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General Notice

COMMUNICATIONS REGULATORY AUTHORITY OF NAMIBIA

No. 673

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SPECTRUM ASSIGNMENT STRATEGY

The Communications Regulatory Authority of Namibia herewith publishes its Spectrum Assignment Strategy set out in Schedule 1 effective from date of publication in the *Gazette*.

SCHEDULE 1

SPECTRUM ASSIGNMENT STRATEGY

1. FOREWORD

As per section 99 of the Communications Act, 2009 the Authority is vested with the control, planning, administration, management and licensing of the radio spectrum. The Authority deems it prudent to keep abreast of the latest regulatory trends and technology developments to ensure the efficient use of spectrum as a limited resource taking into account the spectrum forms the basis for development of the ICT sector.

To this end the Authority has developed a spectrum assignment strategy setting out the Authority's objectives for spectrum management and providing clarity in respect of the Authority's approach to the control, planning, administration and licensing of radio spectrum.

The said strategy will form the basis for review of the Authority's spectrum regulatory framework in accordance with regulatory processes allowing for public consultation during the review process.

2. OBJECTIVES

Radio Frequency Spectrum is a limited national resource that is critical in providing backbone, distribution, and last mile solutions for commercial, civil, public, community, security, and personal communication services. It therefore requires prudent management to ensure equitable access and efficient utilisation to meet the communication needs of all stakeholders. Spectrum management takes place within a regulatory framework comprised of strategy, legislation, regulations and procedures.

Authority will fulfil its role in management of spectrum with the following objectives in mind-

- i) Facilitate the availability of spectrum to be used as a tool to develop communications services and access to ICT infrastructure as a basis for social and economic development in urban and rural areas;
- ii) Promote competition through minimisation of constraints on spectrum use within a service and technology neutral license regime allowing similar services to be offered on different technology platforms;
- iii) Promote the effective and efficient use of spectrum within the digital dividend to address gaps in communications services and access to ICT infrastructure;
- iv) Set conditions for spectrum use to ensure efficient use of a scarce resources and prevent anti-competitive practices such as hoarding of spectrum;
- v) Promote and if necessary enforce freeing up spectrum space for assignment to emerging technologies and services by phasing out ageing technologies;
- vi) Ensure fair distribution of spectrum between market players to provide services in conjunction with the category of service licence awarded;
- vii) Set fees for spectrum use through an appropriate fee system that support the activities of the Authority in a sustainable manner and ensure efficient use of spectrum; and
- viii) Monitor, investigate and enforce adherence to the regulatory framework as pertaining to spectrum management as set out by the Authority.

The aforementioned objectives will support the Authority in realising the broadband targets set by the SADC ICT Ministers at its meeting held 27 September 2018 as stated below -

- (i) By 2025, 80% of the population of Namibia should be covered by broadband services. In particular, at least 80% of rural areas should be within the reach of entry level broadband services, be it fixed or mobile; and
- (ii) By 2025, 50% of households In Namibia should be connected to broadband.

The Authority will also take into consideration the definitions for entry level broadband as set out below when considering the assignment of spectrum.

Entry level broadband shall mean to have the following definitions:

- (i) Mobile Broadband: at least 2 Mbps (downlink); and

- (ii) Fixed Broadband: at least 4 Mbps (downlink).

3. ATTAINING RURAL CONNECTIVITY

Spectrum is the cornerstone to provide telecommunications and broadcasting services to rural communities in all regions of Namibia. To this end the Authority will consider assignment of spectrum subject to licence conditions including but not limited to rollout obligations as appropriate to the spectrum licence band applied for to attain rural connectivity as per the aforementioned targets set by the SADC ICT ministers as well as the achieving the targets set out in the Harambee Prosperity Plan listed below-

- (i) 80% broadband connections and usage to all primary and secondary schools in Namibia to allow e-learning by 2020
- (ii) Broadband connections and usage to 70% of the health facilities in Namibia to allow e-health by 2020
- (iii) 100% broadband connections and usage to all public sector agencies in Namibia to allow for e-governance by 2020
- (iv) 100% coverage by digital TV and radio broadcast to all households by 2020

4. FREQUENCY BAND PLAN OF NAMIBIA

The International Telecommunication Union (ITU) divided the world in three regions with Africa forming part of Region 1 together with mainly Western Europe and the Russian Federation. Thus the Authority will allocate radio spectrum in line with regulations and guidelines issued by the ITU for Region 1 and the Frequency Band Plan for Namibia as published in the *Gazette* will be based on the spectrum allocations of ITU Region 1.

