

NIGERIAN COMMUNICATIONS COMMISSION



COMMERCIAL SATELLITE COMMUNICATIONS GUIDELINES

NOVEMBER, 2018.

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THE NIGERIAN COMMUNICATIONS COMMISSION

COMMERCIAL SATELLITE COMMUNICATIONS 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 Guidelines to regulate the provision and use of all satellite communications services and networks, in whole or in part within Nigeria or on a ship or aircraft registered in Nigeria.

2. Objectives

The objectives of these Guidelines are to:

- (1) 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.
- (2) manage scarce frequency resource, especially in bands where frequency is shared between satellite and terrestrial systems and to encourage the use of satellite connectivity to unserved areas that lack terrestrial transmission infrastructure backbone.
- (3) encourage the use of satellite communication infrastructure in Nigeria as a means of providing long-haul transmission facilities.
- (4) 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.

- (5) 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 favourable commercial and technical conditions.
- (6) ensure a standard means of obtaining accurate records of all providers and users of satellite services in Nigeria in order to simplify and facilitate interference resolution among satellite service providers, or between satellite and terrestrial systems.
- (7) ensure regular update of facilities' database for use in processing satellite coordination requests from neighbouring countries, International Telecommunications Union (ITU), regional telecommunications organizations and regulatory authorities in other countries.
- (8) 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.

3. Scope

- (1) The provisions of these Guidelines apply to the following:
 - (a) All Commercial Satellite Services, i.e. those that provide services to third parties or own satellite space segments or earth station for self-provision support of their businesses.
 - (b) Operators of Space Segments and Earth Stations, Satellite Gateway service providers, GMPCS providers and Sales and Installation of Satellite Terminal Equipment.
 - (c) GSO and non-GSO satellites including satellites in LEO, MEO, HEO, HAPS, and other similar orbits that may be developed in future.
- (2) These Guidelines 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 for earth station facilities is mandatory before the installation or use of any Satellite Ground Equipment.

PART 2: EARTH STATION

5. Licensing of Earth Stations

- (1) Licensing of earth stations, space segments, VSAT terminals and landing rights shall be on the basis of availability and in accordance with any licensing method as may be determined by the Commission.
- (2) 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.
- (3) A person seeking to establish an earth station shall:
 - (a) be a body corporate registered to carry on business in Nigeria;
 - (b) obtain a licence before providing such service;
 - (c) submit simplified technical information on the earth station, indicating its possible uses, frequency bands, the parameters of the space station it is working with and any other relevant data;
 - (d) comply with the provisions of the Act and any other legal and regulatory conditions and standards governing satellite use.

6. Earth Station in Motion (ESIM)/VSAT

- (1) Any ESIM/VSAT operating in Nigeria on a permanent basis on-board an aircraft, ship or land mobile vehicle must comply with conditions Paragraph 5(2) a-d of this part) in addition to any other provisions in these Guidelines.

- (2) An ESIM/VSAT on board an aircraft, ship or land mobile vehicle shall require no licensing where the ESIM/VSAT is within the territorial district of Nigeria for a period not exceeding six weeks. Provided that the ESIM has been duly registered in its country of origin.
- (3) A Visiting ESIM/VSAT exceeding six weeks temporary stay shall notify the Commission and obtain the necessary permit from the Commission.
- (4) A Visiting ESIM/VSAT shall not cause any interference to any system in Nigeria.
- (5) A local ESIM/VSAT service provider shall be licensed under an Individual licensee.
- (6) An ESIM/VSAT must have Control and Monitoring Function to ensure interference free operation.

7. Licence Tenure

The tenure of the individual and frequency licences for an earth station shall be ten (10) years each.

8. Licensee's Obligations

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

- (1) 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.
- (2) ensure that no operator is provided service or connected to its network without a licence or authorization from the Commission.
- (3) maintain a database of all customers to whom services are provided.
- (4) ensure that the subscriber's information security is guaranteed and accordingly, the licensee shall not at any time grant access to subscriber data to a third party except in accordance with the Act or any other law in force in Nigeria.

9. Licence Renewal

- (1) A successful applicant will be granted a licence where applicable stipulating full details of rights, privileges and obligations.
- (2) All licences 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 www.ncc.gov.ng

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 a hub of a licensee shall not be required to obtain a separate licence for each earth station 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:
 - (a) If authorized by a foreign Administration may on its own initiative request the authorization of the Commission to provide services in Nigeria.

- (b) Upon the authorization of the Commission in paragraph 13(1)(a) above, is eligible to provide service in Nigeria and the name of that satellite shall be included in the list of Authorized Space Stations maintained by the Commission.
 - (c) obtain a permit upon application for landing rights.
 - (d) ensure that any person providing services using its space segment is licenced by the Commission to do so.
 - (e) maintain a database of all such providers required by (d) above and submit a report to the Commission upon request.
 - (f) 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;
 - (g) 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.
 - (h) 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) A licensee with an earth station shall provide the location and technical parameters of its equipment.
 - (3) Individual users that are activated through the local representative in Nigeria are exempted from licensing.
 - (4) Upon the grant of authorization under these 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.

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) Transponder traffic loading.
 - (h) Saturation flux density at satellite input.
 - (i) Number of earth stations, linkages, number of gateways.
 - (j) Received power level contour.
 - (k) Location of Network Control Centre and Network Operating Centre.
- (2) In addition to the foregoing, applicants will be required to show evidence of ITU coordination filings and licence from the operator's host country regulator.

15. Authorisation 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

The Commission shall administer the following fees with respect to satellite licences:

- (1) Space segment landing rights shall not be paid for, however, authorization shall be for the life span of the satellite.
- (2) Spectrum usage fee for Earth station(s) registered in Nigeria shall be based on the economic value of the spectrum. The following table shall guide the Commission in determining the spectrum fees:

Band	Fee/Annum (USD) or Naira Equivalent at prevailing CBN Exchange Rate
L	\$ 2,000 USD
C	\$ 2,000 USD
Ku	\$ 2,000 USD
Ka	\$ 2,000 USD
ESIM/VSAT TERMINAL(s)	\$ 2,000 USD

17. Type Approval

- (1) All satellite ground stations equipment and portable terminals for end-users, must be type-approved by the Commission before being imported or placed on the market in Nigeria. Manufacturers will be allowed to obtain a general certification for each model, after which users will not be required to type-approve other purchased units of that model.
- (2) Type Approval may however be waived where the applicant or licensee satisfies the Commission that ITU certification has been given under GMPCS Memorandum of Understanding with respect to the said equipment.
- (3) 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.
- (4) Self-declaration of conformity by manufacturers shall not be tenable as alternative to the requirement of type approval under these Guidelines.

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) Maintenance 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) Ensuring minimum separation 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 licences to adhere accordingly.

Definitions

Terms and expressions used in the Guidelines 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;

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

"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;

"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;

"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 licenced owner of a satellite in space;

"Space segment" means any satellite station in orbit;

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

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

Issued this _____ day of _____ 2018