited rollout and high prices for new services.

Vodacom confirms that it would like an opportunity to participate in any further consultative process which the Authority might undertake.

¹ Government Gazette 34848 published on 14th December 2011

Our submission comprises of two parts, namely:

- Part A sets out Vodacom's general comments on the draft spectrum assignment plan and draft ITA; and

- Part B contains Vodacom's specific comments on the draft spectrum assignment plan and draft ITA

2. PART A: GENERAL COMMENTS

1. LEGISLATIVE FRAMEWORK

Vodacom is of the view that the submissions on the draft assignment plan and draft ITA are likely to constitute abortive work since they are based on drafts emanating from a process which has yet to be finalised i.e. the DoC's draft policy directives on exploitation of the Digital Dividend Spectrum and Radio Frequency Spectrum for Electronic Communications Services. Vodacom believes that the closing date for submissions for the DoC and the Authority's consultations should not coincide on 29 February 2012 as this creates an impression that the outcomes of these processes may not be what the DoC or the Authority envisaged or that the outcomes are already decided.

2. EXTENSION OF THE DIGITAL DIVIDEND SPECTRUM TO BELOW 790 MHZ

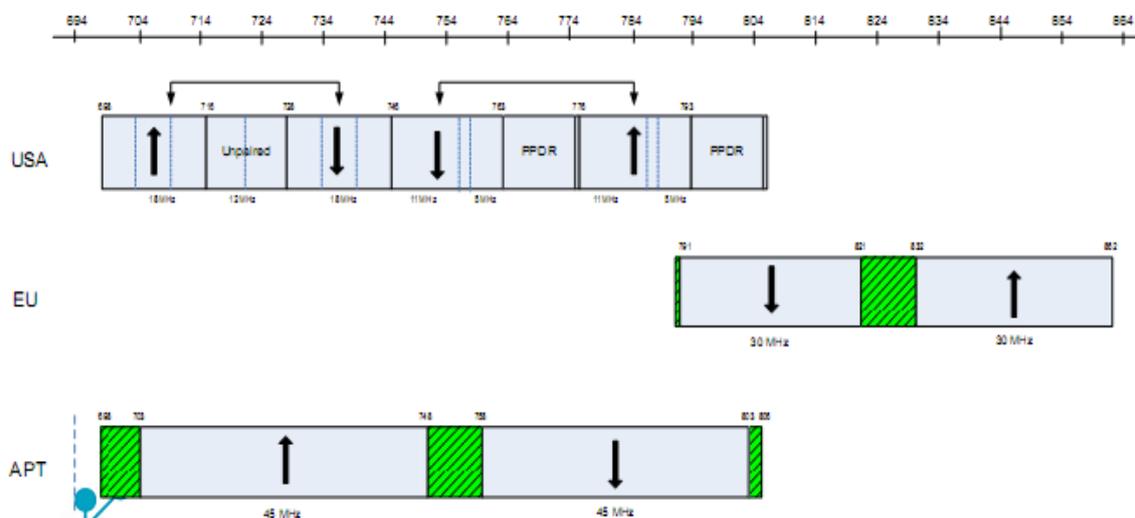
The World Radiocommunications Conference 2012 (WRC'12)² resolved to allocate additional Digital Dividend ("DD") radio frequency spectrum in the band below 790 MHz for mobile services in Region 1 (i.e. Europe, Middle East and Africa). This additional DD radio frequency band has also been identified for mobile broadband services using International Mobile Telecommunications ("IMT"). The additional DD radio frequency allocation covers the 694-790 MHz band.

Vodacom acknowledges that the additional allocation will only be effective after the next WRC in 2015 ("WRC'15"). This will allow broadcasters to complete the migration from analogue to digital broadcasting. Furthermore, the lower edge of the allocation (i.e. 694 MHz) is subject to refinement at WRC'15, taking into account the ITU-R studies and the needs of countries in Region 1, in particular developing countries. There is also the need to define a harmonised channel arrangement that will apply to the additional DD band (694 - 790 MHz) taking into consideration the channel arrangement for the 790 - 862 MHz band.

² Geneva, 23 January 2012 to 17 February 2012

In light of the above, Vodacom submits that it will be premature for South Africa to continue with the licensing of the 790 - 862 MHz spectrum whilst the International Telecommunication Union – Radiocommunication Sector (“ITU-R”) is conducting studies on the channel arrangement and the lower band edge of the 694-790 MHz band. Vodacom contends that the two bands are interrelated, and in South Africa, access to these bands will only be after 2015 in any event. Vodacom is of the view that licensing of one digital dividend radio frequency spectrum band without considering the other may place South Africa in a difficult position if the outcome of the ITU-R studies necessitates frequency re-arrangement. Vodacom therefore submits that the Authority should delay the licensing of the 790 - 862 MHz radio frequency spectrum until the ITU-R has resolved the channel arrangement issues. Delaying the assignment of the 790 – 862 MHz band until channel arrangement which includes the additional DD spectrum is concluded could yield more attractive packages as compared to what is currently proposed and resolve the misalignment as depicted in the diagram below. The channel arrangement in the three ITU – R Regions as can be seen below overlaps hence there is a need to develop a harmonized channel arrangement for the entire digital dividend spectrum.

Digital Dividend Band Plans



3. THE DRAFT ITA TIMELINES

Vodacom submits that the spectrum licensing timelines provided by the Authority in the original draft ITA and the erratum to the draft ITA are unrealistic and should be revised. The closing date for comments on the draft spectrum assignment plan and draft ITA was changed from 31 January 2012 to 29 February 2012 in order to give interested parties sufficient time to comment.

