NIGERIAN COMMUNICATIONS COMMISSION

Draft COMMERCIAL SATELLITE COMMUNICATIONS REGULATIONS~~GUIDELINES~~

~~JULY~~ ~~February~~ 2023~~0~~.

Table of Contents

New addition

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THE NIGERIAN COMMUNICATIONS COMMISSION

COMMERCIAL SATELLITE COMMUNICATIONS REGULATIONS ~~GUIDELINES~~

PART 1: GENERAL

1. Introduction

The Nigerian Communications Commission pursuant to its powers under Section 2 and Section 70(2) of the Nigerian Communications Act 2003 hereby makes these Regulations~~Guidelines~~ to regulate the provision and use of all satellite communications services and networks, in whole or in part within Nigerian territory.

2. Objectives

The objectives of these Regulations~~Guidelines~~ are to:

a) Ensure a well-developed and organized satellite communications market in Nigeria with appropriate legal framework that meets international best practices, encourages innovation and guarantees public safety in the rendering of commercial satellite services.

b) Manage scarce frequency resource, especially in bands where frequency is shared between satellite and terrestrial systems.

c) Encourage the use of satellite connectivity to **underserved** and unserved areas that lack terrestrial transmission infrastructure backbone.

d) Encourage the use of satellite communication infrastructure in Nigeria as a means of providing long-haul transmission facilities, last-mile services and other emerging services.

e) Provide guidelines for protection from impermissible levels of interference to reception of signals by earth stations ~~in the Fixed/Mobile Satellite Service~~ from terrestrial stations in a co-equally shared band.

f) Ensure that satellite space segment providers, earth station service providers, Bandwidth Re-sellers and vendors of terminal equipment or franchise holders, provide reliable, cost-effective and secured service to users in Nigeria under fair and favorable commercial and technical conditions.

g) Ensure a standard means of obtaining accurate records of all providers and users of satellite services in Nigeria for efficient utilization of assigned frequency.

~~g)~~h) Facilitate interference resolution among satellite service providers, or between satellite and terrestrial systems.

~~h)~~i) Ensure regular update of facilities' database for use in processing satellite coordination requests from neighboring countries, International Telecommunication~~s~~ Union (ITU), regional telecommunications organizations and regulatory authorities in other countries.

~~i)~~j) Ensure that the general public and workers in communications companies are

protected from possible health hazards that can arise from over exposure to high level electromagnetic fields at high frequencies.

~~j)~~k) Ensure use of the National Emergency Number for satellite based communications~~telephony~~ services.

~~k)~~l) Collaborate with relevant security agencies in order to ensure secured use of satellite communications services.

3. Scope

1. The provisions of these Regulations~~Guidelines~~ apply to the following:

   a) All Commercial Satellite Communications Services, i.e. space segment providers ~~s~~ or earth station service/network providers.

   b) Operators of Space Segments, ~~,~~ Earth Stations, Satellite Gateway service providers, ~~GMPCS providers,~~ **Mobile Satellite Services (MSS), HAPS operators, Drone/UAV operators, related emerging services** and Sales and Installation of Satellite Terminal Equipment

   c) GSO and non-GSO satellites including satellites in LEO, MEO, ~~HEO~~GEO, and other similar services such as HAPS, Drones and others that may be developed in future.

2. These Regulations~~Guideline~~s do not apply to military and non-commercial government satellites, radio navigation satellites, amateur satellites, earth observation and space research satellites, and receive-only earth stations.

4. General Terms and Conditions

1. Service providers wishing to provide service or obtain landing rights in Nigeria must complete and submit the relevant Application Form to the Commission.
2. In addition to licensing of the space segment, authorization requirements for satellite service providers and ~~individual~~ licensing of~~for~~ earth station facilities is mandatory before the installation or use of any Satellite Ground Equipment.
3. Licensees of the Commission shall comply with the Regulations on Lawful Interception of Communications developed by the Commission.

