

SUBMISSION

by

SENTECH LIMITED

on the

**DRAFT RADIO FREQUENCY SPECTRUM LICENCE FEES
REGULATIONS, 2009**

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1 INTRODUCTION

1.1 Sentech Limited ("**Sentech**") is pleased to have the opportunity to comment on the Draft Radio Frequency Spectrum Licence Fees Regulations ("**the Regulations**")¹ and the Radio Frequency Spectrum Licence Fees Discussion Document ("**Discussion Document**")² published by the Independent Communications Authority of South Africa ("**the Authority**") and hereby furnishes its written submissions in response thereto.

1.2 In compliance with paragraph 4 on page 3 of the Regulations, Sentech confirms and records that it would like to make oral submissions on the Regulations to the Authority, should public hearings be held as part of the consultative and participative process undertaken by the Authority.

1.3 Sentech would like to commend the Authority on the detailed and comprehensive work undertaken by it in respect of the preparation of the Discussion Document and in identifying an appropriate radio spectrum licence fee framework for the South African market.

1.4 Sentech is further appreciative of the cognisance taken by the Authority of the ever increasing pressure on limited spectrum resources and of the urgent need for the efficient and effective utilisation of spectrum and supports the Authority's decision to adopt a radio licence fee framework which aims to incentivise efficient usage of the radio frequency spectrum.

2 INTERNATIONAL COMPARISONS

2.1 In the Discussion Document, it is recorded that the Authority conducted additional international research and that international comparisons

¹ Published under Notice 305 of 2009 published in Government Gazette No 32029 dated 16 March 2009.

² Published under Notice 304 of 2009 published in Government Gazette No 32029 dated 16 March 2009.

demonstrated that the current licence fees specified under the E1 Licence Fees in Chapter 6 of the Radio Regulations (G.N.R 2862 of 1979) are generally lower than comparable fees in other countries. As a consequence, the Authority is of the view that a revision of the current licence fee framework for the use of radio frequency spectrum is long overdue.

- 2.2 As the Authority had regard to international practises and procedures, Sentech assumes that it is the intention of the Authority to put in place a radio frequency spectrum licence fee framework which is in alignment with best international practises and standards.
- 2.3 Sentech has undertaken its own research on international regulatory approaches to spectrum pricing and in particular, Sentech undertook a review of the approaches to spectrum pricing in Australia, the United Kingdom and the European Union. As Sentech, in conducting such research, was unable to find a justification for the Authority's contention that the licence fees currently charged for the use of radio frequency spectrum in South Africa are substantially lower than those applicable in other international jurisdictions, Sentech would appreciate clarification from the Authority as to what factors it had regard to when coming to this conclusion.
- 2.4 Sentech's international research has shown that the parameters and methods which may be used in such a comparison could include factors such as exchange rates, the market maturity of the country in question (i.e. first world or developing), quality of infrastructure and availability of spectrum. Under the circumstances, Sentech requests the Authority to furnish it with the factors upon which it relied for its conclusion that South Africa's spectrum licence fees are substantially lower than those imposed in other international jurisdictions.

- 2.5 With regard to the methods used to determine spectrum pricing, Sentech notes that the Authority proposes to use Administrative Incentive Pricing ("**AIP**") as the preferred method for determining radio frequency spectrum licence fees. Sentech supports this view in that its international research has shown that the majority of countries use the same method in order to determine radio frequency spectrum licence fees. From this perspective, AIP has been afforded ample opportunity to be tested and is generally considered to be a solid and largely infallible means of determining radio frequency spectrum licence fees.
- 2.6 Of critical importance to the effective implementation of AIP is the proper determination of the factors to be taken into account. In the draft Regulations, the Authority has proposed that 8 (eight) factors be taken into account for the purposes of calculating the radio frequency spectrum licence fees in terms of regulation 6 of the Regulations. These factors consist of, *inter alia* –
- 2.6.1 the bandwidth factor;
 - 2.6.2 the frequency factor;
 - 2.6.3 the geographic factor;
 - 2.6.4 the congestion factor;
 - 2.6.5 the degree of sharing factor;
 - 2.6.6 the area sterilised (ASTER);
 - 2.6.7 the minimum hop length; and
 - 2.6.8 the unidirectional factor.
- 2.7 The identification of 8 (eight) factors which are to be used in the formula

detailed in regulation 6 for the purposes of calculating the radio frequency spectrum fees is unusual. In this regard, most countries only have regard to approximately 3 (three) or 4 (four) factors. By way of example, Denmark relies on 3 (three) factors for the determination of radio frequency spectrum fees. These are: exclusive or shared use, bandwidth used and geographical coverage. Similarly, Finland relies on 3 (three) factors to determine radio frequency spectrum licence fees, namely, frequency used, coverage area, and the age of the system used.