Subsequent to the publication of the new closing date for comments on the Authority's documents, the DoC extended the closing date for comments on the draft policy directives by one month to 29 February 2012 – which is the same as the Authority's closing date.

Vodacom is of the view that the DoC's policy directives should form an important input into the Authority's licensing process. In light of this, Vodacom requests that the Authority should suspend the public consultation process on the draft assignment plan and draft ITA until the Minister has finalised the policy directions. Once the policy directions are finalised, ICASA could then restart public consultation process on the revised spectrum assignment plan and revised draft ITA.

Vodacom proposes that after the publication of the policy directives the following timelines for the licensing process should be adopted:

- Closing date for comments on the draft assignment plan and draft ITA – 1 month after publication of the policy directives;
- Public Hearings - two weeks after closing date for comments;
- Final publication of the assignment plan and ITA - two weeks after the end of the public hearings;
- Closing date for applications - six months after publication of the final assignment plan and ITA; and
- Finalise the licensing process - two months after submission of applications.

3.1 Application process / timelines

Vodacom submits that one month, as provided for in the draft spectrum licensing timelines, is too short a timeframe to prepare a proper application for a network operating licence. Potential bidders will need sufficient time to prepare realistic business plans and obtain financing for the licence fee, network rollout and operations for the first three years. The Authority has provided applicants for subscription broadcasting licences with a six month timeframe to prepare their applications and should provide a similar timeframe to potential applicants for the spectrum licences:

- On 2nd February 2012, the Authority issued an invitation to apply for individual commercial subscription broadcasting services in Government Gazette No. 34999, under Notice No. 93 of 2012, the due date for submissions is 11 July 2012;
- On 2nd February 2012, the Authority issued an invitation to apply for individual commercial sound broadcasting services in Primary Markets i.e. Cape Town, Durban and Gauteng in Government Gazette No. 34998, under Notice No. 92 of 2012, the due date for submissions is 4 July 2012; and
- On 2nd February 2012 the Authority issued an invitation to apply for individual commercial sound broadcasting services in Secondary Markets i.e. Eastern Cape, Northern Cape and Free State in Government Gazette No. 35000, under Notice No. 94 of 2012, the due date for submissions is 27 June 2012.

On the basis of the above, Vodacom believes that a period of six months is required to submit the applications in response to the draft ITA for radio frequency spectrum.

4. THE NEED FOR A COHERENT POLICY FRAMEWORK

4.1 Formulation of a holistic Policy Framework should precede the licensing of the high demand radio frequency spectrum

Broadband has become a key developmental input to any economy and as such, Vodacom is fully committed to the goal of increasing access to broadband services to all. The assignment of radio frequency spectrum in the high demand radio frequency bands presents a key opportunity for the attainment of government's policy objectives of universal access to communications services and infrastructure, including broadband. However, Vodacom believes that the proposed assignment of radio frequency spectrum within the framework of existing legislation and policies would generate a significant risk that government's policy objectives would not be achieved.

Vodacom notes that the last comprehensive policy review for the communications sector was undertaken during early to mid 1990s (prior to the promulgation of the Telecommunications Act, 1996). There has been, in Vodacom's view, several significant market and technological advances since 1996 which have fundamentally changed the communications landscape in South Africa. This absence of a an over-arching policy framework has created an environment of *ad hoc* policy formulation which often fail to find a balance between competing commercial interests, let alone placing the end-user of communication services at the centre of the regulatory decisions pronounced by the Authority from time to time.

According to the Diagnostic Report released by the National Planning Commission ("the NPC")³, though the ICT has on average grown faster than GDP over the years, such growth has firstly; been far below that of top-performing African countries and secondly; not been accompanied by the realisation of government major policy objective of increasing access to communications services. The NPC submits that in order to support a shift in the ICT sector, an integrated policy framework or strategy is required.

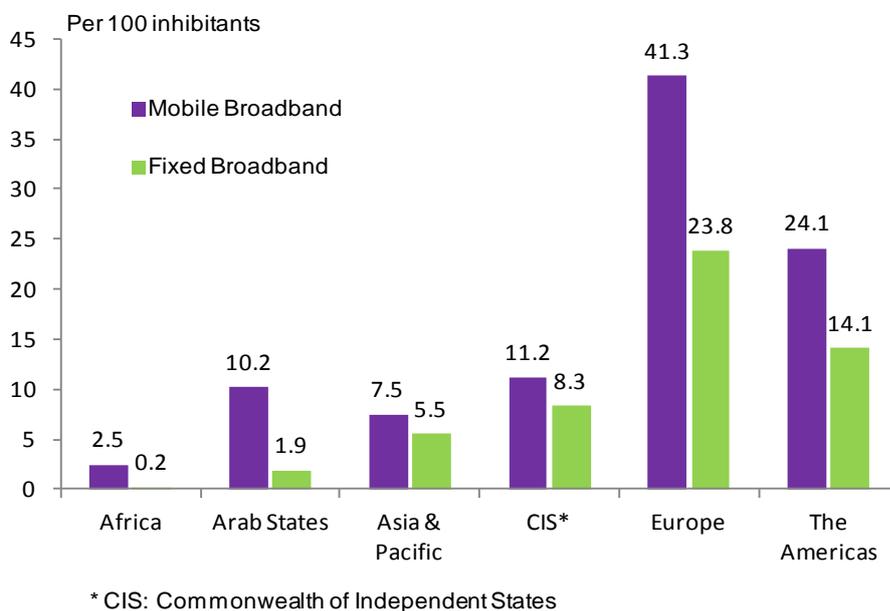
³ NPC Diagnostic Report 9 June 2011

To this extent, Vodacom believes that South Africa requires a strategic conversation on the future and evolution of the communications sector. Such conversation has to involve the Ministry of Communications (“the Ministry”), the Authority and the entire stakeholder community in the communications sector. The conversation can commence at the colloquium planned for end of March 2012, but in Vodacom's view should culminate in the development of a comprehensive policy framework via green and white paper process – taking the following factors into account:

