



NIGCOMSAT SYSTEM OPERATION GUIDE (NSOG)

Document NSOG–200 (Rev. 01)

FPROCEDURE OF ACCESS NIGCOMSAT SYSTEM

Approval Date: 1 October 2011

All of the information contained in these NSOG documents is considered proprietary and confidential to Nigcomsat Ltd. You must maintain this information as confidential, may not use the information for any purposes other than for Nigcomsat's system, and may not disclose such information to any third party without the permission of Nigcomsat Ltd.

© 2011 Nigcomsat Ltd



CONTENTS

1. PROCEDURES OF ACCESS NIGCOMSAT SYSTEM..... 1

2. EARTH STATION REGISTRATION..... 5

 2.1 The Standard Earth Station Registration Procedures 6

 2.2 The Standard Earth Station Registration and Approval Process 8

 2.3 The Special Earth Station Registration Procedures..... 8

3. APPROVAL FOR ACCESS AND OPERATION 11

 3.1 Document of Approval 11

 3.2 Verification and Authorization to Operate..... 12

4. FORMS 12

APPENDIX I NIGCOMSAT SYSTEM OPERATION GUIDE (NSOG) 30

APPENDIX II HISTORY OF NIGCOMSAT SYSTEM OPERATION GUIDE (NSOG) 31

APPENDIX III REVISION 32

1. PROCEDURES OF ACCESS NIGCOMSAT SYSTEM

Formal procedures for controlling the f earth stations to access the space segment are necessary to prevent interference to other users of the satellite system, to ensure the establishment of a proper interface with the space segment and to maintain system discipline.

The following paragraphs describe the procedures in obtaining approval for an earth station to operate within the space segment.

