
GENERAL NOTICES • ALGEMENE KENNISGEWINGS

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA NOTICE 597 OF 2019



ELECTRONIC COMMUNICATIONS ACT 2005, (ACT NO. 36 OF 2005)

NOTICE ON THE LICENSING PROCESS FOR INTERNATIONAL MOBILE TELECOMMUNICATIONS (“IMT”) SPECTRUM, INVITING COMMENTS IN RESPECT OF THE PROVISIONING OF MOBILE BROADBAND WIRELESS OPEN ACCESS SERVICES FOR URBAN AND RURAL AREAS USING THE COMPLIMENTARY BANDS, IMT700, IMT800, IMT2300, IMT2600 AND IMT3500.

1. The Independent Communications Authority of South Africa (“the Authority”) hereby publishes the Information Memorandum aimed at outlining the Authority’s intentions with regard to the licensing process for International Mobile Telecommunication (IMT) spectrum pursuant to consideration¹ of the Policy on High Demand Spectrum and Policy Direction on the Licensing of a Wireless Open Access Network dated 26 July 2019². The Information

¹ In terms of section 3(4) of the Electronic Communications Act, 2005 the Authority is duty bound to consider policies and policy directions issued by the Minister in terms of the ECA.

² As issued by the Minister of Communications in terms of Government Gazette Notice 1013, Gazette No. 42597 dated 26 July 2019.

Memorandum is aimed at providing guidance to prospective applicants on, *amongst other things*, the process and criteria to be applied on the licensing process in terms of regulations 6 and 7 of the Radio Frequency Spectrum Regulations 2015, read with sections 31 (3), and 33 of the Electronic Communications Act, 2005 (Act No. 36 of 2005).

2. The notice provides information to stakeholders and prospective applicants intending to apply for the radio frequency spectrum licences within the designated Radio Frequency Spectrum Assignment Plans³ in the ranges 703 – 790 MHz (“IMT700”), 790 – 862 MHz (“IMT800”), 2360 – 2400MHz (“IMT2300”), 2500 –2690MHz (“IMT2600”), and 3400 – 3600 MHz (“IMT3500”) for purposes of providing national broadband wireless open access services.
3. Interested persons are hereby invited to submit written representations, including an electronic version of the representation in Microsoft Word, on the views expressed in the Information Memorandum by no later than 16h00 on Friday, 31 January 2020.
4. Written representations or enquiries may be directed to:

The Independent Communications Authority of South Africa (the Authority)

350 Witch-Hazel Avenue,
Eco Point Office Park,
Eco Park,
Centurion,
Gauteng.

Attention:

Mr. Davis Kgosimolao Moshweunyane

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³ Published in Government Gazette No. 38640 on 30 March 2015

5. All written representations submitted to the Authority pursuant to this notice shall be made available for inspection by interested persons from 16h00 on Friday, 31 January 2020 at the ICASA Library or website (www.icasa.org.za) and copies of such representations and documents will be obtainable on payment of a fee.
6. Where persons making representations require that their representation, or part thereof, be treated confidential, then an application in terms of section 4D of the Independent Communications Authority of South Africa Act, 2000 (Act No. 13 of 2000) ("ICASA Act") must be lodged with the Authority. Such an application must be submitted simultaneously with the representation. Respondents are requested to separate any confidential material into a clearly marked confidential annexure. If, however, the request for confidentiality is refused, the person making the request will be allowed to withdraw the representation or document in question.
7. The legislative framework for and guidelines for confidentiality requests are set out in terms of section 4D of the ICASA Act and contained in General Notice No. 849 in Government Gazette 41839 of 17 August 2018.



DR. KEABETSWE MODIMOENG
ACTING CHAIRPERSON
ICASA

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1. OVERVIEW

- 1.1. On 28 May 2010, the Authority initiated the process of developing the High Demand Radio Frequency Spectrum Licensing Framework Regulations by promulgating General Notice R. 469, Government Gazette 33248 of 28 May 2010, as amended, for the 2.6 and 3.5 GHz spectrum bands.
- 1.2. On 31 March 2011, the Authority published the Radio Frequency Spectrum Regulations, 2011 in General Notice No. 184, Government Gazette 34172 of 31 March 2011, which, *amongst others*, repealed the High Demand Radio Frequency Spectrum Licensing Framework Regulations, 2010.
- 1.3. On 15 December 2011, the Authority published a draft Spectrum Assignment Plan for the radio frequency range 790 – 862 MHz (800 MHz) and 2500 – 2690 MHz (2.6 GHz) in General Notice No. 911, Government Gazette 34872 of 15 December 2011.
- 1.4. Further, the Authority published the Draft Invitation To Apply to solicit public comments on the award / granting of Radio Frequency Spectrum Licence to provide mobile broadband wireless access service for urban and rural areas using the complimentary bands, 800 MHz and 2.6 GHz in General Notice 912, Government Gazette No. 34872 of 15 December 2011. The Draft Invitation to Apply was subsequently withdrawn.
- 1.5. On 06 December 2013, the Minister of Communications published South Africa Connect: Creating Opportunities, Ensuring Inclusion - South Africa's Broadband Policy ("SA Connect") in General Notice 953, Government Gazette No. 37119 of 6 December 2013. SA Connect gives expression to the vision set out in the National Development Plan 2030 ("NDP") of a "*seamless information infrastructure by 2030 that will underpin a dynamic and connected vibrant information society and a knowledge economy that is more inclusive, equitable and prosperous*".⁴ SA Connect was followed by the Integrated ICT White Paper Policy, 2016⁵ and subsequently by the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network published in terms of Government Gazette No. 42597 of 26 July 2019.
- 1.6. The focus of the aforementioned policies remain universal provision of broadband services including in particular ensuring connectivity for public services i.e. education, health and government services. The policies further seek to operationalise the New Growth Path and the

⁴ Page 190.

⁵ Published in terms of Government Gazette No. 37119 on 06 December 2013

Strategic Integrated Project⁶ (SIP) 15, which deals with expanding access to communications technology by ensuring universal service and access to affordable and secure broadband services by all South Africans, prioritising rural and under-serviced areas in order to stimulate economic growth.