- The explosion in data traffic makes the deploying of advanced and efficient networks a necessity for operators seeking to improve their network efficiency. Operators need better control of the increases in network operational expenditure that accompany the proliferation of smart-phones, tablets, and laptops equipped with cellular wireless connectivity.
- Recognition of the disconnection between mobile data traffic volumes and revenues and the need for improved business models to bridge the demand between network capacity supply and demand. The reality of the situation in many markets is that operators' “traditional” voice revenues are being squeezed, while data (content / application) services have not grown fast enough to make up the losses.
- Building networks is time- consuming and expensive, and it takes years for operators to recoup their investments. The cost of rolling out new advanced and efficient networks will likely run into billions of rands, currently, these advanced and efficient networks do not offer clear new revenue streams for operators. The main objective of deploying these networks is to cost effectively addresses the explosion in data traffic.
- The uncertain economic climate does nothing to encourage CAPEX spending for an unproven business case, therefore any request for investment to deploy networks will have to be carefully analysed and motivated.
- Mobile communications, including mobile broadband, has been playing important roles in the economic and social developments of both developed and developing countries. It contributes to growth of the economy, mitigation of the digital divide,

improvement of quality of life, and facilitation for the emergence of other industries. The figures below illustrate global mobile broadband penetration and mobile data traffic forecast until 2022 as predicted by the ITU-R. These figures mean that for operators who currently provide mobile broadband services, they need to increase investment in their networks including rolling out more efficient networks using existing and new spectrum in order to meet the demand.

Fixed and mobile broadband penetration in 2010⁴



The DoC has indicated its intention to embark on such a holistic policy review⁵.

4.2 NPC Policy Proposals on Spectrum Management

The National Development Plan ("the NDP") released by the NPC on 11 November 2011 sets out the NPC's vision and views on the reality of information and communications infrastructure in South Africa. Central to the NPC's vision for the country is an ICT sector that

⁴ Source: ITU World Telecommunication/ICT Indicators Database.

⁵ The DoC has set aside approximately R95,7 million in the 2012 Budget allocation to develop an integrated ICT Policy by March 2013

enables economic activity, the phasing of priorities for which sets out targets for the short term (2012 – 2015), medium term (2015 – 2020) and long term (2020 – 2030). The following are of particular significance within the short term:

- A clear and urgent need for a full policy review (which has not been done in the ICT sector since 1996).
- Identification of spectrum as a severe regulatory bottleneck and a list of actions to address and resolve spectrum management issues.

According to the NPC's NDP Vision for 2030, radio frequency spectrum allocation is perhaps the biggest regulatory bottleneck in the proliferation of rapidly deployable wireless technologies to meet the diverse needs of the society and economy. The NPC recommends the following with regard to radio frequency spectrum:

- Radio frequency spectrum should be fully tradable once allocated. This is one of the most important steps to grow the ICT industry i.e. that radio frequency spectrum should be allowed to "migrate to users that will use it most efficiently, thus benefiting the economy";
- Free spectrum for efficient use to drive down costs and stimulate innovation;
- Radio frequency spectrum licences should be technology neutral;
- Regulations should be promulgated to discourage spectrum hoarding, where licensees acquire spectrum and do not use it, or exploit it only in certain geographical areas;
- Radio frequency spectrum policy should favour competition, but incumbents should not be excluded from gaining access to spectrum they need to build networks using new technologies;
- Implementation of a service and technology neutral flexible licensing regime to allow flexible use of resources in dynamic and innovative sectors, especially for spectrum that should be made available urgently for next generation services; and
- Spectrum can be allocated with set asides or obligations to overcome historical legacies and inequalities in the sector, but this should not delay its competitive allocation

Vodacom recommends that the proposed licensing framework should be aligned with the objectives of the NDP Vision 2020 and 2030 with regard to spectrum. This will enable the development of a spectrum management framework which takes into consideration current and future market developments.

4.3 ICT Vision 2020 and 2030

At the ICT Industry Competitiveness and Job Creation Summit held on Friday, 14 October 2011, the Ministerial Report of the ICT Working Group addressed a detailed SA ICT vision for 2020 to provide strategic guidance for the 7 work-streams tasked with the following:

- Investments
- Manufacturing
- Local Digital Content
- Human Capital
- Digitising Government

The DoC set as the primary goals of ICT Vision 2020 100% broadband penetration, creation of 1 million jobs and reduction of unemployment; and as secondary goals - GDP growth contribution and ICT competitiveness.

It is therefore evident how much importance is being accorded ICT, and the role of spectrum in it, at the highest levels. Vodacom is therefore most concerned that the regulatory frameworks, as drafted for the critical spectrum bands 800MHz and 2.6GHz, and indeed as exist for spectrum management in general, are going to frustrate the objectives of ICT Vision 2020 and 2030 as set out, not only in the NDP, but also in the Ministerial Report.