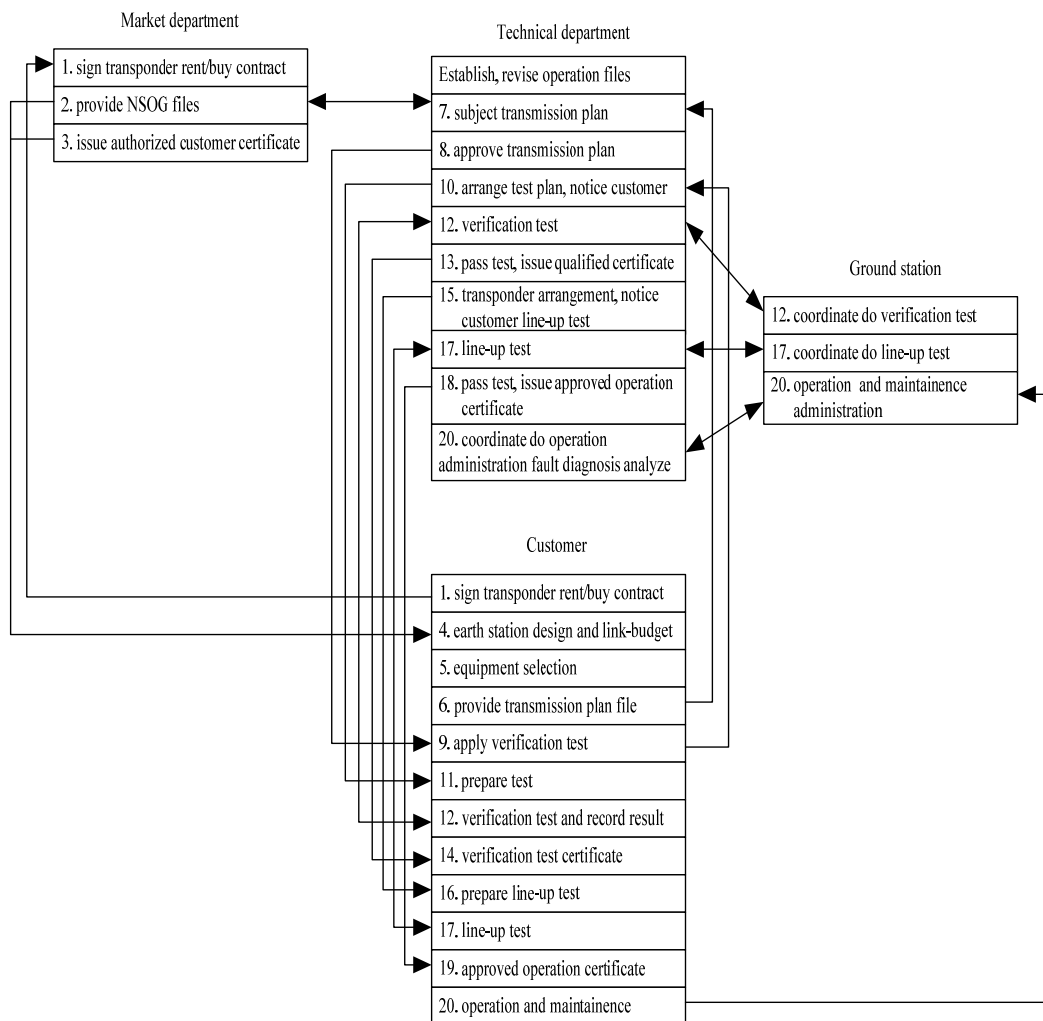


Figure 1 General procedures of access Nigcomsat system

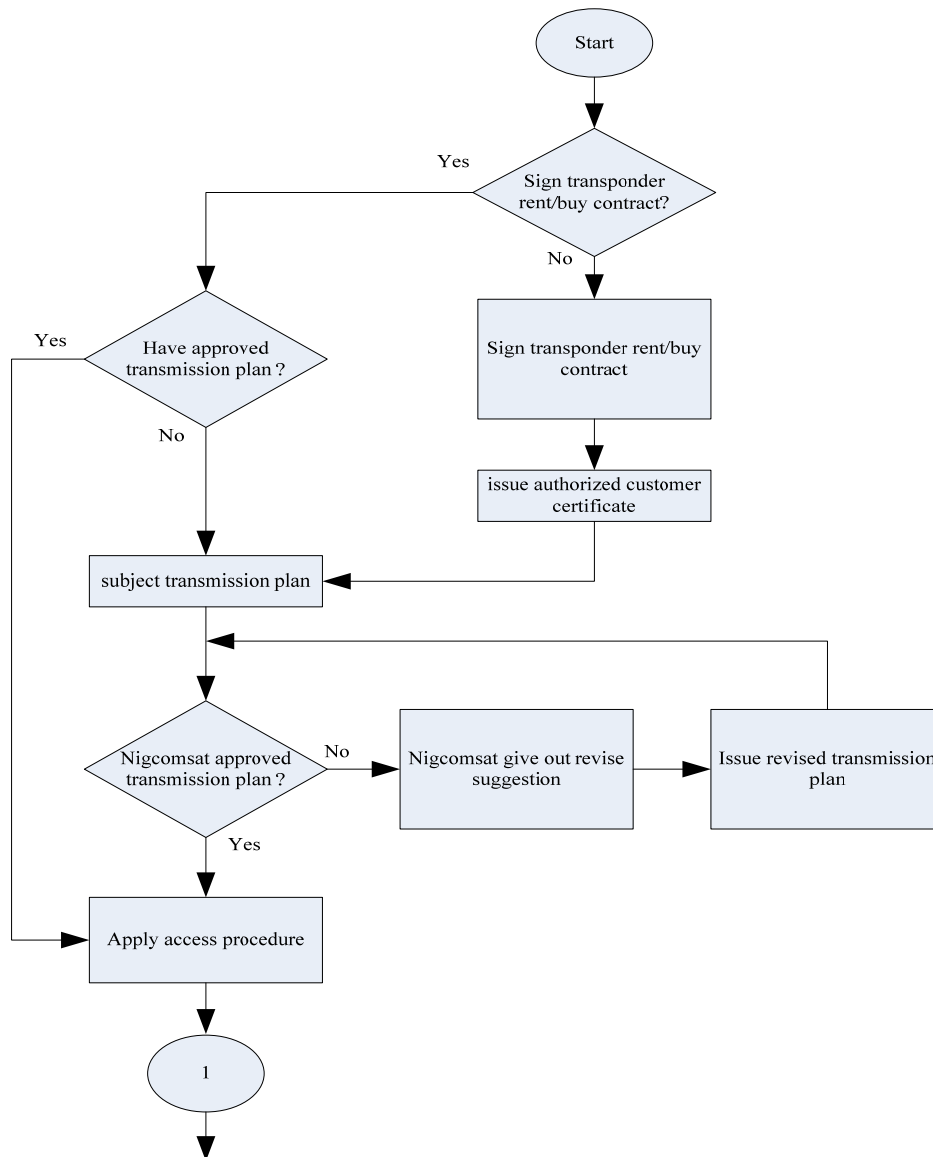


Figure 2 Procedures of providing transmission plan

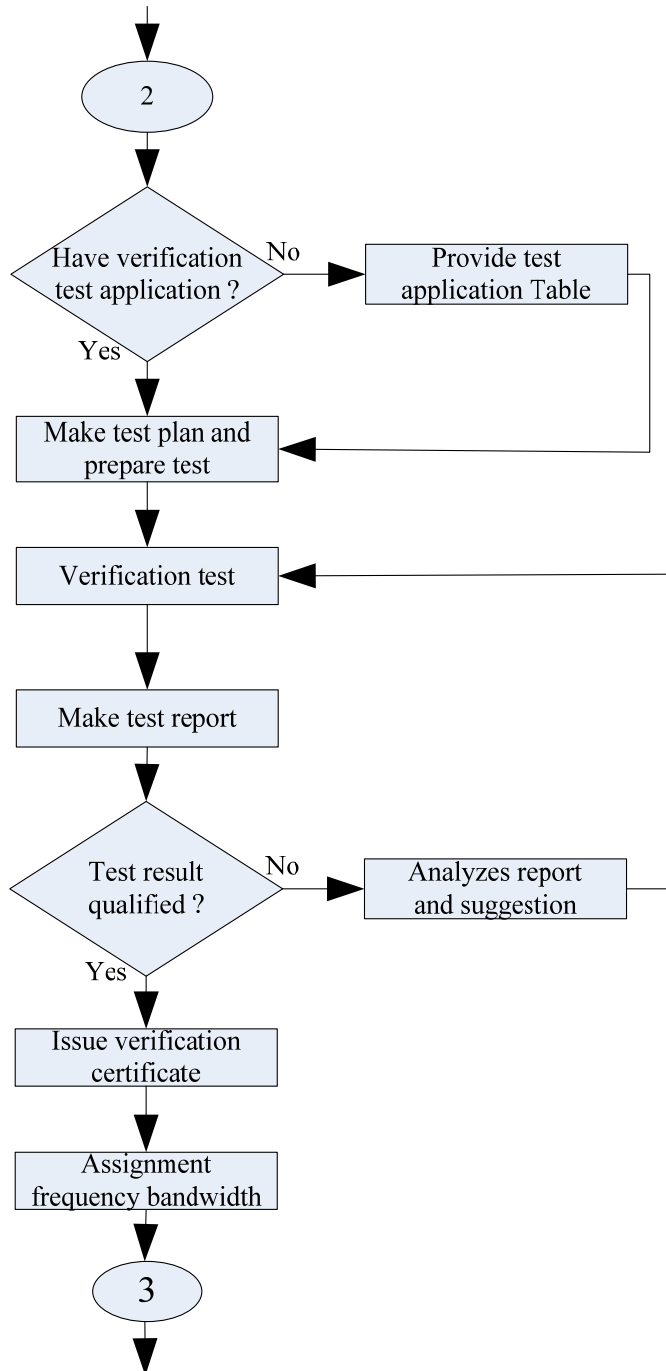


Figure 3 Earth station verification test procedures

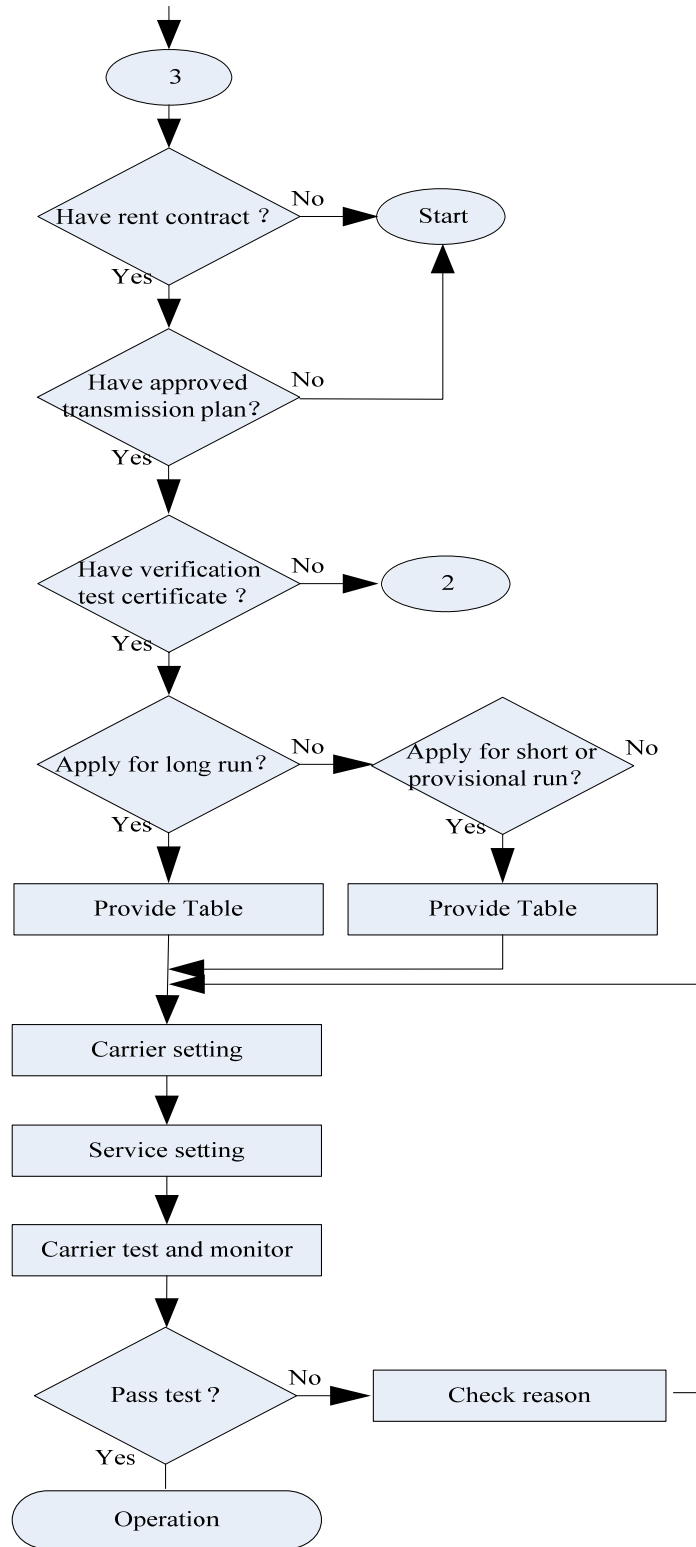


Figure 4 Procedures of earth station line-up test



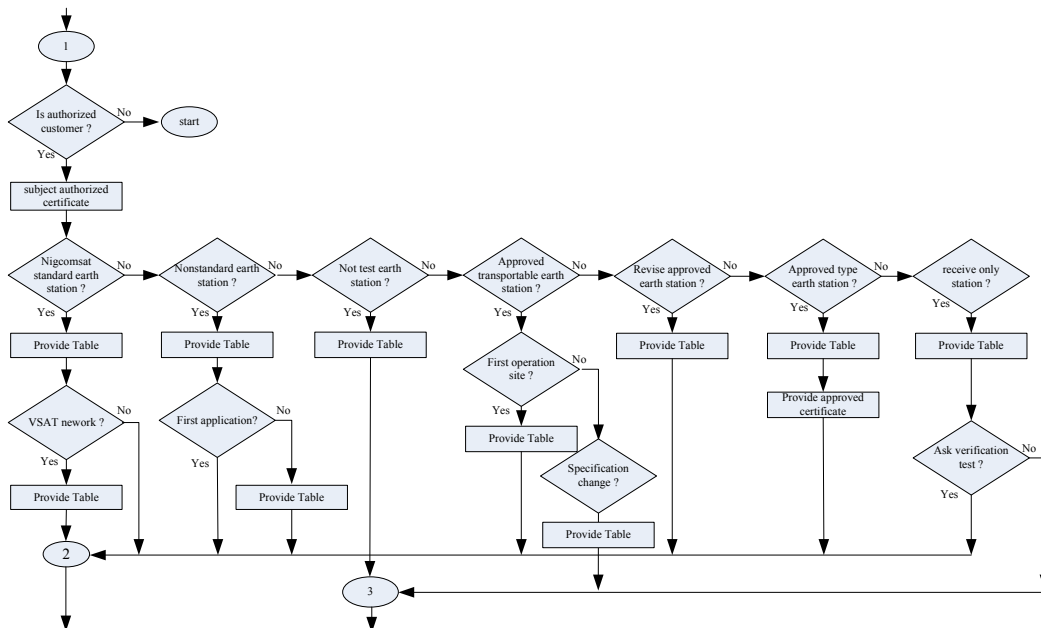
2. EARTH STATION REGISTRATION

The earth station approval process is a means of ensuring that quality. The approval of most earth stations requires the submittal of a registration form that includes administrative data, earth station characteristics, and predicted performance data.

It is a major element for any earth station, regardless of type (fixed or transportable) and service, that co-ordination of RF frequency bands in accordance with the International Telecommunication Union Radio Regulations (ITU Radio Regulations) currently in force has been undertaken to prevent later limitations in use. Any constraints shall be reported to Nigcomsat.

The following types of earth stations may become operational in the Nigcomsat satellite system:

- 1) Standard earth stations.
- 2) Special earth stations.



Fi

Figure 5 Different earth station application procedures

2.1 The Standard Earth Station Registration Procedures