- 1.7. SA Connect⁷ acknowledges that the slow deployment of fixed broadband services and its relatively high cost, has meant that over the years mobile broadband rapidly became the primary form of broadband access rather than providing a complementary service to fixed broadband services as it has done in more developed economies.
- 1.8. On 30 March 2015, the Authority published the Radio Frequency Spectrum Regulations, 2015 in General Notice No. 279, Government Gazette No. 38641 of 30 March 2015. These Regulations repealed the Radio Frequency Spectrum Regulations, 2011 and the Spectrum Reallocation for Radio Frequency Identification (RFID) Systems⁸.
- 1.8. On 11 September 2015, the Authority published the Information Memorandum for Radio Frequency Spectrum Prospective Licence in General Notice No. 914, Government Gazette No. 39203, with the purpose of providing information to prospective applicants intending to apply for the radio frequency spectrum licenses within the designated range, 2500 – 2690MHz (“the 2.6 GHz band”) and 790 – 862 MHz (“the 800 MHz band”) and 703 – 790 MHz (“the 700MHz band”) for the purposes of providing national broadband wireless access services.
- 1.9. On 15 July 2016, the Authority published an ITA for a Radio Frequency Spectrum Licence to provide mobile broadband wireless access services for urban and rural areas using the complimentary bands: 700MHz, 800MHz and 2.6 GHz in General Notice No. 438, published in Government Gazette No. 40145 of 15 July 2016.
- 1.10. On 08 October 2018, the Authority withdrew the ITA that was published on 15 July 2016 in terms of General Notice No. 624, Government Gazette No. 41965 of 08 October 2018.
- 1.11. On 26 July 2019, the Minister of Communications and Digital Technologies (formerly Minister of Communications) published the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network. The Authority has a legal duty to consider the Policy

⁶ Expanding Access to Communications Technologies.

⁷ Published in the Government Gazette No. 37119 on 06 December 2013.

⁸ Published in the Government Gazette No. 31127 on 05 June 2008

on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network in exercising its powers and performing its duties under the Electronic Communications Act, 2005 (Act No. 36 of 2005) ("ECA").

- 1.12. The Authority is initiating the licensing process for the radio frequency spectrum in the bands: IMT700, IMT800, IMT2300, IMT2600 and IMT3500 for the purposes of providing national broadband wireless open access services.
- 1.13. Mobile services play a crucial role in providing communication services (voice and data) to consumers but also to many enterprises, especially in the SMME sector. Additionally, various econometric analyses have demonstrated that broadband has a positive impact on economic growth in both developing and developed markets.
- 1.14. The World Bank statistics showed that in developing markets an expansion of broadband access (population penetration) of ten (10) percentage points can result in expansion of the Gross Domestic Product by 1.4 percentage points. Furthermore, the World Bank statistics show that every 1000 new subscribers connected to broadband internet services can result in the creation of 80 new job opportunities. These indicators are critical to South Africa, which needs to breach the digital divide, improve its economic growth and create new jobs⁹.
- 1.15. In order to realise Government's rollout targets for broadband services and to achieve articulated public objectives (in line with *inter alia* SA Connect, NDP, the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network and Government Priority Outcomes: 4, 6, 12, and 14¹⁰), the Authority is commencing with the licensing process for IMT spectrum bands.
- 1.16. The Authority is of the view that mobile telecommunication technologies are a critical component for achieving the goal of 'broadband for all citizens' in South Africa. Finally, it is also important to

⁹ A comprehensive review of the literature in this area by Christine Qiang, Carlo Rossotto & Kaoru Kimura, Economic impact of broadband, Information and Communication for Development, World Bank, 2009, pp. 35-50.

¹⁰ <https://www.poa.gov.za/Pages/MTSF.aspx>

note that government has identified the release of spectrum as one of the seven key areas of focus to stimulate investments and revive the economy in the short to medium term.

2. INTRODUCTION

- 2.1. South Africa experiences continued growth in demand for more spectrum as a result of significant growth in traffic. The deficiency of assigned Spectrum for IMT brings constraints and challenges in the provision of broadband services. To address South Africa's bandwidth deficiency, the currently assigned bandwidth of 566 MHz IMT spectrum needs to be increased to 958 MHz in the immediate future in accordance with the Authority's five (5) year strategy.
- 2.2. There is a need to assign a minimum of 1011 MHz and a maximum of 1036 MHz for use by IMT (incl. GSM) by 2020 to achieve SA Connect targets. It is the Authority's position that the licensing of IMT700, IMT800, IMT2300, IMT2600 and IMT3500 will contribute a significant bandwidth towards achieving the SA Connect targets.
- 2.3. The IMT700, IMT800, IMT2300, IMT2600 and IMT3500 bands have been identified worldwide for IMT services. These bands complement each other in the sense that they fulfil the requirements for capacity and coverage which make them suitable for rural and urban areas and for bridging the digital divide.
- 2.4. It is for these reasons that the Authority has decided on the simultaneous licensing of the IMT700, IMT800, IMT2300, IMT2600 and IMT3500 bands, in order to enhance competition and to increase broadband coverage, and in so doing bridge the digital divide and the disparities between urban and rural access to broadband networks.
- 2.5. The Authority has considered the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network in accordance with section 3 (4) of the ECA and intends to embark on the licensing process as outlined in Annexure A. The aforementioned bands have been specifically (and or by implication) identified for prioritization by the Authority for purposes of assignment in accordance with Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network and the Authority's Strategic Plan 2015 - 2019.
- 2.6. It is important to adopt global harmonisation channel arrangements and alignment with other regional agreements on the appropriate channel plans for the IMT700, IMT800, IMT2300, IMT2600 and

IMT3500 frequency bands for the International Telecommunications Union (ITU) Region 1 in order to achieve economies of scale, enable global roaming and benefit from the maturity of the ecosystem.

- 2.7. The Southern African Development Community ("SADC") Frequency Allocation Plan ("FAP") of 2016 creates a framework for harmonisation across SADC on the use of the radio frequency spectrum. The 2016 SADC FAP was developed considering international best practice in the development of Frequency Band Plans and considering the needs of the SADC Members.

3. OBJECTIVES

- 3.1 The main aim of licensing IMT700, IMT800, IMT2300, IMT2600 and IMT3500 is to ensure nationwide broadband access for all citizens by 2020. This will be achieved by:
 - 3.1.1 promoting the empowerment of historically disadvantaged groups ("HDGs"), in particular women, youth and persons with disabilities;
 - 3.1.2 increasing universal service and universal access through prioritising rural connectivity and inclusivity;
 - 3.1.3 promoting the interest of consumers with regard to the price, quality and variety of electronic communications services;
 - 3.1.4 making provision for wireless open access network ("WOAN");
 - 3.1.5 promoting investment in the sector and economic growth;
 - 3.1.6 encouraging infrastructure sharing;
 - 3.1.7 promoting competition and innovation by licensing spectrum on a technology neutral basis; and
 - 3.1.8 Reducing cost to communicate specifically data cost.