The Frequency Band Plan for Namibia sets out what radio services can use which frequencies as well as the pre-conditions of use as applicable. The Authority is vested with the power to prescribe a frequency band plan in respect of any part of the radio frequency spectrum (Section 100(1) of the Communications Act, 2009). The Authority will review the frequency band plan, at least every four (4) years based on the outcomes of the ITU World Radio Conference and subsequent ITU regulations. The Authority will amend frequency band allocations and regulations as required following due regulatory process.

Where spectrum licensees are required to migrate to new frequencies as a result of a new Frequency Band Plan coming into effect, the Authority will address each migration on a case-by-case basis in accordance with the Regulations Setting-Out Spectrum Licencing procedures.

5. FREQUENCY CHANNELING PLANS TO BE DEVELOPED BY THE AUTHORITY UNTIL 2020

The Authority has commenced with development of frequency channelling plans in accordance with the Final Acts of WRC-15 for telecommunications services for IMT and PPDR implementation and the SADC ICT Minister's decision in respect of implementation of digital sound broadcasting.

5.1 Telecommunications services using IMT technologies

5.1.1 The spectrum band 694-790 MHz (700 band)

The spectrum band **694-790 MHz (700 band)** has been allocated to IMT services as per Resolution 223 at WRC-15. In addition thereto, member states are required to reserve spectrum in the

aforementioned band for PPDR services using IMT technologies in terms of Resolution 646 (Rev. WRC-15).

Work is currently in progress at CRASA and SADC level to propose frequency channel arrangements to include PPDR services using IMT technologies in the 700 band for consideration at an international level at the ITU Radio Assembly scheduled for November 2019(RA-19).

The Authority is participating in the process and is cognisant of any possible impact on the assignment of spectrum in the 700 band prior to the outcomes of RA-19.

5.1.2 The spectrum band 1427-1518 MHz (1500 band)

The spectrum band **1427-1518 MHz (1500 band)** has been allocated to IMT services as per Resolution 223 at WRC-15. Work is currently in progress at CRASA and SADC level to propose frequency channel arrangements for consideration at an international level at the ITU Radio Assembly scheduled for November 2019(RA-19).

The Authority will commence with a public consultation process for assignment of the aforementioned spectrum, licensing procedures and spectrum fees in 2020 based on the outcomes of RA-19.

5.1.3 The spectrum band 3300-3400 MHz (3300 band)

The spectrum band **3300-3400 MHz (3300 band)** has been allocated to IMT services as per Resolution 223 at WRC-15 contained in footnote 5429A. Work is currently in progress at CRASA and SADC level to propose frequency channel arrangements for consideration at an international level at the ITU Radio Assembly scheduled for November 2019(RA-19).

The Authority will commence with a public consultation process for assignment of the aforementioned spectrum, licensing procedures and spectrum fees in 2020 based on the outcomes of RA-19.

5.2 Broadcasting services

5.2.1 The spectrum band 87.5-108 MHz (FM analogue broadcasting)

The Authority is planning a review of the current frequency channeling plan in 87.5-108 MHz due to the high demand for frequencies to implement analogue FM radio frequencies. The aforementioned process will be concluded after public consultation on the impact of the new frequency channeling plan on current spectrum licensees, cross border frequency coordination and ITU approvals.

The Authority will commence with a public consultation process for assignment of the aforementioned spectrum, licensing procedures and spectrum fees in 2019 based on the outcomes of aforementioned processes.

5.2.2 The spectrum band 174-230 MHz (digital sound broadcasting)

The Authority is planning for implementation of digital sound broadcasting in accordance with the technical standards and regulatory framework guidelines approved by the SADC ICT Ministers in September 2017.

To Authority intends implementation of the Digital Audio Broadcasting (DAB) technology in the VHF III band from 174-230 MHz in accordance with the ITU GE06 agreement signed by Namibia in 2007. Implementation of DAB will provide for twelve broadcasting channels on a single frequency ensuring more efficient use of spectrum and better audio quality to provide radio broadcasting services going forward.

The frequency channelling plan will be finalised following a public consultation process in respect of available frequencies for assignment, licensing procedures, licence conditions and spectrum fees.

5.2.3 The spectrum bands 148.5-200 kHz and 535.5-1606.5 kHz (digital sound broadcasting)

The Authority is planning for implementation of digital sound broadcasting in accordance with the technical standards and regulatory framework guidelines approved by the SADC ICT Ministers in September 2017.

To date the Authority has not awarded any spectrum licences to provide short wave or medium wave analogue broadcasting services. The aforementioned spectrum bands are therefore unutilised to date.