Standard earth stations comprise Standards A, B, C, E, F, G, H and K as defined in the Nigcomsat Earth Station Standards (NESS) documents. The registration and approval procedure depicts a generic process for the registration and approval of earth stations. The procedure for the registration of a new earth station is as follows:

- 1) If you are not an Authorized customer of Nigcomsat, contact the Nigcomsat Sales or Market staff for guidance on the necessary business arrangements to become an authorized customer of Nigcomsat;
- 2) The Registration, Certification & Test Request forms should all be submitted to Nigcomsat Sales Support;
- 3) Nigcomsat will:
 - Process the registration;
 - Acknowledge receipt & assign a unique Nigcomsat Designator Code;
 - Schedule the verification tests (if required).
- 4) If Nigcomsat facilities have been requested for Verification testing, Nigcomsat will provide a Verification Test Schedule and Test Plan. Earth station under test engineers should review the test plan to ensure they understand the procedures, and have the resources and test equipment to perform verification testing;
- 5) At least one business day prior to the scheduled test time, the Earth Station test engineer must:
 - contact the Nigcomsat Antenna Verification Test Facility to confirm that they are ready to begin testing as planned;
 - Prior to testing the test engineer should ensure the following:
 - A good communications link is available;
 - Provide antenna slew rate and jackscrew measurements;
 - Confirm and meet the planned scheduled test time.

- 6) At the scheduled test time, the earth station test engineers should contact the Nigcomsat Antenna Verification Test Facility to perform verification tests of the antenna. Testing is designed to confirm satisfactory performance of the following key earth station parameters:
 - Transmit antenna gain;
 - Transmit sidelobe patterns;
 - Transmit axial ratio (polarization isolation);
 - Transmit e.i.r.p. and frequency stability;
 - Receive G/T performance.
- 7) On completion of testing, Nigcomsat will forward Verification test results to the Authorized Registrant.
- 8) If Verification testing is successful and the Approval Certification Form was previously submitted with the Registration document, the antenna will be approved. If the Approval Certification form was not previously submitted, the Authorized Registrant will be notified. The Standard Certification Form should be signed by the Authorized Registrant and returned to Nigcomsat Sales Support.
- 9) Approval to radiate carriers for service can only be provided by the Nigcomsat on the successful completion of NSOG line-up tests. Nigcomsat will notify the Authorized Registrant of the appropriate NSOG tests based on the registrant's service request.