PART 2: EARTH SEGMENT

5. Licensing of Earth/Ground Station Networks

A. General Terms

I. Licensing of Earth/Ground Station Networks (ESIM's, VSAT's and GATEWAY), MSS, HAPS, UAV/DRONES shall be on the basis of availability and in accordance with any licensing method as may be determined by the

Commission.

II. Earth Stations in the country that are specifically used for Telemetry Tracking and Command (TTC) are exempted from licensing fees. Authorization shall be given for such earth stations after receiving and verifying all the technical information required.

III. A person seeking to establish earth/ground-station network shall:

a) be a body corporate registered to carry out business in Nigeria;

b) obtain **an operational Licence from the Commission**

c) submit simplified technical information on the earth/ground station, indicating its possible uses, frequency bands, the parameters of the associated space station and any other relevant data;

d) Comply with the provisions of the Act, ~~and~~ any other legal or~~and~~ regulatory conditions and standards governing satellite use.

IV. ~~For a~~Any Earth Station-in-Motion (ESIM) operating in Nigeria on a permanent basis on-board an aircraft, ship or land mobile vehicle must comply with the conditions in (5) (VI – IX) of this part, in addition to any other relevant provisions in these Regulations~~Guidelines~~.

V. An ESIM on board an aircraft, ship or land mobile vehicle shall require no licensing where the ESIM/VSAT is within the territory~~ial district~~ of Nigeria for a period not exceeding six weeks. Provided that the ESIM has been duly registered in its country of origin.

VI. A Visiting ESIM that intends to remain in the Nigerian territory for a period exceeding six weeks ~~temporary stay~~ shall notify the Commission and obtain the necessary permit from the Commission.

VII. A Visiting ESIM shall not cause any interference to any system in Nigeria.

VIII. A local ESIM service provider shall be licensed under an Individual licence.

IX. An ESIM must have Control and Monitoring Function to ensure interference free operation.

ESIM's ~~will~~ shall be divided into three main categories namely: **Earth Station in Motion (ESIM) – Land, Earth Station in Motion (ESIM) – Aero** and **Earth Station in Motion (ESIM) – Maritime**

B. Earth Station in Motion (ESIM) Network – Land

i. The ~~Commission intends for the~~ ESIM operator shall~~to~~ provide continuous and consistent broadband services to moving vehicles.

ii. A local ESIM service provider shall obtain an ESIM Network Frequency Licence – LAND to provide ESIM services on board land mobile vehicles.

C. Earth Station in Motion (ESIM) Network – Aero

i. The ~~Commission intends for the~~ ESIM – Aero operator shall~~to~~ provide continuous and consistent broadband services to moving aircraft.

ii. A local ESIM service provider must obtain an ESIM Network Frequency Licence – AERONAUTICAL to provide ESIM services on board aircraft.

D. Earth Station in Motion (ESIM) Network – Maritime

i. The ~~Commission intends for the~~ ESIM – Maritime operator shall~~to~~ - provide continuous and consistent broadband services on-board ships.

ii. A local ESIM –service provider must obtain an ESIM Network Frequency Licence – Maritime to provide ESIM services on board-ships~~land mobile vehicles~~.

E. VSAT ~~Earth Station~~ Network

i. The ~~Commission intends for the~~ VSAT ~~Earth Station~~ Network operators shall~~to~~ provide broadband communications services.

An operator must be granted a VSAT ~~Earth Station Network Frequency~~Terminal Licence to enable operation of services on~~of~~ the VSAT Network.

ii. The VSAT Network categories shall include but not be limited to the following (with each category having its technical details, licensing fees and transmission parameters):

a) 0 – 50 terminals: Small office Home office (SOHO) broadband

b) 51 – 500 terminals: ~~Point of Sale (PoS) communications~~Enterprise solution

c) 501 – 10,000 terminals: Consumer broadband services ~~Monitoring of assets/utilities~~

d) 10,001 – 100,000 terminals: ~~Back-up emergency~~High throughput broadband services

Over 100,000 terminals~~Consumer broadband services~~

e)

F. Gateway Earth Station (GES)

i. The ~~Commission intends for the~~ GES operators shall~~to~~ provide broadband communications services only to licensed ~~tele~~communications operators authorized to provide last-mile communications services.

ii. An operator shall be granted a Gateway Earth Station (GES) Frequency Licence to enable operation of services on the GES Network.