Vodacom is concerned that there is minimal alignment with the NPC's recommendations on spectrum, in terms of both the existing RFS Regulations as well as the draft Policy Directives

and Regulations on High Demand RFS and DD. The draft Regulations allude to the NDP, but omit any commitment to the NDP's positions on spectrum.

5. TENSION BETWEEN EMPOWERMENT REQUIREMENTS IN THE ECA AND BROAD-BASED BLACK ECONOMIC EMPOWERMENT ("B-BBEE ACT")

Vodacom supports government's BEE policy objectives. However, over the years, Vodacom has always pointed to the inconsistency between the measurement of BEE as envisioned in the BBBEE Act, built around the notion of a scorecard – and the ECA which appears to focus on equity ownership for historically disadvantaged individuals or persons. Our submission is that there would ideally be a great advantage in aligning the measurement focus of the two legislative instruments to enable both government and investors to make appropriate long term plans. Moreover, as recently as December 2011, the Ministry of Trade and Industry published an amendment bill to the BBBEE Act which, *inter-alia*, seeks to manage conflict between various legislative instruments regulating BEE. Section 23 of the BBBEE Amendment Bill specifically stipulates that in the event of a conflict between the BBBEE Act and any other legislation on BEE matters, the BBBEE Act takes precedence. Given these proposals in the BBBEE Amendment Bill, Vodacom submits that ICASA has to move cautiously and perhaps a prudent approach would be to await the outcome of the deliberations on the BBBEE Amendment Bill so that any BEE obligations imposed would reflect government's current thinking on broad-based black economic empowerment.

6. SOUTH AFRICA'S COMMITMENTS TO THE WORLD TRADE ORGANISATION

South Africa has additional World Trade Organisation ("WTO") commitments for the communications market access by foreign investors from other WTO members⁶. Under the General Agreement for Trade in Services ("GATS Framework"), South Africa has committed to the "Reference Paper" on regulatory frameworks which includes a number of specific regulatory principles and commitments. One of these is particularly relevant to the DoC's

⁶ clause 6 of GATS/SC/78/Suppl.2, South Africa's Schedule of Specific Commitments, Supplement 2, ADDITIONAL COMMITMENTS BY SOUTH AFRICA, REFERENCE PAPER

draft policy directives and the Authority's draft spectrum assignment plan and draft ITA. It is the commitment on the allocation and use of scarce resources, including frequencies. The specific commitment is that the procedures for the allocation and use of frequencies would be carried out in a "non-discriminatory" manner. This commitment provides that the procedures for the allocation and use of frequencies should ensure that foreign investors were treated no less favourably than any domestic suppliers of communications services. In this context, Vodacom – being a South African company – cautions the Authority against adopting rules; such as the multiple reservations of spectrum for some companies, and the imposition of the wholesale only, no retail, no locking, no blocking conditions; which on the face of it appear to be consistent with these WTO commitments.

7. COMPETITION AND APPROPRIATE SPECTRUM ASSIGNMENT FRAMEWORK

Vodacom submits that a licensing framework and policy instruments which rely heavily on new entrants and State owned Enterprises (SoEs) to achieve extensive national broadband network rollout objectives while restricting existing licensees' ability to sustain their business models and invest is unlikely to lead to the most efficient outcome. More importantly, Vodacom submits that companies who have proven successful in developing broadband services in South Africa should be involved in the next step of development of broadband services in South Africa.

Vodacom believes that the South African mobile market is competitive, and supports an open and transparent process for the assignment of spectrum which does not favour new entrants over existing operators. A spectrum licensing framework which aims to introduce new entrants must allow existing licensees sufficient space to sustain their business models and ensure that South Africa takes advantage of synergies from existing network deployments. This will place fewer burdens on new entrants to achieve the challenging broadband targets we all aspire to.

In general spectrum management seeks to address three interrelated challenges; therefore a spectrum policy should create a framework to address:

- the allocation of the correct amount of spectrum for certain uses or radiocommunication services;
- the assignment of the correct amount of spectrum to certain users; and
- the adjustment of these allocations and assignments as technologies and markets evolve over time

Vodacom agrees that the draft spectrum licensing framework seeks to address the first problem wherein the Authority has taken the initiative to allocate the entire spectrum in the 800 MHz and 2.6 GHz bands for mobile broadband use based on the positive impact mobile broadband can have on the economy and society. The Authority should endeavour to take a long term (10 - 15 years) holistic view regarding the release of additional spectrum in different frequency bands including the second digital dividend (174-230 MHz and 470-790 MHz) particularly the 694 – 790 MHz band based on the outcomes of WRC '12 and the 2300 MHz band based on the outcomes of WRC '07. In order to address the remaining two spectrum management challenges identified above, the Authority should review the proposed usage of spectrum in the 800 MHz and 2.6 GHz bands to ensure that an efficient assignment of the spectrum is possible.

8. WHOLESALE OPEN ACCESS NETWORK

Vodacom submits that the draft spectrum assignment plan does not define Wholesale Open Access Network ("WOAN"). Vodacom is concerned about this lack of clarity on the appropriate WOAN framework for South Africa. Vodacom is of the view that the Authority, due to the lack of clarity on how the DoC's policy directives seek to implement the concept of WOAN in South Africa, has defined it in terms of "no locking", no "blocking" and "no retail". The WOAN framework proposed by the Authority suggests that the successful licensee would be required to build, operate and maintain a network on behalf of Mobile Virtual Network Operators ("MVNOs") only and would not be allowed to provide any retail services to itself or any of its subsidiaries / service providers. Vodacom believes that this approach will not lead to the investment necessary to meet the stated policy objectives.