2.2 The Standard Earth Station Registration and Approval Process

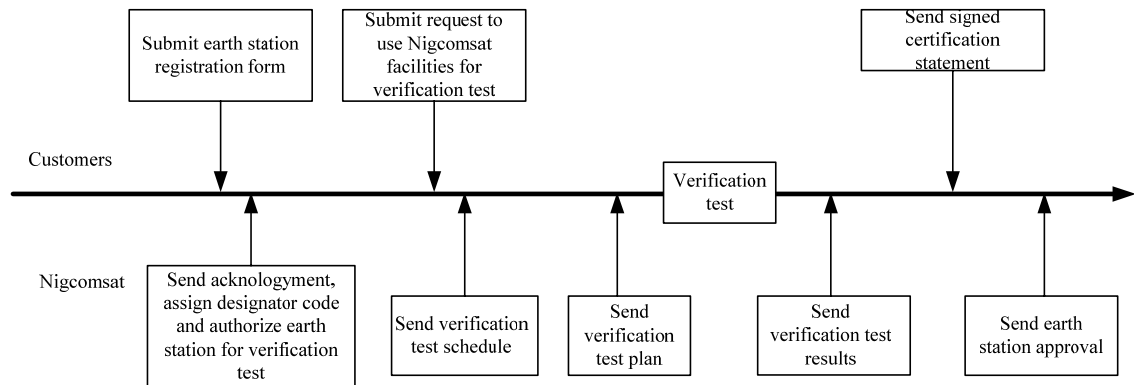


Figure 6 The standard earth station registration and approval process

2.3 The Special Earth Station Registration Procedures

1) General Terms

In addition to standard earth station, earth station are classified into the following categories to simply the registration and approval

- Previously approved earth stations
- Transportable earth stations
- Untested earth stations
- Nonstandard earth station
- Receive-only earth stations
- Type-approved earth stations
- VSAT earth stations

2) Previously Approved Earth Stations

Earth stations in this category generally consist of antennas in one of the following situations:

- Previously operational in the Nigcomsat system & retired from service, now being

reactivated

- Previously operational in another satellite system & moving to the Nigcomsat system

In both cases the Authorized Registrant must submit a new Earth Station Registration form.

In some cases, Nigcomsat will accept the original verification test results for earth stations that previously operated in the Nigcomsat system. If the earth station was relocated, refurbished, repaired or modified during retirement in a manner that modifies the previously approved mandatory characteristics, then retesting of those characteristics will be required.

Nigcomsat is working with other satellite system operators to establish common earth station verification tests so that it may be possible for earth stations approved by another system to simply submit their Earth Station Registration form to Nigcomsat and automatically receive approval to operate in the Nigcomsat system.

3) Transportable Earth Stations

The owner/operator of transportable earth stations is responsible for obtaining the necessary approvals from the Authorized Registrant. The operation of an approved transportable earth station needs no further registration or additional Nigcomsat approvals.

4) Untested Earth Stations

In response to an Authorized Registrant's need to act quickly for special events, Nigcomsat may grant temporary approval to new earth stations which have submitted an Earth Station Registration form, but are unable to perform verification testing before the special event.

For earth stations in this category, untested approval will be granted only once for a specific earth station and will be limited to a specific duration. It is expected that immediately following the special event the earth station will perform verification testing and obtain permanent approval.

5) Non-Standard Earth Stations

Some earth stations will submit an Earth Station Registration form and perform verification testing, but fail to comply with some element of the minimum earth station standards. However, the other measured performance characteristics may render the earth station acceptable, from the customer's perspective, for a particular service.

In this event the Authorized Registrant may request Nigcomsat's approval as a nonstandard earth station. Nigcomsat will evaluate whether the performance characteristics will create harmful interference to other operational or planned services.

When the operation of such an antenna does not result in harmful interference, Nigcomsat will provide approval as a non-standard earth station. This approval may be limited in duration or limited to a particular type of service.

6) Receive-Only Earth Stations

Receive-only earth stations which are used for carrier-based services should submit an Earth Station Registration form and must verify the receive G/T performance.

The earth station registration form, verification testing and approval of Standard G receive-only earth stations which are used for lease services are optional.

7) Type Approved Earth Stations

Earth station manufacturing technology makes it possible to produce and assemble earth stations that reliably replicate standard performance. This allows Nigcomsat to "type" approve earth stations from manufacturers who have successfully demonstrated the proper design and production quality.

Because complexity and configuration variability of earth stations tends to increase with the size of the antenna, most type-approved earth stations have small aperture antennas.

There are three configurations that are type approved:

- Antenna Models (no transmit or receive electronic equipment)
- Antenna System (includes receive LNA equipment)
- Earth Station (includes transmit HPA and receive LNA equipment)

8) VSAT earth stations

VSAT networks in general comprise one (or more) large Hub Stations and numerous small remote stations (the VSAT terminals) which often located in different places. In the context of earth station approval, the Hub stations are subject to the normal procedures for standard (or non-standard) earth stations. For the VSAT terminals, once type approved the approval is normally limited to a simple registration via the Nigcomsat.