6. Licensing of Other Networks

A. Mobile Satellite Services (MSS) Network

i. The ~~Commission intends for the~~ MSS Network operators shall~~to~~ provide mobile communications services (voice, data, IoT etc).

ii. An operator must be granted an MSS Network Frequency Licence to enable operation of services of the MSS Network.

B. High Altitude Platform Systems (HAPS) Network

i. The ~~Commission intends for the~~ HAPS Network operators ~~for extending infrastructure for terrestrial networks~~, shall~~to~~ provide fixed broadband connectivity for last mile users and transmission links between mobile and core networks for backhauling traffic.

An operator must be granted a High-altitude platform station (HAPS) Network Frequency Licence to enable operation of services of the HAPS Network.

C. UAV/Drones Network

i. The ~~Commission intends for the~~ UAV/Drones Network operators shall~~to~~ provide communications services.

ii. An operator must be granted an unmanned aerial vehicle (UAV)/Drone Network Frequency Licence to enable operation of services of the Drone Network.

D. Virtual VSAT Earth Station Network Frequency Licence

i. The ~~Commission intends for the~~ VSAT Earth Station Network operators shall~~to~~ provide broadband communications services.

ii. An operator must be granted a VSAT Earth Station Network Frequency

Licence to enable operation of services of the VSAT Network.

iii. **The VSAT Earth Station Network categories shall include but not be limited to the following (with each category having its technical details, licensing fees and transmission parameters):**

a) **0 – 50 terminals: Small office Home office (SOHO) broadband**
b) **51 – 500 terminals: Enterprise solution**
c) **501 – 10,000 terminals: Consumer broadband services**
d) **10,001 – 100,000 terminals: High throughput broadband services**

Over 100,000 terminals

7. Licence Tenure

The tenure of the individual and frequency licenses for an earth station shall be five (5) years for medium term and ten (10) years for long term respectively.

8. Licensee's Obligations

1. A Licensee shall without derogating from other obligations provided by the Act or other legislation:

a) Provide accurate information relating to the network systems, operations and subscribers, such as location, transmit power, etc. and any other information as may be required by the Commission.

b) Ensure that no operator is provided service or connected to its network without the requisite Licence or authorization from the Commission.

c) Maintain a database of all customers to whom services are provided.

d) Ensure that the security of the subscriber's information is guaranteed and accordingly, the licensee shall not at any time grant third parties access to subscriber's data except in accordance with the Act, other subsidiary legislations ~~the Regulations on Lawful Interception of Communications~~ developed by the Commission or any other law in force in Nigeria".

9. Licence Renewal

1. A successful applicant ~~will~~ willshall be granted a Licence where applicable stipulating full details of rights, privileges and obligations.

2. All licenses shall be renewed after expiration subject to satisfactory compliance with the Licence obligations and all applicable fees will be payable on renewal.

3. A licensee shall apply for the renewal of its Licence not later than six months prior to the expiration of the said Licence. The Licence shall be renewed in accordance with the laid down procedure of the Commission.

10. Processing Time

The Commission shall process all Licence applications in accordance with the Act and any other relevant Regulations.

11. Application

The Licence Application Form may be obtained from any of the offices of the Commission or may be downloaded from the Commission's website at the following URL: https://ncc.gov.ng/docman-main/legal-regulatory/guidelines/821-guidelines-on-commercial-satellite-communications-2018-form-earth-station/file.