Our research indicates that there is no place in the world where a wholesale only model has been adopted successfully. Both Clearwire and LightSquare who had adopted a wholesale-only model in the US are reportedly having financial difficulties. The problem with wholesale-only models is that there is no real leverage to establish a profitable business relationship with major potential partners. Building a wholesale network without a guaranteed customer base is a risk that very few network operators would be willing to take.

Vodacom submits that it is important for the government and regulatory authorities to facilitate the acquisition of sites in order to assist licensees to achieve the set objectives. Vodacom has been involved in the process of providing recommendations regarding government's actions to facilitate rapid deployment of broadband infrastructure, in particular expediting the approval of radio sites.

Furthermore, spectrum is one component in mobile broadband services deployment; another important element is the acquisition of radio sites. Both existing operators and new entrants will face challenges and significant delay when seeking approval for new radio sites.

In the situation being proposed, regulation rather than market competition, must determine wholesale prices and the quality of service. Unless the regulation is extremely precise, comprehensive and stable there is a significant risk of unintended consequences, and in particular of deterring the investment needed to create wider adoption of mobile broadband.

8.1 Customers of a WOAN

Vodacom is of the view that an ECNS licensee assigned the 800 MHz and 2.6 GHz radio frequency spectrum on a WOAN framework such as Sentech and one other to be announced must allow other entities to offer services using its network with no locking of devices and no blocking of services or content. It is not clear how the complicated purely mobile operations such as handover will be addressed in the WOAN framework. These operations will be particularly complex when different entities own different parts of the

overall solution. Handover during a single session from a GSM network (owned by operator A), to an LTE network (owned by operators A, B and C) to a GSM network (owned by operator D) is one example. The Authority has not given any indication on the possible WOAN tariffs to be applied, whether it would be on a cost based or cost plus model. Vodacom recommends that in adopting the concept of WOAN, the Authority should consider, amongst others, the following:

- What pricing methodologies would be implemented?
- How will quality of service be ensured in the context of WOAN?

9. FLEXIBLE SPECTRUM MANAGEMENT FRAMEWORK

Vodacom submits that it is not clear what the views of the Authority are in terms of successful licensees for the assignment of the combined 800 MHz and 2.6 GHz spectrum partnering with other licensees for the building of networks and rolling out broadband services in South Africa. Vodacom seeks clarity from the Authority on what would be the framework that the Authority would adhere to if they were to license a consortium formed by licensees who wish to deploy broadband services using the said radio frequency spectrum. Would members of that particular consortium be required to meet the pre qualifying criteria 'particularly BEE' on their own or on a weighted average?

Not only is access to more radio frequency spectrum required in many countries, there is a pressing need to flexibly reassign unused and underused spectrum to users who will use it most efficiently. Greater flexibility in usage/market solutions (tradability) is increasingly viewed as a way to better take into account the expected competing demands. In particular, the introduction of spectrum trading in its various forms – including full transfers, leasing, frequency sharing and pooling arrangements – should be allowed. Licences should be obtained via:

- direct transfer where the licence is assigned from one party to another; and
- indirect transfer where markets spectrum leasing framework provides for the lease of some or all of a licensee's spectrum usage rights to another party, which can then provide wireless services consistent with the underlying wireless licence.

Licensees should be permitted to lease all or a portion of their spectrum usage rights for any length of time within the license term, and over any geographic area encompassed by the licence. The leasing framework could take any of the following spectrum leasing arrangements:

- The licensee retains control of the spectrum at all times, remaining primarily responsible for ensuring compliance with the underlying licence requirements. In addition, the licensee is also responsible for the spectrum lessee's compliance with those requirements. This responsibility includes maintaining reasonable operational oversight over the leased spectrum so as to ensure that each lessee complies with all applicable technical and service rules, including any frequency coordination requirements and resolution of interference-related matters. The licensee should not be required to obtain prior approval from the Authority to enter into this arrangement so long as it retains both legal and de facto control over the leased spectrum.
- The primary responsibility for compliance with licence requirements is transferred to the spectrum lessee. The licensee may be required to obtain prior approval by the Authority before entering into this form of leasing agreement.

An approach which offers a realistic solution for the growth of ICT nationally is to secure the active co-operation and support of incumbents through innovative spectrum management to maximise the use of spectrum to deliver broadband by co-operation between new 800/2600MHz spectrum assignees and as many of the incumbent networks as wish to contribute to the new deployments using the 800/2600MHz spectrum. As the draft assignment plan stands, most of the incumbents will be ruled out of participation at the critical infrastructure level. Vodacom submits that the draft assignment plan should be amended accordingly to allow for co-operation between existing operators and new entrants:

- The form that such co-operation will take will be formulated in commercial partnership agreements between two or more ECNS operators, one of which would

be a new assignee in 800/2600MHz spectrum and the other/s would be an incumbent/s with vital resources such as infrastructure and network;

- Critical to the success of such an approach is that the Authorities do not interfere to the extent that potential commercial partnerships are constrained to the point that they have no benefit and no incentive for the formation of partnerships necessary to maximise the use of spectrum; and
- As a prerequisite for facilitating the negotiation of agreements as motivated above, it is very strongly recommended that the Authorities address impediments to innovative spectrum management (i.e. market based spectrum trading, leasing/third party authorisation, and pooling of spectrum) in the existing final and draft Policies and Regulations and indeed make it a cornerstone of any new / proposed Policy framework.