3. APPROVAL FOR ACCESS AND OPERATION

3.1 Document of Approval

Following receipt and evaluation of the application, Nigcomsat will register the earth station; provide a document of approval to access the space segment for the earth station. Furthermore, the document of approval specifies conditions and criteria applicable to this earth station. With the issuance of this document, the earth station has obtained”

APPROVAL TO ACCESS THE SPACE SEGMENT". This approval to access can be conditioned by the subsequent successful performance of Earth Station Verification Test (ESVA) and carrier line-up tests.

3.2 Verification and Authorization to Operate

Prior to commencement of operations the earth station shall demonstrate compliance with the specified earth station mandatory performance characteristics. Upon successful completion of all verification and initial line-up testing the earth station will be granted "AUTHORISATION TO OPERATE".

The entity to which an allotment of capacity has been made by Nigcomsat will be responsible and liable to Nigcomsat for compliance with the registered performance characteristics and correct operation of the station throughout the allotment period.

When an earth station fails to meet the mandatory performance characteristics and/or its transmitting signals interfere with effective operation of the overall Nigcomsat space segment or other space systems, Nigcomsat may require that earth station to curtail or to cease temporarily operations with the space segment or may even withdraw the "Authorization to Operate" for that earth station until satisfactory performance is restored.

4. FORMS

- EARTH STATION REGISTRATION FORM
- REQUEST TO USE NIGCOMSAT FACILITIES FOR VERIFICATION TEST
- REQUEST FOR LINK-BUDGET TO CALCULATE G/T
- EARTH STATION VERIFICATION TEST REPORT
- CERTIFICATION FORM OF NIGCOMSAT
- APPLICATION FOR APPROVAL OF A NEW VSAT NETWORK



-
- REGISTRATION OF REMOTE TERMINALS OF A VSAT NETWORK
 - CHANGE OF USER’S EARTH STATION



EARTH STATION REGISTRATION FORM

Submit to: Nigcomsat sales and market
 Abuja, Nigeria
 Telephone:
 Fax:

Page 1

| Signatory | DATE | Direct Access Customer |
|-------------------------------|---------------|------------------------|
| Today's date DD/MM/YYYY | | |
| Sig./DATE/DAC Name | | |
| Country registered | | |
| Sent by (individual) | | |
| Reference | | |
| Telephone | | |
| FAX | | |
| e-mail | | |
| | | |
| Earth station name | | |
| Country located | | |
| Approval authority | | |
| Contract information | | |
| Owner | | |
| Telephone | | Fax |
| e-mail | | |
| | | |
| Earth station operator | | |
| Telephone | | Fax |
| e-mail | | |
| | | |
| 24 hour remote contact | | |
| Telephone | | Fax |
| e-mail | | |
| Nigcomsat antenna type | | |
| | c-band | Ku-band |
| | | Ka-band |
| Standard C | A B D1 D2 | F1 F2 F3 G H2 H3 |
| Standard Ku | H4 C E1 E2 E3 | G K2 K3 |
| Standard Ka(diameter) | | |

EARTH STATION REGISTRATION FORM

Page 2

| | | | | | | |
|--|--|---|----------------|-------------------|--------------|-------|
| Type Approved | | If type approved, complete item 1-4 in addition to remainder of this form | | | | |
| 1. Nigcomsat Type Approval # | | | | | | |
| 2. Authority Name | | | | | | |
| 3. Other Type Approval # | | | | | | |
| 4. Type Approved as | | Antenna model | Antenna system | Earth station | | |
| Attach or FAX a copy of the manufacture's type approval certificate or shipping document for this earth station. | | | | | | |
| Antenna information | | | | | | |
| Antenna manufacturer | | | | | | |
| Antenna model # | | | | | | |
| Feed manufacturer | | | | FAX | | |
| Feed model # | | | | | | |
| Antenna manufacturer's specifications | | | | | | |
| C-band | | | | | | |
| Ku-band | | | | | | |
| Ka-band | | | | | | |
| Usable frequency ranges | | | | | | |
| HPA | | MHz | to | MHz | | |
| LNA/LNB/LNC | | MHz | to | MHz | | |
| Number of feed ports | | transmit | | receive | | |
| e-mail | | | | | | |
| Antenna Shape | | | | | | |
| Circular diameters | | meters | | | | |
| Rectangular | | By | | meters | | |
| Elliptical | | By | | meters | | |
| diamond | | By | | meters | | |
| Antenna Feed type | | offset | Center fed | Cassegrain | Gregorian | Other |
| Auto Track | | Monopulse | Step | Step with memory | Program only | |
| Manual | | Handcrank | Motors | Fixed | Other | |
| Design Parameters | | | | | | |
| transmit | | | receive | | | |
| Transmit axial ratio | | LNA/LNB noise temperature | | | | |
| Transmit antenna gain | | Antenna noise temperature | | | | |
| HPA Max Rated Power | | Receive antenna gain | | | | |
| Maximum EIRP | | G/T | | @ elevation angle | | |