4. LEGAL FRAMEWORK

- 4.1 This publication of Information Memorandum is guided by the Constitution of the Republic of South Africa, 1996 (the "Constitution"), the ICASA Act, the ECA, the National Radio Frequency Plan 2018¹¹ ("NRFP"), the Radio Frequency Spectrum Regulations 2015, as well as the broader policy objectives of South Africa as set out in:

¹¹ General Notice No. 266 published in Government Gazette No. 41650 of 25 May 2018.

- 4.1.1 the National Integrated ICT White Paper, 2016 ("White Paper")¹²;
- 4.1.2 the National Development Plan;
- 4.1.3 South Africa Connect: Creating Opportunities, Ensuring Inclusion South Africa's Broadband Policy (SA Connect);
- 4.1.4 Broadcasting Digital Migration Policy 2008 (as amended);¹³
- 4.1.5 Radio Frequency Spectrum Policy 2010;¹⁴ and
- 4.1.6 The Policy on High Demand Spectrum and Policy Direction on the Licensing of a Wireless Open Access Network dated 26 July 2019.

The Constitution

- 4.2 Section 192 of the Constitution stipulates that "National legislation must establish an independent authority to regulate broadcasting in the public interest, and to ensure fairness and a diversity of views broadly representing South African society" (own emphasis).

The ICASA Act

- 4.3 Section 2 of the ICASA Act stipulates that the object of the ICASA Act is to establish an independent authority which is to regulate broadcasting, electronic communications and postal matters in the public interest.
- 4.4 Section (4)(3)(c) provides that the Authority must control, plan, administer and manage the use and licensing of the radio frequency spectrum in accordance with bilateral agreements or international treaties entered by the Republic of South Africa.

The ECA

- 4.5 Similarly section 30 (2) of the ECA mandates the Authority to control, plan, administer, manage, license and assign the use of radio frequency spectrum. In executing the aforementioned mandate, the Authority must ensure compliance with applicable standards and requirements of the ITU's Radio Regulations, and the NRFP. ¹⁵

¹² Government Notice No. 1212 published in Government Gazette No. 40325 of 03 October 2016.

¹³ General Notice No. 958 published in Government Gazette No. 31408 of 08 September 2008.

¹⁴ General Notice No. 306 published in Government Gazette No. 33116 of 16 April 2010.

¹⁵ ECA: section 30 (2) (a)

4.6 Section 31 (2) of the ECA stipulates:

“(a) A radio frequency spectrum licence is required in addition to any service licence contemplated in Chapter 3, where the provision of such service entails the use of radio frequency spectrum.

(b) A service licence is required in addition to any radio frequency spectrum licence where the provision of such service entails the use of radio frequency spectrum.”

4.7 Section 31(3) (a) of the ECA mandates the Authority to develop regulations setting out the procedures and criteria for radio frequency spectrum licences in instances where there is insufficient spectrum available to accommodate demand.

The Radio Frequency Spectrum Regulations, 2015 (“RFSR”)

4.8 Regulation 7 (Procedure Where There is Insufficient Spectrum to Meet Demand or Where an ITA is Published) of the RFSR stipulates:

“(1) The Authority will at all times publish an ITA where a radio frequency spectrum licence will be awarded/granted on a competitive basis and where it determines that there is insufficient spectrum available to accommodate demand in terms of section 31(3)(a) of the Act...”

4.9 The RFSR, apply generally to all areas of radio frequency spectrum and to all types of Radiocommunications services.

4.10 The RFSR established the framework through which the Authority may allocate and assign radio frequency spectrum under the NRFP.

4.11 The RFSR also sets out the procedure and criteria for awarding spectrum licences in instances where there is insufficient spectrum available to accommodate demand.

4.12 The RFSR seek to ensure transparent, fair and efficient procedures for the radio frequency spectrum licence applications and allow greater flexibility such that special conditions and procedures for specific frequency bands may be applied.

Radio Frequency Migration Regulations 2013 and Radio Frequency Migration Plan 2019

- 4.13 On 03 April 2013, the Authority published the Radio Frequency Migration Regulations and Radio Frequency Migration Plan Explanatory Document.¹⁶
- 4.14 On 30 March 2015, the Authority published the Radio Frequency Spectrum Assignment Plans¹⁷ ("RFSAP") for IMT which sets out the Technical Conditions on the use of IMT Spectrum.
- 4.15 On 29 March 2019, the Authority published the Radio Frequency Spectrum Assignment Plan for the frequency band 825 to 830 MHz and 870 to 875 MHz¹⁸, which Plan supersedes the Radio Frequency Migration Plan Explanatory Document, and any previous assignment arrangements for the same spectrum allocation.
- 4.16 The Radio Frequency Migration Regulations and the Radio Frequency Spectrum Assignment Plan set out the regulatory procedure and process for the migration of use and users of Spectrum.

IMT Roadmap

- 4.17 On 14 November 2014, the Authority published the Final International Mobile Telecommunications (IMT) Roadmap 2014¹⁹ as updated on 29 March 2019 and available in the Website.

Terrestrial Broadcasting Frequency Plan

- 4.18 The Authority acknowledges that the frequency bands 703 – 790 MHz and 790 – 862 MHz are still subject to digital migration process.
- 4.19 The Authority envisaged that the Analogue Television Broadcasting Services would have been migrated by 17 June 2015 in conformance to the International Telecommunication Union (ITU) Radio Regulations.

¹⁶ General Notice No. 352 and 353 published in Government Gazette No. 36334 of 03 April 2013.

¹⁷ Government Gazette Number 38640 of 2015 (Notice 270 to 278).

¹⁸ General Notice No. 165 and 166 published in Government Gazette Number 42337 of 29 March 2019.

¹⁹ General Notice No. 1009 published in Government Gazette No. 38213 of 14 November 2014.