2.8 Sentech is concerned that the use of 8 (eight) factors in the determination of the radio frequency licence fees payable by licensees will over-complicate the process and as it is generally recognised that one of the key characteristics of the success of AIP is simplicity, Sentech submits that the Authority should consider restricting the factors referred to in regulation 8 to no more than 3 (three) or 4 (four) factors and in this regard would propose that regard be had to the following factors only –

2.8.1 exclusive or shared usage;

2.8.2 bandwidth;

2.8.3 geographical coverage; and

2.8.4 congestion factor.

3 **GUARD BANDS**

3.1 It is accepted practice to allocate guard bands within assigned radio frequency bands. A guard band is an unused part of the radio frequency spectrum which is inserted between radio frequency bands which are actively used by licensees for the provision of services, the primary function of a guard band being thus to protect against instances of interference.

- 3.2 Regulation 5 of the Regulations details the use of radio frequency spectrum which will be exempt from the payment of radio frequency spectrum licence fees. Whilst broadcasting services and licence exempt equipment will be exempt from the payment of radio frequency licence fees, regulation 5 is silent as to the position in respect of guard bands.
- 3.3 As guard bands are not actively used by licensees, but are required to be allocated in terms of International Telecommunications Union ("ITU") requirements to reduce interference levels, Sentech is of the view that regulation 5 must be amended to specifically exempt licensees from having to make payment of any radio frequency spectrum licence fees to the Authority in respect of the guard bands assigned to them as part of an active radio frequency assignment.

4 **THE ISM RADIO FREQUENCY SPECTRUM**

- 4.1 Regulation 5(1) of the Regulations provides that equipment that is licence exempt will not be subject to radio frequency spectrum licence fees. Regulation 5(1) should be amended to refer to the radio frequency bands which are exempt from licensing in terms of the Licence Exemptions in respect of Radio Frequency Spectrum Regulations published under Notice 926 of 2008 in Government Gazette No. 31321 dated 8 August 2008 as these regulations do not only exempt certain types of equipment from licensing but all details the types of radio frequency usage which is exempt from licensing. In the circumstances, Sentech proposes that regulation 5(1) be amended to refer to radio frequency spectrum which is exempt from licensing as prescribed by the Authority from time to time.
- 4.2 Sentech notes that in terms of regulation 5(3) of the Regulations that broadcast services (unless otherwise determined by the Authority) will not be subject to the payment of a radio frequency spectrum fee. As the

Authority is aware Sentech's core business is the provision of broadcasting signal distribution services to the South African Broadcasting Corporation ("**SABC**"). Sentech has never been allocated radio frequency spectrum nor has it been granted a licence to utilise radio frequency spectrum for the transmission of the SABC's (or any other broadcaster's) content. Sentech has, however, historically used the radio frequency spectrum assigned to the SABC (and other broadcasters) lawfully without a radio frequency spectrum licence in accordance with the provisions of the Independent Broadcasting Authority Act 153 of 1993 ("**IBA**") and its broadcasting signal distribution licence. This position has, however, been altered by sections 31(1), 31(2) and 32(1) of the Electronic Communications Act 36 of 2005 ("**ECA**") in that these sections make it obligatory for the holders of electronic communications network service ("**ECNS**") licencees and who provide broadcasting signal distribution services for broadcasters to hold a separate radio frequency spectrum licence.

- 4.3 The Authority is also aware that Sentech has on numerous occasions raised concerns in regard to the Authority's failure to provide for the co-assignment of the radio frequency spectrum to broadcasters and to the ECNS licensees who provide broadcasting signal distribution services in the Draft Digital Terrestrial Television (DTT) Regulations published under Notice 344 of 2009 in *Government Gazette* No. 32083 on 31 March 2009 ("**DTT Regulations**"). This concern is still of major concern to Sentech who is firmly of the view that the DTT Regulations must be amended to provide for the grant of separate radio frequency spectrum licences to ECNS licensees in terms of which the radio frequency spectrum assigned to the broadcasters with whom ECNS licensees have contracted for the provision of a broadcasting signal distribution service are co-assigned to the ECNS licensee.