Authority intends implementation of the Digital Audio Mondiale (DRM) technology in the 148.5-200 kHz and 535.5-1606.5 spectrum bands. Implementation of DRM will provide for four broadcasting channels on a single frequency ensuring more efficient use of spectrum, better audio quality and 40-50% energy savings to provide radio broadcasting services going forward.

The frequency channeling plan will be finalised following a public consultation process in respect of available frequencies for assignment, licensing procedures, licence conditions and spectrum fees.

6. SPECTRUM BANDS TO BE RELEASED FOR ASSIGNMENT BY 2019

The Authority has published the frequency channeling plans for **694-790 MHz (700 band) and 790-862 MHz (800 band)** in Government Gazette No, 6160, General Notice No. 423 dated 28 October 2016.

The Authority intends to make the aforementioned spectrum bands available for telecommunications services using IMT technologies after conclusion of its review of regulations in respect of spectrum licensing procedures, spectrum licence conditions and spectrum fee for the aforementioned bands. It is foreseen that these spectrum bands will be considered for assignment in blocks of 2 x 10 MHz to ensure equitable spectrum distribution between telecommunications service licensees in the 800 and 700 band respectively. The abovementioned spectrum bands will be open for application following the publication of a formal notice in the *Gazette* in 2019.

7. UTILISATION OF SPECTRUM LICENCE EXEMPT FREQUENCIES

The utilisation of licence exempt frequencies is subject to the Regulations regarding Licence Exempt Spectrum as published in the Government Gazette by the Authority from time to time. These regulations indicate spectrum bands, types of devices, maximum radiated power of field strength limits and channel spacing as well as relevant standards and any additional requirements for use of radio apparatus within these spectrum bands.

Use of radio apparatus within these bands must at all times comply with the following conditions-

- i) All radio apparatus must be type approved by the Authority in accordance with section 80 of the Communications Act and Regulations in respect of Type Approval and Technical Standards for Telecommunications Equipment as published in the Government from time to time;
- ii) The frequencies, transmitting power and external high-gain antenna of the radio apparatus must not be altered without a new type approval certificate being issued by the Authority;
- iii) The radio apparatus must be operated within, and not exceed, the technical parameters set out in the Table of Radio Frequency Spectrum Licence Exemptions as contained in the Regulations regarding Licence Exempt Spectrum;

- iv) The antenna of the radio apparatus must not be higher or above average ground level than the lowest point of the place where the radio apparatus operate effectively;
- v) The radio apparatus must not cause interference to any person issued with a spectrum licence by the Authority; and
- vi) The use of the radio apparatus in the licence exempt frequency spectrum operates on non-interference and zero protection basis from interference.

All telecommunications and broadcasting service licensees operating within the spectrum licence exempt spectrum bands shall provide information in regard to network infrastructure and services to the Authority for information purposes on a bi-annual basis.

CRASA and SADC is current considering the inclusion of SRDs to provide eLTE-IoT services in the 865-868 MHz spectrum band on a spectrum licence exempt basis subject to imposition of technical conditions in respect of power output, maximum occupied bandwidth and spectrum access and mitigation requirements. A final decision will be made in this regard after WRC-19.

Licence exempt spectrum bands in Namibia comply with ITU Region 1 regulations. Any operation of radio apparatus operating in breach of the said regulations constitutes a regulatory offense, as this equipment is capable of causing harmful interference to licensed services in Namibia. The Authority will take all measures as provided for by section 102 of the Act to prevent usage of such radio apparatus.

8. SPECTRUM ASSIGNMENT

Harmonisation in the use of radio spectrum is crucial to ensure amongst others, interoperability between systems and networks, facilitating frequency coordination between countries and establishing international systems.

The Authority, assumes full responsibility for spectrum assignment based on the principles of independent decision-making and is thus impartial with respect to all market players with the aim to promote competition and provision of services in rural and urban areas on an equal basis, to ensure that sufficient spectrum is available to provide services highly valued by end users and meet public safety and security requirements and enforce the efficient use of a scarce resource. Assignment of spectrum will be conducted as set out below –