12. End-user Terminal

1. No operating Licence shall be required for the use of portable terminal equipment by end-users.
2. Corporate users with multiple VSAT terminals or ESIM terminals connected to thea hub of a licensee shall not be required to obtain a separate Licence for ~~each~~ eachthe earth station~~s~~ installed.
3. The user of a visiting portable terminal exceeding six weeks in Nigeria should notify the Commission of its presence with details of the connectivity of the service and period of stay conveyed.

PART 3: SPACE SEGMENT

13. Authorization of Space Segment Satellite Operators

1. A Space segment Satellite Operator ~~shall~~upon authorization by a foreign Administration, may request the authorization of the Commission to provide services in Nigeria.
2. Upon obtaining the authorization in Regulation 13(1) (a) above, such operator will be eligible to provide services in Nigeria and the details of the satellite shall be in cluded in the list of Authorized Space Stations maintained by the Commission~~:~~.

~~1.~~3. In addition to Regulations 13(i) & (ii) above, the Space Satellite Operator shall also comply with the following;

~~.~~

a) Obtain a permit upon application for landing rights.

b) Ensure that any person providing services using the~~its~~ space segment is licensed by the Commission to do so and holds the requisite Frequency licence.~~.~~

c) Maintain a database of all such providers required by (d) above and submit a report to the Commission upon request.

d) Submit technical information on the space station, indicating its possible uses, orbiting parameters, frequency bands and geographical areas to be covered (footprints) and any other relevant data;

e) Ensure that power flux densities of its transmission signals are within the ITU

specified limits when the band in question is shared with terrestrial services.

f) A single authorization shall be issued in respect of a hybrid satellite. However, such authorization shall be issued with different conditions for each band, for example C, L, Ku, Ka, since operating conditions may vary from band to band.

~~2.~~4. A Space Station operator shall provide the location and technical parameters of its associated Gateway earth station providing service in Nigeria. .

~~3.~~5. Last mile customers that are activated through the local licensed operators in Nigeria are exempted from licensing.

~~4.~~6. For Non-GSO satellites, a single authorization shall be granted to the satellite constellation regardless of the number of satellites in the constellation.

~~5.~~7. For Non-GSO satellites, a landing Permit may be issued to satellite operators that have~~s~~ achieved partial launching of their~~its~~ satellite constellations, as long as the ~~it has completed its~~ satellite filing has been completed with the ITU. Evidence of completed satellite fillings must be provided along with the application.

~~6.~~8. Upon the grant of authorization under these Regulations~~Guidelines~~, the Commission shall:

a) Ensure the protection of satellite service operators and prompt action in the event of interference to its services by any earth station located within Nigeria. The Satellite Service operator shall however be obligated to provide details of the source of interference and the geographical location of the interfering party.
b) Give full support to the Satellite Service Operator in case of any request for coordination pursuant to its powers under the Act.
c) Render any other support within the scope of the Commission's statutory powers.

9. For Third-party Space segment operators, a virtual landing permit will be issued to satellite operators that provide space segment capacity over Nigerian territory.

14. Space Segment Authorization Evaluation Criteria

1. The following technical and operational issues shall be taken into consideration in the evaluation process:

a) Lifetime of satellite/orbit/inclination.

b) Multiple Access Method.

c) Transponder redundancy, space segment redundancy, RF redundancy.

d) Type of modulation.

~~e) Link budget and fade margin.~~

~~f) C/I ratio.~~

~~g)~~e) Transponder traffic loading.

~~h)~~f) Saturation/Power flux density at ~~satellite input~~surface of earth.

~~i)~~g) Number of earth stations, linkages, number of gateways.

~~j)~~h) Received power level contour.

~~k)~~i) Location of Network Control Centre and Network Operating Centre.

2. ~~In addition to the foregoing,~~ A~~a~~pplicants will also be required to show evidence of ITU coordination filings and Licence from the operator's host country regulator.

15. Authorization Tenure

The tenure of a space segment authorization shall be the life span of the satellite in orbit as specified by the applicant.