- 4.4 The concerns which Sentech has in respect of the failure to deal with co-assignment of the radio frequency spectrum held by broadcasters to ECNS licensees who provide broadcasting signal distribution services to broadcasters in the DTT Regulations is also of relevance to the Draft Regulations and in particular to the provisions of regulation 5(3). In this regard, regulation 5(3) creates an anomaly in that whilst broadcasters will be exempt from paying radio frequency spectrum fees, ECNS licensees who provide broadcasting signal distribution services will be required to pay such fees if the Authority provides for co-assignment in the DTT Regulations, as suggested by Sentech.
- 4.5 The effects of such an outcome would be discriminatory and there could, furthermore, be no rational justification for the imposition of fees on one category of licensees (i.e. ECNS licensees) for the use of broadcasting spectrum and not on another category of licensees (i.e. broadcasters) for the use of the same spectrum. The failure to properly provide for co-assignment in the DTT Regulations not only results in legal uncertainty as to the manner in which ECNS licensees are to provide broadcasting signal distribution services to broadcasters in the future, but also as to how radio frequency spectrum fees are to be levied in respect of ECNS licensees and broadcasters in respect of the use of broadcasting radio frequency spectrum.
- 4.6 In order to rectify this situation, it is imperative that the Authority, firstly provides for co-assignment in the DTT Regulations and secondly, amends regulation 5 (3) of the Draft Regulations to read as follows –
- "Unless the Authority determines otherwise broadcast services and broadcasting signal distribution services provided by ECNS licensees to broadcasters are not subject to the radio frequency spectrum fees."*

5 CONGESTION FACTOR

- 5.1 The "*congestion factor*" is one of the parameters which will be used by the Authority in determining the radio frequency spectrum licence fees payable by a licensee. In terms of regulation 8(d) it is proposed that the method to be used in determining whether a specific frequency is "*congested*" or not will be undertaken by way of the compilation and maintenance of a waiting list.
- 5.2 Sentech is of the view that the determination of congestion by means of a waiting list is not an optimum manner of determining whether or not a particular usage of radio frequency is congested. Firstly, there is little if not any transparency associated with such methodology. Secondly, even if the waiting list were to be published by the Authority, the Regulations fail to detail the manner in which high demand frequencies will be allocated to potential users and further fail to detail what mechanisms will be put in place to monitor and manage congestion. In this regard, the Regulations should, at a minimum, provide for the undertaking of regular reviews and audits by the Authority of congested spectrum. Where congested spectrum becomes uncongested, it will be important for such spectrum to be made available to other users and it is for this reason that radio frequency congestion must be actively monitored by the Authority in a transparent manner. It will also be important to ensure that where a previously congested band is freed from congestion that the fees payable in respect of such band are immediately adjusted downwards. This too can only take place through the active management and monitoring of congested spectrum by the Authority.
- 5.3 Sentech therefore proposes that the Regulations be amended to impose an obligation on the Authority to conduct regular audits and reviews of congested radio frequency spectrum and to also provide for the downward

adjustment of licence fees where previously congested spectrum becomes free from congestion. Such mechanisms, it is submitted, will in turn enable the Authority to attain one of its objectives which is the encouragement of radio users to switch to spectrally efficient technologies.

5.4 The international research undertaken by Sentech has also shown that certain other indicators of congestion should be taken into consideration when determining the congestion factor. These indicators are in addition to the indicator proposed by the Authority that congestion be determined with reference to the demand for a specific frequency spectrum and include the following -

5.4.1 the infrastructure technology used in conjunction with a specific frequency spectrum will often be determinative of whether or not the usage of a particular radio frequency is likely to be congested. Older technologies are often associated with capacity constraints whereas new technologies have been known to increase capacity and decrease congestion; and

5.4.2 the extent to which a licensee makes use of radio frequency spectrum assigned to that licensee. In this regard, it often occurs that a licensee fails to make full use of a radio frequency assignment. This in effect creates congestion in a specific frequency spectrum even though it is not being used.

5.5 Sentech believes that the indicators of congestion detailed in paragraphs 5.4.1 and 5.4.2 should be included in the Regulations in addition to the indicator of demand for a particular radio frequency spectrum.

5.6 As further support for Sentech's proposal that a system of active management and monitoring of the radio frequency spectrum be implemented by the Authority, it is submitted that the active management

and monitoring of the system will also ensure that there is no wastage of spectrum assignments and that licensees make full use of their radio frequency spectrum licensed rights. As an adjunct to this requirement, it is suggested that the Authority consider the implementation of the so called 'use it or lose it' rule as a mechanism to further promote the efficient and economic use of the spectrum and as a means of reducing congestion. Such an approach will also act as deterrent to the stockpiling of spectrum.