- i) Any spectrum band which is vacant or has become vacant as a result of migration to other spectrum bands at the instruction of the Authority will not be open for application until so designated by the Authority. The Authority will issue a public notice informing all stakeholders that the spectrum band is being opened up for use, set out the method for awarding of spectrum licences in the said spectrum band and state all applicable spectrum fees;
- ii) A spectrum licence is awarded on a right-to-use basis in accordance with the Communications Act and does not confer ownership rights to the recipient of a spectrum licence.
- iii) No service licensee will be assigned more spectrum than necessary and the Authority may impose caps on the amount of spectrum to be assigned to a single licensee to ensure fair and equitable assignment of spectrum to all service licensees. Hoarding of spectrum and speculative acquisition of spectrum are not conducive to efficient spectrum use and the objects of the Act. The Authority shall not tolerate these practices at any time and will cancel such spectrum licences after giving due notice to the licensee in question;
- iv) The award of spectrum licences will be done in strict adherence to the Frequency Band Plan of Namibia and associated frequency channeling plans published by the Authority from

time to time. The Authority will not accept any application that does not comply with the Frequency Band Plan of Namibia;

- v) All proposed spectrum licences except service licence exempt service licence categories, will be published for public comments before being awarded to the applicant subject to approval by the Authority's Board of Directors;
- vi) Regulations and/or notices in regard to spectrum licences are published in the Government Gazette following pre-described regulatory processes and public consultations as and when required. The purpose is to enable the public to submit comment on the spectrum licence under consideration by the Authority. Public comments received by the Authority will be taken into consideration based only on its technical and legal merits.
- vii) Applications for spectrum licences submitted by entities that does not require a telecommunications or broadcasting service licence will be considered on a first-come-first-serve basis in accordance with the regulatory process set out in the Regulations Setting Out Spectrum Licensing Procedures as published by the Authority from time to time.
- viii) Application for spectrum licences by service licences to be utilised for provision of telecommunications and broadcasting services will be considered through the application of a hybrid model allowing the Authority to follow an administrative and/or flexible-rights of use approach to consider the spectrum licence based on the spectrum band applied for, the conditions to be attached to the spectrum licence, the duration of the spectrum licence and the market value of the spectrum. The relevant regulatory processes is set out in the Regulations Setting Out Spectrum Licensing Procedures as published by the Authority from time to time.
- ix) The Authority may award a spectrum licence limiting the utilisation thereof to a specific geographical area or to implement licensed shared access allowing for sharing of spectrum, when more than one service has been allocated on a co-primary basis in the same spectrum band as per the Frequency Band Plan of Namibia.

9. SPECTRUM LICENCE CONDITIONS

All spectrum licences awarded by the Authority will be subject to conditions as set out in the licensing conditions attached to the spectrum licence. The aforementioned conditions may include but is not limited to-

- (i) Efficient use of spectrum;
- (ii) Duration of spectrum licence;
- (iii) Spectrum licence area;
- (iv) Technical Conditions;
- (v) Exclusive or shared utilisation of spectrum;
- (vi) Payment of spectrum fees;
- (vii) Roll Out Obligations;
- (viii) Prohibition of trading or sub-leasing of spectrum licences;
- (ix) Prohibition of hoarding of spectrum;

- (x) Universal Access and Service obligations to ensure rollout of services in rural areas;
- (xi) Reporting, monitoring and compliance matters in respect of the spectrum licence awarded;
- (xii) Regulatory offenses and penalties;
- (xiii) Amendment, renewal or modification of spectrum licences; and
- (xiv) Revocation of spectrum licences.

Any breach of the said conditions will constitute a regulatory offense leading to imposition of penalties or the cancellation of the spectrum licence by the Authority.

10. SPECTRUM PRICING

The Authority is cognisant of the fact that spectrum is a limited resource and that the value of spectrum is affected by a combination of technical, socio-economic and fiscal factors as applicable to each spectrum band allocated to one or more services in the frequency band plan.

Going forward the Authority will base spectrum fees taking into consideration -

- (i) The availability or scarcity of spectrum for assignment in a specific spectrum band;
- (ii) The market value of spectrum made available for assignment by the Authority;
- (iii) Utilise spectrum pricing to enforce the efficient use of spectrum through deployment of more spectrally efficient equipment by licensees;
- (iv) The level of demand for spectrum in a given spectrum band;
- (v) Consumer demand for services;
- (vi) Impact of inflation based on annual consumer price indexes as published from time to time;
- (vii) Prevention of spectrum hoarding resulting in a negative impact on the competition and growth of the ICT sector; and
- (viii) Full cost recovery of costs incurred by the Authority in executing its mandate as set out in the Communications Act given that the Authority is not funded in any way by the Namibian Government.

In the event that spectrum is assigned through a spectrum auction the applicable spectrum fees will be determined through the outcome of the bidding process.

10.1 Spectrum Application Fees

In order to limit the administrative burden for both the Authority and entities applying for spectrum licences, the Authority will not charge any application fees in respect of spectrum licences.

The Authority will apply a recurring annual spectrum fee, payable in advance, in respect of all spectrum licences.