10. RESERVATION OF SPECTRUM FOR LICENSEES WITH ASSIGNMENTS IN THE 800 MHZ AND 2.6 GHZ BANDS

Vodacom is of the view that before commencing with the licensing process for spectrum in the 800 MHz and 2.6 GHz bands, the Authority should review current usage of the spectrum assigned to licensees in these frequency bands. As part of the review process, the Authority should determine the appropriate amount of spectrum required by these licensees. Excess spectrum should be returned to the Authority. Thereafter, the existing licensees should be migrated to appropriate parts within the band or to other bands if possible.

The reservation of the 800 MHz and 2.6 GHz radio frequency spectrum to licensees who currently have assignments in these bands without following due process is a concern. Vodacom is of the view that after the review process the entire available spectrum should be available for licensing without any reservations for particular licensees. Alternatively, Vodacom submits that due process should be followed to decide if reservations are necessary, including the basis, amount of spectrum to be reserved, applicable spectrum fees and conditions for such reservations. This will ensure that all licensees have a fair opportunity to access this valuable spectrum. This will also lead to an efficient spectrum

assignment because the winning licensee will have demonstrated their capability to rollout networks and ability to achieve the set objectives. Vodacom is concerned that the Authority has not provided reasons for excluding roll-out obligations for the 800 MHz licence reserved for Neotel, considering that there is an acknowledgement by the Authority that the 800 MHz band is suitable to provide coverage, particularly for geographic coverage of rural areas and that the 2.6 GHz band is suitable for higher capacity and population coverage.

Spectrum is an essential input into wireless communications. More spectrum supports more competition. Each spectrum licensing process is a new opportunity for a potential entrant or a new service and improved capacity and coverage for existing services. There is strong empirical support for the hypothesis that additional spectrum enhances competition, lowers consumer prices and increases economic welfare⁷.

Vodacom is of the view that the primary goal of the draft spectrum assignment plan should be economic and social efficiency i.e. to put the spectrum to its best use. Best use means the assignment of licences that maximises the consumer value of wireless services. Existing licensees often have synergy value for new spectrum i.e. they may have important economies of scale and scope that would allow them to use the additional spectrum more efficiently thereby reducing the cost of service provision. Therefore it is important to balance the involvement of new entrants and existing licensees to achieve the objectives. Regulators have a variety of options to enhance competition. The choice of policy instruments to address competition should be based on how the policy instrument will affect the market's ability to achieve other objectives such as broadband penetration targets.

11. POLICY AND REGULATORY CONSIDERATIONS REGARDING RIGHTS OF WAY

Policy and regulation affect incentives to invest in broadband networks and also have a direct bearing on service costs and affordability. Network development is evolutionary and capable of responding to changing consumer demands. As consumer demand increases, the

⁷ Hazlett and Munoz 2009

number of radio sites or fibre lines will increase to provide service to additional consumers who did not have service coverage. The steps required for an Electronic Communications Network Service (ECNS) licensee to lay new fibre optic lines on a public street, or to place antennas on public land, can significantly impact the decision to deploy broadband service to a community. Broadband deployment is often slowed by overly burdensome requests for information and lengthy processes for obtaining wayleaves or rights of way. Additionally, complex and differing procedures among municipalities make installation of facilities across municipal boundaries costly and time-consuming.

There is interaction between broadband deployment and rights-of-way (i.e. the conduits, trenches, tower sites, and other physical locations that modern communications networks occupy). The two seemingly unrelated issues when taken together play an important role in the success of a nation's technological and economic development. The spectrum policy should also address other dependencies which affect both new entrants and existing licensees' ability to perform against roll-out obligations and achievement of broadband targets by the country. These include issues such as access to right of way or obtaining site authorisations from municipalities and environment authorities.

Radiocommunication sites are critical for the wireless industry, which has a growing need for additional sites, including in remote communities. However, to avoid congestion as well as to address aesthetic concerns, municipalities desire to limit the number of radiocommunications sites.

In general, the challenges encountered by ECNS licensees regarding rights of way are:

- Licensees who intend to roll out their network across multiple jurisdictions are often required to submit multiple applications to the different authorities. Procedures and format of the applications differ according to the municipality. This causes applicants to spend unnecessary time and resources to satisfy administrative requirements.
- Licensees need to obtain rights of way permits on a timely basis. Undue delay can increase the costs of deployment.

In order to construct their networks in a cost-effective manner, broadband providers, like other rights of way users, need timely decisions from land managers. Lengthy delays can add tremendous costs to a broadband project, cause companies to lose their funding, delay expansion into a particular market or community, and/or result in the postponement or abandonment of a broadband project. To prevent undue delay that can increase the costs of deployment and cause postponement or even abandonment of a project, there are a number of steps that can facilitate rapid deployment of infrastructure by new and existing licensees:

- Authorities should set specific target time frames for completion of various steps involved in the rights of way process. Establishing targeted time frames for various steps of the rights of way process helps in providing predictability to the applicant;
- Reducing barriers associated with obtaining municipal authorisation for access to and use of rights of way;
- Harmonising administrative procedures for access to rights of way and ensuring consistency in the application of these procedures across the country;
- Reducing or eliminating any fees associated with using rights of way.

3. PART B: SPECIFIC COMMENTS

1. PROPOSED SPECTRUM ASSIGNMENT PACKAGES

Vodacom believes that the South African mobile market is competitive, and supports an open and transparent process for the assignment of radio frequency spectrum which does not favour new entrants or existing operators. A licensing framework which aims to introduce new entrants must allow existing licensees sufficient space for sustainability and ensure that South Africa takes advantage of synergies from existing network deployments.