EARTH STATION REGISTRATION FORM

Page 3

| Earth station geographical information | | | | | |
|---|-------|-------|---|---|---|
| Nearest town | | | | | |
| Altitude above sea level | | | | | |
| Transportable yes/no | | | | | |
| Latitude | north | south | D | M | S |
| longitude | east | west | D | M | S |
| Unable geostationary arc | | | | | |
| Earth station type | | | | | |
| truck mount | | | | | |
| Fixed Land | | | | | |
| Marine | | | | | |
| Earth station operation | | | | | |
| Manned full-time | | | | | |
| Manual part-time | | | | | |
| Remotely controlled | | | | | |
| Service information | | | | | |
| Planned operation satellite location | °E | | | | |
| Check all services which apply | | | | | |
| FDMA | | | | | |
| TDMA | | | | | |
| DVB-S | | | | | |
| Application completed and submitted by | | | | | |
| Name | | | | | |
| Title | | | | | |
| Date | | | | | |
| Additional comments | | | | | |



EARTH STATION REGISTRATION FORM

Page 4

| VSAT and Type-Approved | | | | location | | | |
|---|---------|------|-----|--------------|----------|-----------|----------------|
| Name & No. | Antenna | feed | LNA | City or town | latitude | longitude | Altitude above |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Application completed and submitted by | | | | | | | |
| Name | | | | | | | |
| Title | | | | | | | |
| Date | | | | | | | |



REQUEST TO USE NIGCOMSAT FACILITIES FOR VERIFICATION TEST

Submit to: Nigcomsat sales and market
Abuja, Nigeria
Telephone:
Fax:

| | | | | | |
|---|------------------------|-------|------------------------|-----|-----|
| Date DD/MM/YYYY | | | | | |
| Sent by (individual) | | | | | |
| Earth station name | | | | | |
| Telephone | | | | | |
| Antenna size (meters) | | | | | |
| Latitude | north | south | Deg | Min | Sec |
| longitude | east | west | Deg | Min | Sec |
| Elevation above sea level (meters) | | | | | |
| Proposed test date | | | | | |
| Proposed time | | | | | |
| Antenna pointing limitations | | | | | |
| Slew range (degrees) | | | | | |
| Centered on orbital location | | | | | |
| Slew speed (degrees/second) | Azimuth | | Elevation | | |
| Verification to be preformed | | | | | |
| Transmit antenna gain | | | | | |
| Transmit sidelobe patterns | | | | | |
| Polarization isolation | | | | | |
| Antenna eirp and tracking stability | | | | | |
| Receive G/T performance | | | | | |
| Antenna positioner type | Azimuth over elevation | | Elevation over azimuth | | |
| Application completed and submitted by | | | | | |
| Name | | | | | |
| Title | | | | | |
| Date | | | | | |
| Additional comments | | | | | |



REQUEST FOR LINK-BUDGET TO CALCULATE G/T

Submit to: Nigcomsat sales and market
 Abuja, Nigeria
 Telephone:
 Fax:

| | | | | | |
|---|-------|-------|---|---|---|
| Nigcomsat earth station code | | | | | |
| Spectrum analyzer manufacturer | | | | | |
| Spectrum analyzer model No. | | | | | |
| Earth station information | | | | | |
| Antenna size (meters) | | | | | |
| Latitude | north | south | D | M | S |
| longitude | east | west | D | M | S |
| Elevation above sea level (meters) | | | | | |
| Schedule information | | | | | |
| Test time (UTC) | | | | | |
| Test date | | | | | |
| Nigcomsat spacecraft | | | | | |
| Satellite location (°E) | | | | | |
| Test frequency | | | | | |
| Earth station elevation angle | | | | | |
| Spectrum analyzer test results | | | | | |
| Carrier + Noise level dBm | | | | | |
| Noise Floor Level dBm | | | | | |
| Spectrum analyzer noise floor dBm | | | | | |
| Resolution bandwidth Hz | | | | | |
| Correction factor (e.g. 0.75 or 1.2) | | | | | |
| C/No measured (dB/Hz) | | | | | |
| Please attached analyzer display results | | | | | |
| Application completed and submitted by | | | | | |
| Name | | | | | |
| Title | | | | | |
| Date | | | | | |
| Additional comments | | | | | |

EARTH STATION VERIFICATION TEST REPORT

Submit to: Nigcomsat sales and market
Abuja, Nigeria
Telephone:
Fax:

Page 1

| | | |
|--|----------------------------|--------------------|
| Signatory | | |
| Date DD/MM/YYYY | | |
| Company | | |
| Sent by (individual) | | |
| Title | | |
| Telephone | | |
| FAX(e-mail) | | |
| Earth station name | | |
| Nigcomsat earth station code | | |
| Nigcomsat antenna type | | |
| Standard C-band | A B D1 D2 F1 F2 F3 G H2 H3 | |
| Standard Ku-band | H4 E1 E2 E3 G K2 K3 | |
| Standard Ka-band (diameter) | | |
| Measurement facility | Satellite location | antenna test range |
| Transmit Gain | | |
| Horizontal (measured) | dBi | MHz |
| Vertical (measured) | dBi | MHz |
| Measurement method and calculation: | | |
| Transmit sidelobe | Reference 32-29log | Reference 29-25log |
| Attach the sidelobe patterns measurements: | | |
| Transmit polarization isolation | Horizontal | Vertical |
| Minimum measured isolation | | |
| Maximum measured isolation | | |
| Satellite isolation | | |
| Test frequency | | |
| Measurement step size azimuth | degrees | degrees |
| Measurement step size elevation | degrees | degrees |
| Factory feed measurements | dB | dB |
| Receive measurement | | |
| Antenna receive gain | dBi | dBi |
| System noise temperature | ° K | ° K |
| G/T measurement | dB/K | dB/K |
| Attached detailed methods: | | |