10.2 Administrative Spectrum Fees

The Authority will apply an administrative approach in setting spectrum fees in respect of amateur radio services, aeronautical services, maritime services and inmarsat satellite services.

Spectrum licences in respect of the aforementioned services will be charged annually at a flat fee as set out in the spectrum fee regulations as published in the *Gazette*. These spectrum fees will be subject to inflationary increases as determined by the Authority from time to time upon regular review of the spectrum fee regulations.

Further thereto, the aforementioned spectrum fees will be payable in advance for each calendar year. Non-payment of spectrum fees by the due date as indicated on the spectrum invoices will result in revocation of the spectrum licence by the Authority.

10.3 Incentive-based Spectrum Fees

The Authority will apply an incentive-based approach in setting spectrum fees in respect of all spectrum not subject to a flat fee as set out in 7.2. The application of incentive-based spectrum pricing will allow to the Authority to set spectrum fees based on factors such as -

- (i) Bandwidth assigned to a licence;
- (ii) Increasing or decreasing coverage areas;
- (iii) High demand or low demand for spectrum band;
- (iv) Reflect the physical characteristic of different frequency bands;
- (v) Exclusive or shared utilisation of spectrum assigned;
- (vi) Duration of the spectrum licence;
- (vii) Rural or urban utilisation of assigned spectrum; and
- (viii) Transmitter effective radiated power.

The Authority will apply an incentive-based pricing approach to radio communication services, mobile services, fixed services, broadcasting services and land mobile services. The applicable spectrum fee in respect of the service to be provided will be formula based as set out in the spectrum fee regulations.

The Authority is of the opinion that the introduction of incentive based spectrum pricing will provide the necessary incentives to facilitate efficient use of spectrum by licensees.

10.4 Spectrum Auctions

In the event that the Authority determines that spectrum will be assigned to interested licensees through an auction process, the applicable spectrum fees will be determined by the outcome of the bidding process.

11. RE-ASSIGNMENT AND RE-FARMING OF SPECTRUM

11.1 Re-assignment

Spectrum licences are awarded on a “right-to-use” basis in accordance with the Communications Act and therefore the Authority reserves the right to re-assign spectrum based on-

- (i) Changes to allocations of international spectrum bands as agreed within the International Telecommunications Union related to worldwide technological development requiring re-alignment of the National Frequency Plan to international standards;

- (ii) Efficient use of spectrum by license holder in terms of actual frequency usage and occupancy; and
- (iii) To ensure the fair and equitable distribution of spectrum between telecommunications service licensees providing similar services through the imposition of spectrum caps. Spectrum caps will limit the amount of spectrum assigned to a single telecommunications service licence to allow for the promotion of competition and efficient use of spectrum by the aforementioned licensees.

11.2 Re-Farming of spectrum to deploy latest technologies

The Authority has implemented a service and technology neutral service licence regime that allow licensees to provide services utilising a variety of technologies without the need to amend their existing service licence or apply for an additional service licence.

Spectrum licences are awarded in accordance with the frequency band plan and subject to the conditions attached to each spectrum licence. Thus the operator may re-farm its existing use of a frequency band to ensure higher efficiency in spectrum usage or occupancy to the benefit of the end user by implementing new technologies to provide new services provide that -

- (i) The change in service and/or technology complies with the spectrum allocations as set out in the frequency band plan of Namibia; and
- (ii) That the licensee has applied for amendment of the licence and/or licence conditions attached to its spectrum licence and approval from the Authority in this regard prior to deployment of the new service and/or technology.

The Authority will charge spectrum fees in direct correlation with the utilisation of the spectrum licence. For example when spectrum is re-farmed and fixed links are replaced with international mobile communications (IMT) such as LTE the Authority will charge spectrum fees as applicable for IMT services as from the date the amendment of spectrum licence reflecting a change in licence conditions is approved.

12. CONCLUSION

The spectrum assignment strategy as presented by the Authority will be implemented through the review of the Authority's current spectrum management regulatory framework during the course of next two years. Stakeholders will be able to provide input to the review of regulations during the rulemaking process which will commence with the publication of reviewed regulations in the *Gazette* inviting public comments.

To this end the Authority will undertake a review of the following regulations -

- (i) Spectrum licensing procedures;
- (ii) Spectrum licence conditions; and
- (iii) Spectrum fee regulations.

The Authority will consider the review of the frequency band plan of Namibia and spectrum licence exempt regulations after conclusion of the next ITU World Radio Conference (WRC-19) to be held in November 2019. Such a review will be based on the Final Acts of WRC-19.

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