To this end Vodacom proposes that one third of the available spectrum in each band should be reserved for new entrants, with the remaining two thirds available to all applicants – including new entrants. In the 2.6 GHz band, Vodacom proposes that approximately 60 MHz (out of 190 MHz) should be reserved for new entrants. This 60 MHz that should be reserved exclusively for new entrants may comprise of the 20 MHz reserved for the Managed Spectrum Park and 40 MHz (2 x 20 MHz) in channel block C. Vodacom's proposal would result in 70 MHz in channel blocks B and D being available to all ECNS licensees, 60 MHz being reserved for new entrants and 60 MHz being assigned to Sentech and WBS.

In line with Vodacom's proposal, 20 MHz (2 x 10 MHz) or one third of the 800 MHz band should be reserved for new entrants. If Sentech is treated as a new entrant in this band then the remaining 40 MHz should be made available to any ECNS licensee, including new entrants.

One way in which the draft assignment plan could be improved is shown in Table 1, however the final assignment plan will require intensive deliberation based inter alia on the details of this submission such as resolution of the combinatorial award of the 800 MHz and

2.6 GHz blocks within single packages and the restriction of such combinatorial awards to wholesale only operation.

1.1 Package 1

Vodacom supports the joint award of spectrum in the 2.6 GHz and 800 MHz bands as proposed in Package 1, provided that there is no restriction on providing retail services.

1.2 Neotel

The current assignment of 2 x 4.92 MHz (827.775 – 832.695 paired with 872.775 – 877.695 MHz) falls mostly within the centre gap of the 800 MHz channel plan. The overlap is 0.695 MHz from 832 to 832.695 MHz bandwidth.

Some concerns with the proposed licensing of the 800 MHz radio frequency spectrum to Neotel are:

- It is difficult to understand why the Authority proposes to grant Neotel 2 x 11.2 MHz in exchange for 2 x 4.92 MHz assignment. This is an increase in the amount of spectrum assigned to Neotel and not an exchange;
- The existing Neotel assignment fits mostly in the centre gap of the 800 MHz band plan, with an overlap of only 0.695 MHz from 832 to 832.695 MHz assignment. There is no reason to grant Neotel 2 x 10 MHz of prime spectrum in exchange for the 0.695 MHz of overlapping spectrum; and
- Neotel chose to deploy CDMA technology in the 800 MHz band using the ITU-R Region 2 channel plan, although South Africa falls within ITU-R Region 1 – which has a different channel plan. Neotel deliberately deployed their CDMA system using the channel plan from another ITU-R Region. Technology neutrality must be practised within the existing band and channel plans relevant to South Africa.

In light of the above Vodacom does not believe there is any justification for the preferential treatment being given to Neotel and recommends that the 2 x 10 MHz in the 800 MHz band that has been identified for Neotel should be made available to any ECNS licensee.

2. WHOLESALE OPEN ACCESS NETWORK (WOAN)

Vodacom submits that it is critical for the Authority to assign the scarce spectrum resource in an efficient manner whilst addressing government's objectives such as universal broadband access, empowerment and competition. Vodacom is however concerned that the Authority has, in the draft spectrum assignment plan, arbitrarily chosen a purely wholesale open access network (WOAN)⁸ framework (i.e. no retail) without considering the complexities, consequences and requirements to implement it. The Authority did not present their findings on the different licensing methodologies which they have considered to license the high demand radio frequency spectrum in order to achieve the set policy objectives. Vodacom expects the Authority to present the findings regarding the effectiveness of the different licensing methodologies to achieve the policy and regulatory objectives. The Authority did not present its findings regarding the sustainability of a pure wholesale open access network framework in the South African context, and the appropriate number of such networks to ensure sustainability of the entire industry. Furthermore, the Authority has not conducted a Regulatory Impact Assessment (RIA) to assess what the impact that such WOANs would have on the industry and the South African economy if one or all the WOAN operators fail to roll-out their networks in line with the prescribed or committed targets. Due to the huge investment requirements to establish mobile broadband networks, it is risky to experiment with concepts like pure wholesale open access networks without a thorough analysis of their social and economic impact. Considering the significance of the decision on the framework that should be adopted by the country to address the above objectives, it is important for the Authority to evaluate

⁸ The Wholesale open access licensee is restricted to providing a wholesale service to unaffiliated service providers on a non-discriminatory basis; and cannot offer services to end users and affiliated service providers.

various models and their complexities before settling on the model to be prescribed for the entire industry.

Vodacom submits that some of the Authority's proposals to implement the policy directives are unworkable under the current legislative framework. For example, although spectrum sharing is a noble idea there may be a need to amend the ECA, in particular section 31(1)⁹ and the Radio Frequency Spectrum Regulations, 2011 in order to enable the various spectrum sharing mechanisms such as spectrum trading, leasing, and pooling. Without amendment to section 31(1), a consortium of individual ECNS licensees will not be able to participate in the proposed licensing process because the consortium as a legal entity will not have an ECNS licence issued to it, although each licensee forming the consortium holds an ECNS licence and meet the other pre-qualification requirements.