PART 4:MISCELLANEOUS

16. Fees and Charges

1. **Applications for Ground Segment Frequency Licenses shall be charged as follows:**

S/N	Application for Spectrum Licenses	Fees
a.	New application for Earth Station Spectrum Licence	₦10,000.00
b.	Modification of Earth Station Spectrum Licence	₦ 50,000.00
c.	Application for additional channels within VSAT Spectrum Licence	₦ 100,000.00
d.	Application for relocation of a GES	₦ 100,000.00

2. The Commission shall administer the following fees with respect to ~~satellite~~ Satellite Frequency licenses:

~~a)~~ -

a) Space Segment Landing Rights shall not be paid for and authorization shall be for

the life span of the satellite

Applications for Landing Rights shall be charged as follows:

S/N	Application	Fees
a.	New application for GSO Satellite	$2000.00
b.	Modification of GSO Satellite Landing Right	$1000.00
c.	New application for NGSO Satellite	$3000.00
D	Modification of NGSO Satellite Landing Right	$1000.00

b) Spectrum Fees for UAV/Drone Network Frequency licence shall be charged at $200 per annum

c) Spectrum usage fee for Earth station(s) registered in Nigeria shall be based on the economic value of the Satellite spectrum. The following table shall guide the Commission in determining the spectrum fees:

Per Band	**Number of terminals**	**Fee/Annum (USD) or Naira Equivalent at prevailing CBN Exchange Rate**
C, ~~L~~ Ka, Ku, L, S, UHF/VHF etc C-Ku-~~Ka-ESIM/VSAT-TERMINAL(s)~~C, S, XL, UHF/VHF etc	0 to 50 terminals	~~$~~ 52,~~0~~00 USD
	51 to 500 terminals	~~$ 2~~1,000 USD
	501 to 10,000 terminals	~~$~~ 2,000 USD
	10,001 to 100,000 terminals	~~$ 2~~10,000 USD
	Over 100,000 terminals	20,000 USD~~$ 2,000 USD~~

17. Type Approval

a) All satellite ground stations equipment and portable terminals for end-users, must be type-approved by the Commission before being imported or marketed in Nigeria.

b) Type Approval may however be waived where the applicant or licensee satisfies the Commission that ITU certification has been obtained under the GMPCS Memorandum of Understanding with respect to the said equipment.

c) A visiting portable terminal for end-users or ESIM with type approval certificates from their country of origin are allowed based on mutual recognition of type approval certificates. However, portable terminals for end-users and ESIM permanently operating in Nigeria must be type approved.

d) Self-declaration of conformity by manufacturers shall not be tenable as alternative to the requirement of type approval under these RegulationsGuidelines.

18. Interference Mitigating Techniques

1. The Commission shall encourage the use of the following technical means to ensure interference free operation in any band shared by both satellite and terrestrial systems:

   a) Limitation on satellite Power Flux Density (pfd) produced at the surface of the earth.

   b) Limitation on the Effective Isotropic Radiated Power (e.i.r.p) by terrestrial stations.

   c) Ensure the mMaintenance of high antenna performance standards.

   d) Controlling the elevation angles of satellite earth station antennas in order to limit power radiated to the horizon.

   e) Ensureing minimum separation **distance** between terrestrial stations and satellite earth stations.

2. The Commission shall always adopt radiation limits specified by ITU in Article 21 of the Radio Regulations and shall mandate licensees to adhere accordingly.

19. Self-Regulation

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TheThe Commission shall develop rules for a *Regulatory Sandbox* for Operators to conduct live tests of new, innovative products, services, or business models in a controlled environment, with regulatory oversight, subject to appropriate conditions and safeguards.

DEFINITIONS

Terms and expressions used in the RegulationsGuidelines which are defined in the Act shall have the same meaning as in the Act unless the context otherwise requires.