- 4.20 Prior to the analogue switch off deadline of the ITU, the Authority developed the Terrestrial Broadcasting Frequency Plan (TBFP)²⁰ to facilitate the deployment of DTT services in South Africa.
- 4.21 The Digital Terrestrial Network is being rolled out nationally by Signal Distributors in accordance with the published plan in Annexure G of the TBFP.
- 4.22 In rolling out the network, there had to be mitigation techniques applied to ensure that existing analogue services co-exist with the design of Digital Terrestrial Television (DTT) Multiplex thus resulting in Digital Services being catered above 694 MHz as indicated in Annexure G of the TBFP.
- 4.23 Furthermore, the final DTT Single Frequency Plan in Annexure J of the TBFP, had to be coordinated with the Six (6) neighbouring Countries in line with the Geneva 2006 Agreement (GE-06).
- 4.24 The Coordinated plan had to be notified to the International Telecommunications Union's Radiocommunications (ITU-R) Master Frequency International Register (MIFR) in compliance with the GE-06.
- 4.25 The plan has successfully met conformance requirements set out in the GE-06 agreement.
- 4.26 The Authority had developed the Radio Frequency Spectrum Assignment Plans for IM700²¹ and IMT800²² in consultation with the public with the understanding that the analogue switch-off will be concluded by 01 January 2016 and 01 July 2015, respectively.
- 4.27 The Authority is to develop the Radio Frequency Spectrum Assignment Plan for DTT in an effort to expedite the Analogue Switch-Off. The obligation set for IMT700 and IMT800 are to be synchronized with the Analogue Switch-Off.

²⁰ published in the Government Gazette number 36321 (Notice 298 of 2013) on 02 of April 2013

²¹ Published in the Government Gazette number 38640 (Notice 271 of 2015) on 30 March 2015

²² Published in the Government Gazette number 38640 (Notice 273 of 2015) on 30 March 2015

- 4.28 *The date for the final switch-off of the analogue signal will similarly be announced by the Minister of Communications...*²³. This will be the final step in clearing the frequency bands 703 – 790 MHz and 790 – 862 MHz.

Ministerial Policies and Policy Directions

- 4.29 In terms of section 3(4) of the ECA:

“the Authority ... in exercising its powers or performing its duties in terms of this Act and the related legislation must consider policies made by the Minister in terms of subsection (1) and policy directions issued by the Minister in terms of subsection (2).”

- 4.30 In accordance with the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network, the Minister directed the Authority to consider the assignment of IMT Spectrum to the WOAN and the remaining IMT spectrum to electronic communications network service licensees. In considering the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network, the Authority is to commence the licensing process of the Spectrum to WOAN and remaining spectrum to industry's electronic communications network service licensees simultaneously. The process for the issuing of an individual network service licence to the WOAN, which is a prerequisite to the issuance / granting of RFS licence, is outlined in Annexure B.

5. PROPOSED SPECTRUM FOR THE AWARD

- 5.1 The Authority has, following consideration of the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network determined that the spectrum available for assignment in this process will be as follows:

5.1.1 2 x 30 MHz in the 700 MHz band (703 MHz - 733 MHz // 758 - 788 MHz)

5.1.2 2 x 30 MHz in the 800 MHz band (791 - 821MHz // 832 – 862 MHz)

5.1.3 1 x 170 MHz in the 2600 MHz band (2500 – 2690 MHz)

²³ From the Amendment of Broadcasting Digital Migration Policy Issued under Government Gazette No. 314088 on 08 September 2008 – Published on 07 February 2012 in Government Gazette 35014

- 5.1.4 1 x 40 MHz in the 2300 MHz band (2360 - 2400 MHz)
- 5.1.5 1 x 116 MHz in the 3500 MHz band (3428 – 3544 MHz)
- 5.2 The spectrum will be awarded on a national basis covering the entire territory of the Republic of South Africa.
- 5.3 Applicants are eligible to bid for any of the LOTS.
- 5.4 The reserve price for each LOT will be different and will be determined by the Authority. In this regard, stakeholders and prospective licensees are specifically invited – having consideration to the options outlined in Tables 1 to 7 below as well as the stated policy objectives – to make representations on the factors and or principles that the Authority should consider in determining the reserve prices applicable to each LOT.
- 5.5 Radio Frequency Spectrum Caps will be introduced for the licensing process and will be determined by the Authority. In this regard, stakeholders and prospective licensees are specifically invited – having regard to the options outlined in Tables 1 to 7 below as well as the stated policy objectives – to make representations on the factors and considerations that can inform the Authority's formulation of radio frequency spectrum caps.
- 5.6 The spectrum available for award is packaged as follows:

5.6.1 Option 1

Option 1 takes into consideration the proposal from the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network wherein the CSIR report recommended that the WOAN should acquire radio frequency assignments of 2 x 25 MHz (FDD in the 800 MHz band), 2 x 20 MHz (FDD 2600 MHz band) and 1 x 25 MHz (TDD in 2600 MHz band). The remaining spectrum is to be licensed to industry as indicated on Table 1.

Table 1: Option 1 IMT700 / IMT800 / IMT2600

LOTS	700 MHz	800 MHz	2600 MHz	SERVICE
LOT A		2 x 25 MHz (FDD) (796-821MHz// 837-862MHz)	2 x 20 MHz (FDD) (2500-2520MHz// 2620-2640MHz)	WOAN
			25 MHz (TDD) (2595-2620MHz)	
Assigned			20 MHz (TDD) (2570-2590MHz)	Incumbent
LOT B	2 x 10 MHz (FDD) (703-713MHz// 758-768MHz)		2 x 10 MHz (FDD) (2520-2530MHz// 2640-2650MHz)	Industry
LOT C	2 x 10 MHz (FDD) (713-723MHz// 768-778MHz)		2 x 10 MHz (FDD) (2530-2540MHz// 2650-2660MHz)	Industry
LOT D	2 x 10 MHz (FDD) (723-733MHz// 778-788MHz)		2 x 10 MHz (FDD) (2540-2550MHz// 2660-2670MHz)	Industry
LOT E			2 x 20 MHz (FDD) (2550-2570MHz// 2670-2690MHz)	Industry

5.3.2 Option 2

In this option the WOAN is to acquire 2 x 20 MHz FDD in IMT800 as indicated in Table 2. The usable spectrum for IMT advanced systems in FDD is in multiples of 10 MHz. The remaining FDD spectrum of 10 MHz in IMT800 is to complement LOT D.