6 UNIDIRECTIONAL AND BI-DIRECTIONAL

6.1.1 In terms of the table to regulation 8(h), the unidirectional ("**UNIBI**") factor provides for the grant of a discount to licensees if they only provision a service in a single direction on a bi-directional link. Thus, if a licensee uses Frequency Division Duplexing ("**FDD**") as the modulation method for its service delivery and provides a uni-directional service, then in effect the licensee is only using one of the paired spectrum bands available on the point-to-point or point-to-multipoint link, whilst the other is wasted. In this regard, no other licensee is able to use the frequency band for providing a bi-directional service. This, notwithstanding, regulation 8(h) of the Regulations, provides for the discounting of the radio spectrum frequency licence fees payable by 25% or 50% depending on the service type (i.e. point-to-point or point-to-area) where a licensee makes use of a unidirectional service.

6.1.2 Sentech is of the view that the UNIBI factor does not sufficiently serve to penalise the licensee as the scarce spectrum is effectively being wasted. Sentech thus recommends that the licensee using paired spectrum for the purposes of providing a unidirectional service should pay the same fee as a licensee using it for bi-directional services. If these arguments are accepted by the Authority, the need for the UNIBI factor is thus rendered redundant and in Sentech's view the UNIBI factor in regulation

8 (h) should be removed from the Regulations.

7 AREA STERILIZED (ASTER)

- 7.1 The Authority has indicated that one of the parameters for calculating radio frequency spectrum licence fees will be the extent to which a particular area is sterilized by the use of a specific radio frequency in that area. The concept of a sterilized area is essentially a reference to the geographic area over which a given transmitting station radiates. As only one licensee is able to operate in sterilized area on an interference-free basis, the intention of this parameter is to limit the area size within which a licensee will be able to use assigned radio frequency spectrum in order to allow more licensees to use the same frequency spectrum in South Africa. This intention is realised by increasing the radio licence fee to an amount which is commensurate with the geographic size of the sterilized area. In effect, the larger the area - the higher the licence fee.
- 7.2 It appears from the Discussion Document and the Regulations that the Authority intends to use the theoretical method of calculating the sterilized area by allocating different ASTER factors to pre-determined radius ranges. Sentech submits that it is not desirable to use the theoretical method in calculating the sterilized area as such method will be unduly prejudicial to current and prospective licensees as they will be required to pay radio licence fees based on a hypothetical range, irrespective as to whether such range is used by the licensee. This, in turn, will undermine the Authority's aim to promote efficient use of the spectrum as spectrum will be seen as being congested whilst in reality it is not being fully utilised.
- 7.3 In order to avoid the negative consequences associated with using a theoretical range to determine the ASTER factor, it is proposed by Sentech that the ASTER factor be determined with reference to the actual area

sterilized by the use of radio frequency spectrum in that area by a licensee.

- 7.4 The Authority has stated at paragraph 7.6.4 on page 24 of the Discussion Document that a licensee will only be able to request a change to its radio frequency assignment upon the renewal of its licence. Sentech is concerned that this will be discriminatory to those licensees who choose to take out multi-year licences and therefore requests that this provision be amended to record that changes to assignments may be made as and when the same may be required by a licensee.

8 **COMPETITION IN THE MARKET**

- 8.1 In the South African context, the communications sector is dominated by operators with significant market power and with considerable cash reserves. Whilst, the Authority has made it clear that it intends to create a market where radio frequency spectrum is available to all users on an equal and competitive footing, Sentech is concerned that 2 (two) policy approaches referred to in the Discussion Document may undermine this objective. These are spectrum trading and auction processes for the award of high demand spectrum. Each of these approaches is discussed by Sentech in detail below.

8.2 **Spectrum trading**

- 8.2.1 In the Discussion Document (see second paragraph on page 17 of the Discussion Document), the Authority makes mention of the granting of spectrum assignments with the right to engage in spectrum trading. However, no further explanation is given as to what is meant by the reference to "*spectrum trading*", how it will be implemented or what the role of the Authority would be from an administrative perspective where spectrum trading is implemented.

8.2.2 Sentech's research has shown that spectrum trading is a tool used in countries with developed and mature telecommunications markets, such as the United Kingdom. Even though spectrum trading has its advantages, Sentech is of the opinion that the introduction of spectrum trading at this stage would be detrimental and that this should only be a consideration once there is effective competition within the sector.

8.3 Auctions as a process for awarding scarce spectrum

8.3.1 In regulation 3(1) of the Regulations reference is made to the use of auctions and other internationally accepted methods of determining the price for radio frequency spectrum. Furthermore, regulation 5(2) specifically provides that -

"where the Authority determines that the assignment of frequency should be made on a competitive basis, the radio frequency spectrum licence fee may be determined on the basis of an auction".