"ACT" means the Nigerian Communications Act 2003 and any amendment thereto;

"BROADCAST SATELLITE" means any radio or TV broadcast satellite; "C/I" means 'Carrier to Interference' ratio;

"COMMERCIAL SATELLITE" means a satellite launched for profit making or business purpose;

"EARTH OBSERVATION SATELLITE" means any satellite that senses the earth and provides data;

"EARTH STATION SERVICE PROVIDER" means a licensee that owns the earth station for service provision;

"EARTH STATION" means the ground component of satellite for transmit and receive (Tx/Rx);

"ESIM" stands for 'Earth Station in Motion' and means any small mobile earth station on board ships, trains, vehicles or aircrafts;

"ESIM – Land" [Earth Stations in Motion-Land] are Earth Stations that communicate with Geostationary-Satellite Orbit (GSO) systems operating in the fixed-satellite service (FSS) and operate on land vehicles in motion in the frequency ranges 17.7-20.2 GHz and 27.5-30 GHz.

"ESIM – Aeronautical" [Earth Stations in Motion – Aeronautical] are Earth Stations that communicate with Geostationary-Satellite Orbit (GSO) systems operating in the fixed-satellite service (FSS) and operate on aircraft in the frequency ranges 17.7-20.2 GHz and 27.5-30 GHz.

"ESIM – Maritime" [Earth Stations in Motion – Maritime] are Earth Stations that communicate with Geostationary-Satellite Orbit (GSO) systems operating in the Fixed-Satellite Service (FSS) and operate on ships in the frequency ranges 17.7-20.2 GHz and 27.5-30 GHz.

"GEO" stands for 'Geo-Stationary Earth Orbit' and means any satellite that moves at the same speed relative to the earth;

"GROUND EARTH STATION (GES)" is an Earth station in the Fixed Satellite Service, or, in some cases, in the Aeronautical Mobile Satellite Service, located at a specified fixed point on land to provide a feeder link for the aeronautical mobile satellite service.

"GMPCS" stands for 'Global Mobile Personal Communications Systems';

"GSO" stands for 'Geo-Stationary Orbit' and means a satellite location at 36,000km above sea level;

"HAPS" stands for 'High Altitude Platform Station'; "HEO" stands for 'Highly Elliptical Orbit';

"LEO" stands for 'Low Earth Orbit';

"MEO" stands for 'Medium Earth Orbit';

"MILITARY SATELLITE" means a satellite with payload for military;

"MOBILE SATELLITE SERVICE (MSS)" means Mobile satellite services (MSS) refers to networks of communications satellites intended for use with mobile and portable wireless telephones.

"NGSO" stands for 'Non Geo-Stationary Orbit' and means a satellite that does not maintain a stationary position, instead moves in relation to the Earth's surface and occupies a range of orbital positions (LEO satellites are located between 700km-1,500km from the Earth, MEO satellites are located at 10,000km from the Earth).

"PAYLOAD" means application software/services which a satellite is providing;

"PORTABLE TERMINAL" means an end user terminal capable of operating with one or more commercial satellites, including terrestrial mobile systems;

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"RADIO NAVIGATION SATELLITE" means any satellite that uses radio frequency to provide location based services;

"RF" stands for 'Radio frequency';

"SAR SATELLITE" means 'Search and Rescue Satellite';

"SPACE RESEARCH SATELLITE" means any satellite for scientific research;

"SPACE SEGMENT PROVIDER" means a licensed owner of a satellite in space;

"SPACE SEGMENT "means any satellite in orbit;

"TRANSPONDER "means the Transmit/Receive part of a satellite and microwave repeaters carried by a communications satellite or images;

"UNMANNED AERIAL VEHICLES (UAV)/DRONES" are types of special aircrafts that operates without a human pilot onboard. An unmanned aerial vehicle is also known as a **DRONE**.

"VSAT" stands for "Very Small Aperture Terminal "and means any small fixed or mobile earth station used to link satellite operating in C, Ku and Ka bands.

Dated this_____ day of _____ 2023~~0~~

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