Option 2 uses Time Division Duplex (TDD) for the 2600 MHz which is efficient and provides more spectrum. It also has advantages in dealing with traffic asymmetry, of avoiding inter-band interference and ensuring efficient use of the spectrum. Therefore, the incumbent assignment will be required to do an in-

band migration as indicated. This will further enable the Licensee to provide downlink speed desired for the achievement of the SA Connect targets.

Table 2: Option 2 - IMT700 / IMT800 / IMT2600

LOTS	700 MHz	800 MHz	2600 MHz	SERVICE
LOT A		2 x 20 MHz (FDD) (801-821 MHz// 842-862 MHz)	1 x 40 MHz (TDD) (2500-2540 MHz)	WOAN
Assigned			20 MHz (2540-2560) MHz	Incumbent
LOT B	2 x 10 MHz (FDD) (703-713 MHz// 758-768 MHz)		1 x 50 MHz (TDD) (2560-2610 MHz)	Industry
LOT C	2 x 10 MHz (FDD) (713-723 MHz// 768-778 MHz)		1 x 50 MHz (TDD) (2610-2660 MHz)	Industry
LOT D	2 x 10 MHz (FDD) (723-733 MHz// 778-788 MHz)		1 x 30 MHz (TDD) (2660-2690 MHz)	Industry
Possible future Assignment		2 x 10 MHz (FDD) (791-801 MHz// 832-842 MHz)		

5.3.3 Option 3

Option 3 in Table 3 is designed with an aim to balance the provision of the bandwidth in LOT B, LOT C and LOT D, and it further assigns 10 MHz bandwidth of IMT2600 for capacity use coupled with 10 MHz bandwidth of the IMT800 as indicated on LOT E. The arrangements of Lot B to Lot E have potential of creating a highly competitive auction that can yield high returns on investments taking into consideration the number of players in the current telecommunication market in South Africa.

Table 3: Option 3 - IMT700 / IMT800 / IMT2600

LOTS	700 MHz	800 MHz (2600 MHz	SERVICE
LOT A		2 x 20 MHz (FDD) (801-821 MHz// 842-862 MHz)	40 MHz (TDD) (2500-2540 MHz)	WOAN
LOT B	2 x 10 MHz (FDD) (703-713 MHz// 758-768 MHz)		40 MHz (TDD) (2540-2580 MHz)	Industry
LOT C	2 x 10 MHz (FDD) (713-723 MHz// 768-778 MHz)		40 MHz (TDD) (2580-2620 MHz)	Industry
LOT D	2 x 10 MHz (FDD) (723-733 MHz// 778-788 MHz)		40 MHz (TDD) (2620-2660 MHz)	Industry
LOT E		2 x 10 MHz (FDD) (791-801 MHz// 832-842 MHz)	10 MHz (2660-2670 MHz)	Industry
In-band Migration			20 MHz 2670 – 2690 MHz	Incumbent

5.3.4 Option 4

Option 4 in Table 4 proposes to assign to the WOAN the IMT700 and IMT2600 radio frequency bands.

This is given the fact that the ecosystem for mobile devices has already matured on the IMT800 radio frequency band. Assigning the IMT800 spectrum to the industry ensures the immediate benefit to the majority of the consumers.

The ecosystem for mobile devices on IMT700 is growing at a reasonable pace and the spectrum can greatly benefit the WOAN since this band has greater reach of coverage, is considered lucrative since it is already identified IMT systems and is earmarked to be a pioneer band for IMT2020 in the deployment of the Fifth Generation (5G) Networks.

Table 4: Option 4 – IMT700 / IMT800 / IMT2600

LOTS	700 MHz	800 MHz	2600 MHz	SERVICE
LOT A	2 x 20 MHz (FDD) (703-723 MHz//758-778 MHz)		40 MHz (TDD) (2500-2540 MHz)	WOAN
LOT B		2 x 10 MHz (FDD) (791-801 MHz// 832-842 MHz)	40 MHz (TDD) (2540-2600 MHz)	Industry
LOT C		2 x 10 MHz (FDD) (801-811 MHz// 842-852 MHz)	40 MHz (TDD) (2600-2640 MHz)	Industry
LOT D		2 x 10 MHz (FDD) (811-821 MHz//8 52-862 MHz)	40 MHz (TDD) (2640-2680 MHz)	Industry
Possible Future Assignment	2 x 10 MHz (FDD) (723-733 MHz//778-788 MHz)		10 MHz (2680-2690 MHz)	

5.3.5 Option 5

Option 5 in Table 5 is designed with an aim to assign the IMT spectrum on the IMT700 and IMT800 equally to the Industry and the WOAN. The WOAN will benefit from the readily available ecosystem and expanded coverage on both the IMT700 and IMT800 bands.

Table 5: Option 5 – IMT700 / IMT800 / IMT2600

LOTS	700 MHz	800 MHz	2600 MHz	SERVICE
LOT A	2 x 10 MHz (FDD) (703-713 MHz// 758-768 MHz)	2 x 10 MHz (FDD) (801-811 MHz// 842-852 MHz)	40 MHz (TDD) (2500-2540 MHz)	WOAN
LOT B		2 x 10 MHz (FDD) (811-821 MHz// 852-862 MHz)	40 MHz (TDD) (2540-2580 MHz)	Industry
LOT C	2 x 10 MHz (FDD) (713-723 MHz// 768-778 MHz)		40 MHz (TDD) (2580-2620 MHz)	Industry
LOT D	2 x 10 MHz (FDD) (723-733 MHz// 778-788 MHz)		40 MHz (TDD) (2620-2660 MHz)	Industry
LOT E		2 x 10 MHz (FDD) (791-801 MHz// 832-842 MHz)	10 MHz (2660-2670 MHz)	Industry
In-band Migration			20 MHz 2670 – 2690 MHz	Incumbent

5.3.6 The Authority resolved to include IMT2300 and IMT3500 bands for licensing over and above the bands stipulated on the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network.

5.3.7 These frequency band IMT3500 was identified for International Mobile Telecommunication (IMT) Services at World Radiocommunication Conferences (WRC) of 2004.