Vodacom submits that the Authority should:

- conduct a detailed study to review the various spectrum sharing frameworks and their effectiveness towards achieving the government's objectives set out in the draft policy directives;
- determine the nature, structure, amount of spectrum per network and number of the shared networks required to accommodate the anticipated industry broadband data demand in the future;
- review whether the current legislative framework is sufficient to enable the proposed spectrum sharing framework, if not, identify the restrictions in the current legislative framework; and
- recommend a comprehensively researched framework in which the WOAN model is to be implemented in the South African context, should that research conclusively demonstrate the viability thereof

⁹ Subject to subsections (5) and (6), no person may transmit any signal by radio or use radio apparatus to receive any signal by radio except under and in accordance with a radio frequency spectrum license granted by the Authority to such person in terms of this Act.

The overall aim is to ensure effective retail competition while avoiding unnecessary duplication of infrastructure investment.

2.1 Technical implications of open access networks

Vodacom submits that the concept of an "open" access network limits the predictable performance of a wireless network, and as such creates difficulty in offering a consistent service to the end-consumer. This phenomenon is largely related to the dilution of limited spectrum resources between an unknown number of retail operators and end-users. While this challenge can be resolved in part by increasing capital intensity, the retail operators have no means to control the rollout and quality of service of the wholesale operator.

To also consider within the context of open access networks, is the manner in which the spectrum is shared between the retail operators. The two principle Radio Access Network (RAN) - sharing methods known today relate to either splitting the available bandwidth between participating operators (more consistent, but less popular), or alternatively, allowing all operators access to the full band, and using service classification to ensure a measure of equitable sharing reliance on new entrants and SoEs to achieve broadband objectives

Vodacom submits that the Authority's draft spectrum assignment plan restricts Telkom, Cell C, MTN and Vodacom to bid for only 60 MHz (24%) out of the 250 MHz (76%) available in the 800 MHz and the 2.6 GHz bands. This approach does not seem to take into consideration the exponential data growth from consumers on the existing networks. Vodacom is concerned that the proposal to licence new entrants the spectrum in the 2.6 GHz band and placing roll-out obligations of 50% population coverage within four years is unrealistic and is likely to fail. This failure will not only affect new entrants who will not be able to exploit the valuable spectrum they acquired, but will also affect all consumers who would have been denied the opportunity for better and cheaper data services. Vodacom submits that a proper study which enables both new entrants and existing licensees to offer services in a cost effective manner in the South African context should be undertaken before committing to pursue the approach being proposed by the Authority.

2.2 Spectrum Set – asides

Set-asides and spectrum caps have been proposed in an attempt to ensure that new entrants will be able to provide additional competition in the market for wireless services. We do not accept that this is likely to happen in practice. There are also costs associated with set-asides and spectrum caps— the incumbent wireless providers may actually be the most efficient service providers. If the efficiency sacrificed is not outweighed by the additional competition created by a new, less efficient competitor, then there is a real cost to using set-asides and spectrum caps. For example, an incumbent provider may be able to integrate additional spectrum into an existing network to provide additional capacity at low cost, or to combine it with existing spectrum to provide new services. If the new entrant does not increase competition by innovating or lowering prices, but duplicates existing network investment and incurs additional operating costs, promoting new entry would not be economically or socially efficient. Set-asides and spectrum caps should be used when there is a real chance that the additional competition will increase consumer choice and lead to efficient competition. The effectiveness of this approach needs to be determined before adopting it.

2.3 Sentech, WBS and Neotel's Prequalification

Vodacom is concerned about the Authority's preference on a particular State Owned Entity ("SOE") over other SOEs. Vodacom seeks clarity from the Authority as to why Sentech is being assigned 20 MHz of prime spectrum in the 800 MHz band in exchange for 20 MHz in the 2.6 GHz band as this does not seem to be a justified exchange since prices from spectrum auctions in Europe have shown that the 800 MHz band is several times more valuable. It is interesting to note that the Authority has chosen Sentech to fulfil this huge mandate when Sentech has had 50 MHz bandwidth in the 2.6 GHz band for many years assigned to it by the Authority for the purposes of rolling out broadband services in the country and failed.

Vodacom is concerned that the Authority has prequalified Neotel and Sentech by pre-assigning the two organisations the extremely valuable digital dividend radio frequency

spectrum in the 790 – 862 MHz band (“800 MHz band”), and WBS additional spectrum in the 2.6 GHz band without giving compelling reasons why they should not compete and be subjected to the same qualifying criteria as their competitors in the marketplace.

3. COMBINATORIAL LICENSING CONCEPT

Vodacom seeks clarity on what is meant by a combinatorial award of the 800 MHz and 2.6 GHz band. The Authority seems to have interpreted this to mean that a combination of spectrum from these two bands should be assigned under a single package. The Authority has also predetermined the amount of spectrum from each band for the different spectrum packages. Vodacom is of the understanding that the concept of combinatorial award of the 800 MHz and 2.6 GHz bands has different meanings and these could mean:

- Simultaneous licensing of the two radio frequency bands but allowing licensees to bid separately for each band and determining the amount of spectrum required in each band; or
- Simultaneous licensing of the two radio frequency bands but packaging pre-determined spectrum portions from both bands into single packages. Licensees are only allowed to bid for package made up of the pre-determined spectrum combination.

Thus, Vodacom submits that the Authority should review the different ways to effectively licence the 800 MHz and 2.6 GHz bands to maximise the benefit to consumers and industry. Vodacom submits that the spectrum packages should be less prescriptive to allow the market to determine the amount of spectrum from each band based on their business cases and the need to meet the prescribed targets. Vodacom recommends that the Authority should state clearly that:

- All licensee will pay spectrum licence fees in terms of the Spectrum Fees regulation, 2010 as amended;
- All licensees must have rollout obligations
- The “no retail” clause will be removed from the WOAN framework