8.3.2 Auctions which, by their very nature, favour those bidders with access to sizable financial reserves are not an appropriate mechanism for the allocation of valuable spectrum where one of the objectives in allocating such spectrum is to promote increased competition. Rather than securing the equitable allocation of valuable spectrum, auctions will result in the concentration of high demand spectrum in the hands of a few operators with significant market power who already have considerable grants of spectrum by virtue of former historic entitlements.

8.3.3 Until such time as there is effective competition in the sector, Sentech is of the view that other processes, such as tenders, should be used as a means of allocating limited quantities of spectrum. If, auctions are to be used as a mechanism at all by the Authority then it will be necessary for the Authority to impose safeguards to promote competition and to

reduce the impact of dominant operators.

9 FEE DETERMINATION

- 9.1 Regulation 4 details the manner in which radio frequency spectrum fees will be determined and provides that the fees payable for each category of frequency spectrum will either be determined by a pricing formula or by the application of the minimum fee.³ Both the unit price per MHz of frequency spectrum and the minimum fees payable are detailed in Annexure "A" to the Regulations. In terms of Annexure "A", the minimum fee payable will be set at R120.00 and the unit price per MHz paired will be set at R2000.00.
- 9.2 The correct setting of the minimum fee level and of the parameters which will differentiate the fees payable for high and low levels of usage is critical to the operation of API spectrum pricing. If fees are too low, they may encourage a misallocation of radio frequency resources. If they are set at too high a level, they may act as a disincentive to enabling technologies and they may also result in frequency bands becoming vacant thereby reducing the many economic benefits to be derived from the use of radio frequency spectrum.
- 9.3 Sentech is concerned that the unit price of R2000.00 per MHz paired is too high and that the unit price should be set at R450.00. As the unit price will be the basis for the calculation of the radio frequency spectrum fees with reference to the parameters detailed in regulation 8 of the Regulations⁴, it is submitted that it should be set at a reasonable level and at one which will not result in the imposition of excessively high radio licence fees once the

³ Regulation 4(a) of the Regulations.

⁴ The parameters to be used by the Authority in determining radio frequency spectrum fees are –(i) bandwidth; (ii) frequency factor; (iii) geographic factor; (iv) congestion factor; (v) degree of sharing; (vi) area sterilized; (vii) minimum hop length; and (viii) unidirectional factor.

values attributable to the parameters in the formulae set out in regulation 6 have been applied in the determination of the fee. It will also be important to ensure that there is equitable access to the spectrum by new entrants and smaller operators. The setting of the unit price must thus be reflective of this requirement.

- 9.4 Where the unit price is set at a level which does not meet this requirement, this objective will be undermined. For these reasons, Sentech urges the Authority to reconsider the proposed unit price of R2000.00 and to seriously consider reducing the unit price to R450.00.

10 INFORMATION SUBMITTED TO THE AUTHORITY

- 10.1 Paragraph 7.7 on page 25 of the Discussion Document provides as follows –

"The new pricing system does not necessarily cause the Radio Frequency Spectrum more expensive, but it remains a scarce resource. Assignment of Radio Frequency Spectrum remains at the discretion of the Authority and applicants for an assignment of Radio Frequency Spectrum (including additional spectrum) should furnish all the information required by the Authority to support their application."

- 10.2 Regulations 12 and 13 of the Regulations further provide that -

"Licensees must furnish all information concerning the equipment they deploy as required by the Authority."⁵

"Assignment of Radio Frequency Spectrum and the issuance of licences to use Radio Frequency Spectrum is at the discretion of the Authority and applicants for Radio Frequency Spectrum must furnish all information to

⁵ Regulation 12 of the Regulations.

support their application as required by the Authority.⁶

- 10.3 In order for there to be legal certainty as to the information to be submitted to the Authority in respect of deployed equipment and in support of radio frequency applications, it is submitted that this information should be specifically prescribed by the Authority in the Regulations. The Regulations should accordingly be amended to detail the information to be submitted to the Authority in terms of regulations 12 and 13.

11 CONCLUSION

- 11.1 Sentech would like to once again thank the Authority for giving it this opportunity to comment on the Regulations and confirms that it would like an opportunity to make oral representations to the Authority on the Regulations.
- 11.2 Please do not hesitate to contact Dingane Dube of Sentech on 011 691-7009 should you have any queries or should you require any additional information from Sentech in respect of this submission.

⁶ Regulation 13 of the Regulations.