- 5.3.8 Moreover, the frequency band IMT2300 was identified for IMT in the Radio Regulation in 2012 of the ITU, an international treaty making conferences of which South Africa is a signatory.
- 5.3.9 Subsequent to that, South Africa had included them to form part of National Radio Frequency Plan, 2013, IMT Roadmap 2014 and the Radio Frequency Spectrum Assignment Plans for these frequency bands were promulgated in 2015.
- 5.3.10 The IMT2300²⁴ and IMT3500²⁵ bands are also available to be licensed.
- 5.3.11 These two frequency bands are using TDD channel arrangement and the spectrum LOTs as indicated in Table 6 and 7.
- 5.3.12 The Incumbents are being migrated In-Band in accordance with the Radio Frequency Spectrum Assignment Plans as illustrated in Table 7.
- 5.3.13 The Authority may decide to assign the radio frequency spectrum on these bands on national or regional basis.
- 5.3.14 The requirements to realise the capabilities of IMT ranges from the bandwidth of 80 MHz to 100 MHz. The available spectrum in the IMT2300 is 40 MHz and IMT3500 is 116 MHz.
- 5.3.15 The combined availability of spectrum within the low, mid and high ranges, with the appropriate amount of contiguous spectrum per network, as well as regulatory conditions will facilitate the success of IMT, including all use cases.

Table 6: IMT2300

LOTS	Bandwidth	2300 MHz	Service
INCUMBENT	60 MHz	2300 - 2360 MHz	Incumbent
A3	10 MHz	2360 - 2370 MHz	Industry
B3	10 MHz	2370 - 2380 MHz	Industry
C3	10 MHz	2380 - 2390 MHz	Industry
D4	10 MHz	2390 - 2400 MHz	Industry

²⁴ Published in the Government Gazette number 38640 (Notice 276 of 2015) on 30 March 2015

²⁵ Published in the Government Gazette number 38640 (Notice 278 of 2015) on 30 March 2015

Table 7: IMT3500

LOTS	Bandwidth	3500 MHz	Service
INCUMBENT	20 MHz	3400 - 3420 MHz	Incumbent
INCUMBENT	8 MHz	3420 - 3428 MHz	Incumbent
A5	2 MHz	3428 - 3430 MHz	Industry
B5	10 MHz	3430 - 3440 MHz	Industry
C5	10 MHz	3440 - 3450 MHz	Industry
D5	10 MHz	3450 - 3460 MHz	Industry
E5	10 MHz	3460 - 3470 MHz	Industry
F5	10 MHz	3470 - 3480 MHz	Industry
G5	10 MHz	3480 - 3490 MHz	Industry
H5	10 MHz	3490 - 3500 MHz	Industry
I5	10 MHz	3500 - 3510 MHz	Industry
J5	10 MHz	3510 - 3520 MHz	Industry
K5	10 MHz	3520 - 3530 MHz	Industry
L5	10 MHz	3530 - 3540 MHz	Industry
M5	4 MHz	3540 - 3544 MHz	Industry
INCUMBENT	16 MHz	3544 - 3560 MHz	Incumbent
INCUMBENT	20 MHz	3560 - 3580 MHz	Incumbent
INCUMBENT	20 MHz	3580 - 3600 MHz	Incumbent

5.3.16 The frequency band 3300 - 3400 MHz is allocated in all three Regions to the radiolocation service on a primary basis, and in Region 2 and Region 3 is also allocated to the fixed, mobile and amateur service on a secondary basis.

5.3.17 In Region 1 which includes Africa, the 3300 – 3400 MHz band was identified for IMT at WRC-15 by a number of Countries. Resolution 223 (WRC-15) called for compatibility studies to assess the feasibility of:

- co-channel sharing between IMT and Radiolocation systems (including land, maritime and airborne radars) operating in the band 3300 - 3400 MHz; and
- adjacent band sharing between IMT operating in the 3300 – 3400 MHz band and Radiolocation systems deployed in the 3100 – 3300 MHz band.

5.3.18 South Africa has been contributing meaningfully and participating on the ITU process in this above regard in order to influence the decision for the 3300 – 3400 MHz band to be identified for IMT.

- 5.3.19 The Authority will develop the RFSAP for the band upon approval by the Radio Assembly and incorporated by reference into the ITU Radio Regulations by WRC-19.

6 OBLIGATIONS

The following obligations will form part of the licence conditions of the Radio Frequency Spectrum Licence to be issued:

6.1 Uplink and throughput obligations for the Industry

- 6.1.1 According to the OpenSignal's State of LTE report of February 2018,²⁶ the country with greater LTE coverage, 97.5% of the population, has an average download speed of 40.44 Mbps, whereas the country with the highest average download throughput of 44.31 Mbps has an LTE population coverage of 84.43%.
- 6.1.2 A Licensee must provide data services across the country with an average uplink of 15 Mbit/s and the downlink user experience throughput of at least 30 Mbit/s to 100% of the population of South Africa by 2025.

6.2 Coverage obligation for the Industry

- 6.2.1 As background to the coverage obligation for the Industry, the Authority has been studying approaches used internationally to incentivize network deployment and is particularly impressed by the success of the model adopted in Germany, where operators that acquired 800 MHz spectrum were required to provide coverage in less populated areas before they were allowed to utilize the spectrum in more populated regions. This led to LTE services being available across the whole country in a period of less than two years.
- 6.2.2 Therefore, the Authority plans to place coverage obligation following similar principles on the holders of Lots B, C and D as outline above in Options 1 to 5.
- 6.2.3 The Licensees of Lot B, C and D as outlined on Options 1 to 5 are required to ensure that identified geographic areas are provided with broadband coverage in accordance with standards prescribed by the Authority and or set out in their licence terms and conditions. Licensees will be required

²⁶ <https://www.opensignal.com/reports/2018/02/state-of-lte>

to rollout the broadband network to 97% of the population in all the identified underserved areas before rolling out in the urban areas. In this regard, stakeholders and prospective licensees are specifically requested to make representations with regard to the criteria to be used for identification of underserved areas to be designated for prioritisation in the roll out of services.

- 6.2.4 Licensees will be required to provide sufficient quality of network coverage to provide data services in the designated areas with an average downlink user throughput of 30Mbit/s in the period from 07:00 to 20:00 (time in the local region). This timeframe has been chosen to cover the vast majority of the population using mobile dataservice in public areas.
- 6.2.5 The holders of Lots B, C and D as outlined in Options 1 to 5 will each have a maximum of three years from the date that the 700 MHz and 800 MHz spectrum becomes available to provide services to all identified underserved areas. If the holder fails to meet this obligation, this will be regarded as a serious breach of the licence conditions and the licence may be revoked.
- 6.2.6 A licensee will have a maximum of three years from the date that the 700 MHz and 800 MHz spectrum becomes available to provide services in line with the set obligations.

6.3 Open Access Obligations for the Industry

- 6.3.1 A Licensee is required to provide open access to a minimum of three (3) Mobile Virtual Network Operators (MVNO).
- 6.3.2 MVNO must have a minimum of 51% ownership held by persons from Historically Disadvantaged Groups.
- 6.3.3 A Licensee will have a maximum of three years from the date that the 700 MHz and 800 MHz spectrum becomes available to commence operations (i.e. to provide services in line with the set obligations).
- 6.3.4 If a Licensee fails to meet the obligations as set out in items 6.3.1, 6.3.2 and 6.3.3 above, this will constitute a material breach of the licence conditions and the radio frequency spectrum licence may be withdrawn by the Authority.
- 6.3.5 To ensure the sustainability and future capability of the WOAN an offtake i.e. a minimum of 30% national capacity must be procured from the WOAN collectively as soon as the WOAN is operational, for a period of at least five years, by radio frequency spectrum licensees that are assigned high demand spectrum through this licensing process. The percentage to be procured by

each licensee may be proportionate to the amount of high demand spectrum assigned to such licensee.

- 6.3.6 The Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network provides that ECNS licensees who are assigned IMT spectrum must be subject to wireless open access obligations in respect of their existing infrastructure and or network facilities. In this regard, stakeholders and prospective licensees are specifically invited to make representations on the legal basis, nature and extent of wireless open access conditions to be imposed – over and above those contemplated in paragraph 6.3.1 to 6.3.3 above – on ECNS licensees that may be assigned IMT spectrum.

6.4 Wireless Open Access Network obligations

- 6.4.1 These obligations take in consideration the provisions in the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network.
- 6.4.2 One of the objectives in the ECA enjoins the Authority to enhance competition in the ICT Sector (the intended effect of promoting downstream mobile service market).
- 6.4.3 An important provision contained in the Policy on High Demand spectrum and Policy Direction of the Licensing of Wireless Open Access Network is the vision of creating a wireless open access broadband network.
- 6.4.4 The Authority intends to primarily progress this objective in this award process through the setting of wholesale open access conditions on Lot A as well as physical infrastructure sharing obligations on the holder of the licences of Lots B, C, D and E.
- 6.4.5 In addition, the wireless open access network operator may be given three to five (3- 5) years of licence obligation holiday following the award of the licence. If necessary the Authority will impose additional wholesale obligations as part of the licence conditions associated with Lot B, C, D and E.
- 6.4.6 The Authority's intention is to impose obligations to the holder of the Licence for Lot A to ensure the provisioning of the following wholesale services:
- 6.4.6.1 Wholesale access to national roaming;
 - 6.4.6.2 Wholesale access to MVNO; and
 - 6.4.6.3 Wholesale access to mobile data services.

6.4.7 The winner of Lot A must provide wholesale open access services on the following basis:

6.4.7.1 Non-discriminations access;

6.4.7.2 Transparency;

6.4.7.3 Affordable Prices; and

6.4.7.4 Cost-oriented basis with reasonable Rate of Return (RoR).

6.4.8 The holders of the Licences for Lots B, C, D and E will be required to provide certain wireless services to the holder of the Licence for Lot A as follows:

6.4.8.1 Wholesale access to passive and active infrastructure. The holders of Licences for Lots B, C, D and E will be required to provide access to any passive infrastructure that they own and or operate to the holder of the Licence for Lot A. This will be on a cost-orientated basis and on reasonable terms. This includes access to base station sites, space on towers, co-location facilities and other essentials as appropriate.

6.4.8.2 Provision of seamless national roaming service. Where the holders of the Licences of Lots B, C, D and E operate an existing national network, as a condition for acquiring the above Lot(s), each winner will be required to consent to an amendment of its existing licence to allow the winner of Lot A (the 'roamer') to benefit from national roaming on its network on a cost-orientated and non-discriminatory basis. The handover of traffic between roamer's network and roaming provider's network must be seamless. The right of the roamer to benefit from mandated national roaming will expire after a period of five (5) years from the award of the Lot A Licence, at which point the winner of Lot A will be expected to have nationwide coverage from its own network.

6.4.9 The provisions in item 6.3 will be implemented by means of commercial negotiations. However, in the event that such agreements cannot be achieved, the potential holder of Lot A must approach the Authority to request that it investigate the matter and make a final determination on terms to be imposed on the parties (including in relation to the pricing of wholesale services).

6.5. Social obligations for the Industry

6.5.1 In addition to the coverage and wholesale open access obligations the Licensees to be assigned spectrum (other than the WOAN) will be subject to social obligations (universal service and access obligations) as determined by the Authority.

- 6.5.2 The Authority invites stakeholders and prospective licensees to make recommendations and proposals on the type, scope, nature, criteria etc. of social obligations that can be imposed in respect of this licensing process.

6.6 Empowerment Provision for the Industry

- 6.6.1 The obligations herein are intended to promote broad-based black empowerment, in addition to what is already prescribed in terms of regulation 7 of the RFSR.
- 6.6.2 A licensee must within 36 months, of being issued with a radio frequency spectrum licence, reach a level 3 contributor (B-BBEE status) in terms of the Codes of Good Practice, applicable to the ICT Sector, published in terms of section 9(1) of the BBBEE Act and maintain such status for the period of the licence.

7 THE AWARD PROCESS OF THE SPECTRUM TO THE INDUSTRY

- 7.5 The award process will be as follows:

- 7.5.1 The award will consist of three stages, which will include Qualification, Auction and Licensing Stages as illustrated on the diagram below:

Diagram of award process of the Spectrum to the Industry



Qualification Stage

- 7.5.2 In the Qualification Stage, interested persons are invited to submit applications, in response to an ITA, in which they must state on which Lots they wish to place Bids during the award process. The Applications will then be assessed by the Authority, and Applicants who meet the

requirements as specified on ITA will be qualified. The detailed qualification criteria will be in accordance with regulation 6 and 7 of the RFSR. Applicants that are eligible to submit an application in the qualification stage must:

- 7.5.2.1 pay a non-refundable application fee which will be determined by the Authority and published in the ITA;
- 7.5.2.2 be in possession of an Individual Electronic Communications Networks Services licensee issued by the Authority in terms of the ECA; and
- 7.5.2.3 have a minimum of 30% (thirty percent) equity ownership held by HDGs or must have a minimum Broad-Based Black Economic Empowerment (B-BBEE) status level 4 contributor.

Auction Stage

- 7.5.3 In the Auction Stage qualifying applicants (Bidders) will be requested to submit a Bid for the Lots that they would be prepared to acquire at Reserve Prices. The Auction Stage may take the form of a 'Simultaneous Multi-Round Ascending' (SMRA) auction.
- 7.5.4 Bidders will be free to switch between Lots within the Lot Categories for which they are qualified to bid during the auction process.
- 7.5.5 Following the Auction Stage, Radio Frequency Spectrum Licenses will be issued to the Preferred Bidders, subject to the payment of the Auction Fee.
- 7.5.6 Thereafter the Preferred Bidders will have to pay the annual licence fees in accordance with the Radio Frequency Spectrum Licence Fees Regulations, 2010, as amended.

Licensing Stage

- 7.5.7 In the Licensing Stage, the winning Bidders will be granted and issued Radio Frequency Spectrum Licences.

8 AUCTION

- 8.5 Spectrum auctions have proven to be a "best practice method" for assigning spectrum where demand exceeds supply.

8.6 The Authority has been taking note of auction formats which have been used worldwide when licensing spectrum where demand exceed supply, and amongst others it is considering using the Simultaneous Multi Round Auction (SMRA) auction with generic lots.

8.7 SMRA FORMAT:

8.7.1 The SMRA is an open ascending multi-unit auction that takes place over a number of rounds. In this format, bids are placed for individual lots, and the auction proceeds in successive rounds with increasing prices, until there are no new bids. A point-based activity rule is often used, under which bidders may only decrease or maintain their level of demand from one round to the other, as measured by the number of eligibility points²⁷. In each round, the highest bid placed on each lot is called a Standing High Bid. When the auction ends Standing High Bids become winning bids and the bidders pay the amounts they bid. The traditional implementation of the SMRA allows bidders to place bids for specific frequency lots.

8.7.2 The SMRA with generic lots has been used in several recent multi-band spectrum awards in Europe. Examples include Germany, Italy, Spain, Portugal, Greece and the Czech Republic.

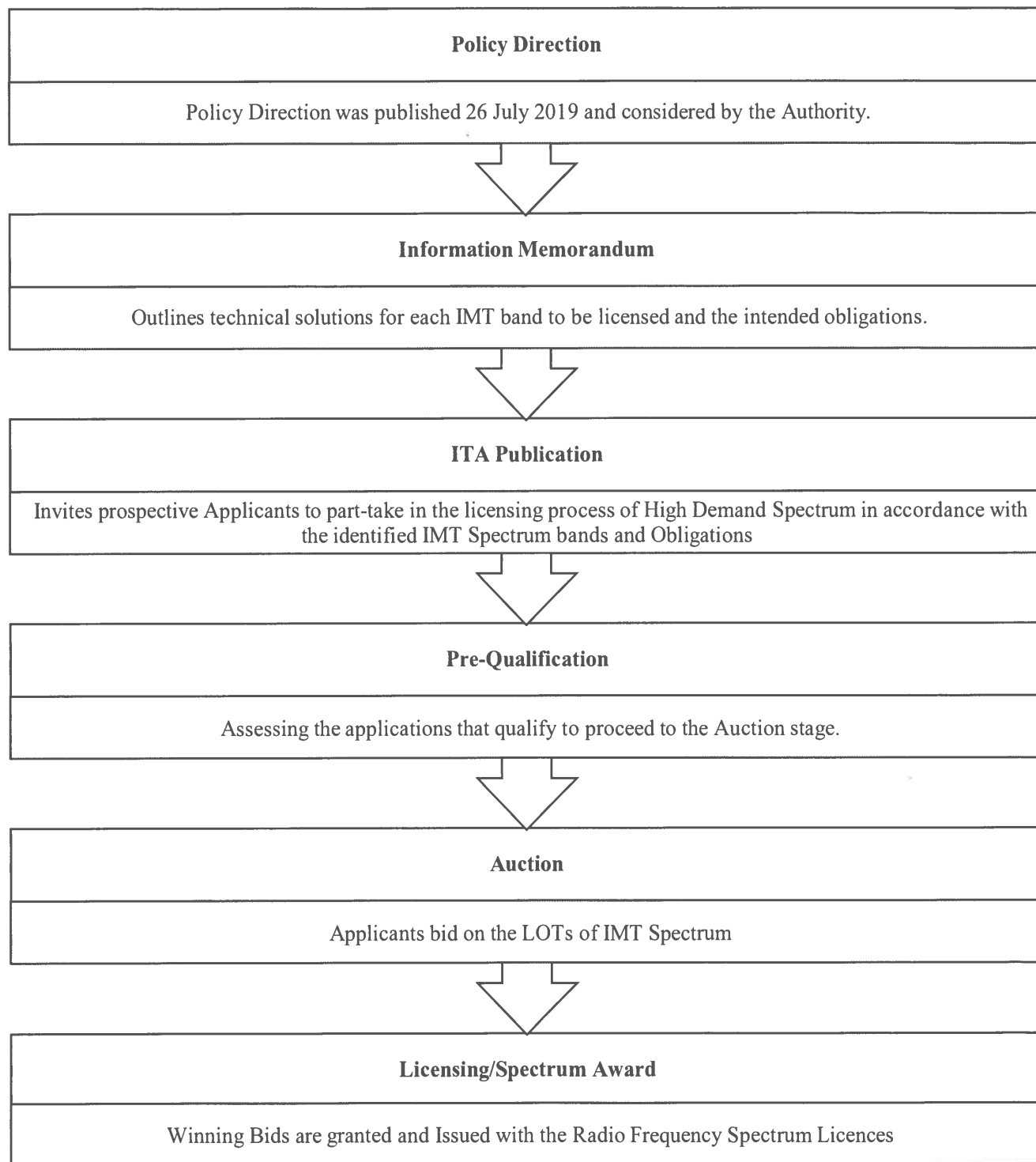
8.8 The Reserve Price of each Lot will be published in the ITA.

8.9 The auction will take place at a venue determined by the Authority, with all Bidders co-located in the same building. The exact location of the auction will be communicated closer to the auction date and or during the mock auction.

End/

²⁷ A Bidder's Eligibility describes the maximum of Lots on which it may place Bids in the current Round.

Annexure A: Process to License the IMT Spectrum



Annexure B: Process to License the WOAN