CERTIFICATION FORM OF NIGCOMSAT

The _____ was verified tested on _____ using the Nigcomsat-1 facility. This earth station is designed to be compliant with the following NESS standard:

Nigcomsat standard

- A B D1 D2 F1 F2 F3 G H2 H3 H4
- E1 E2 E3 G K2 K3

Ka(diameter):

The following verification tests were performed:

Comments:

Transmit antenna gain: _____ successfully completed _____ _____

Transmit sidelobe patterns: _____ meets NESS standard _____ _____

Polarization isolation: _____ meets NESS standard _____ _____

Transmit eirp and frequency stability: _____ successfully completed _____ _____

Receive G/T performance: _____ meets NESS standard _____ _____

Certification Statement

We hereby certify that we have received and evaluated the attached earth station verification test data and results for the earth station identified above, and certify that earth station is fully compliant with the Nigcomsat Earth Station Standard specified above. We certify that following Nigcomsat’s approval, this earth station will be operated in compliance with the Nigcomsat Satellite Operation Guide procedures. A complete report of the earth station verification testing will be maintained by the earth station as part



of its permanent record. We certify that once approved by Nigcomsat, all reasonable efforts will be made to ensure that this earth station continues to meet the Nigcomsat Earth Station Standard specified above for the operational life of the earth station. We also certify that we are aware of, and shall adhere to, the specific responsibilities and liabilities under the Nigcomsat Operating Agreement for mis-operation of earth stations.

Signature of the Authorized Applicant Title

Name of Authorized Applicant (Print) Date

Number of pages attached _____



APPLICATION FOR APPROVAL OF A NEW VSAT NETWORK

To: Head of Systems Operations Division

Applicant: Date: Ref:

| |
|---|
| 1. GENERAL |
| 1.1 Controlling Hub Station Name: |
| 1.2 Earth Station Code (if registered before with Nigcomsat) : |
| 2. VSAT NETWORK DATA |
| 2.1 Network Name: |
| 2.1.1 Network Topology |
| <input type="checkbox"/> Meshed <input type="checkbox"/> Star <input type="checkbox"/> Unidirectional <input type="checkbox"/> Bi-directional |
| 2.2 Outbound/Inbound Carriers |
| 2.2.1 Outbound Access Protocol |
| <input type="checkbox"/> TDM <input type="checkbox"/> CDMA <input type="checkbox"/> other |
| 2.2.2 Inbound Access Protocol |
| <input type="checkbox"/> SCPC <input type="checkbox"/> TDMA <input type="checkbox"/> DAMA <input type="checkbox"/> CDMA <input type="checkbox"/> ALOHA <input type="checkbox"/> other |
| 2.3 Manufacturer of VSAT Network Management System: |
| 2.4 VSAT Control Centre: |
| Address: |
| P.O. Box: Postal Code: Town: Country: |
| Telephone: +..... Facsimile: +..... E-mail: |
| 2.5 If not manned 24h/day, state single point of contact: |
| 2.6 Operator Name: |
| Address: P.O. Box: Postal Code: |
| Town: Country: |
| Telephone: +..... Facsimile: +..... E-mail : |
| |



| |
|--|
| 3. NETWORK MANAGEMENT SYSTEM |
| 3.1 Can the VSATs radio equipment be powered off remotely from the Hub (i.e. by removing remotely the supply voltage of the VSATs radio equipment ODU (Outdoor Unit)) <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 3.2. If answer in 3.1 was Yes, state the Number of VSATs that can be simultaneously powered-off with one command from NMS :, and state the time necessary to power-off after the command is sent from NMS : |
| 3.3 If answer in 3.1 was No, describe means to remotely cease radiation of VSATs from NMS : |
| 3.4 Describe the means to change the frequency and EIRP of the VSATs from NMS : |
| 3.5 Describe the means to enforce continuous mode of operations of VSATs : |
| 3.6 Describe / send by facsimile details of NMS monitoring facilities: |
| 3.7 Describe Pointing Methods: |
| 3.8 Describe Cross-Polarization Alignment Methods: |
| 3.9 Maximum theoretical separation between outbound and inbound frequency: KHz |
| 4. DATA TO BE TREATED CONFIDENTIALLY <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 5. AGREEMENTS AND CERTIFICATION |
| The applicant agrees with respect to the subject Hub Station and its VSAT Network: |
| for which he has submitted this application to be responsible and liable to Nigcomsat. for compliancewith the requirements of the document of approval as specified by Nigcomsat |
| The applicant also certifies that it is in possession of all the relevant authorizations to operate earth stations, as required by the appropriate National Regulatory Agencies. |
| Place:..... Date: Signature: |
| |
| |



REGISTRATION OF REMOTE TERMINALS OF A VSAT NETWORK

Use separate form for each batch of identical type of terminals in the VSAT network

To : Head of Systems Operations Division

Applicant : Date : Ref :

| | |
|---|---|
| 1. VSAT NETWORK IDENTIFICATION | |
| 1.1. Network Code : | 1.2. Hub station Code : |
| | |
| 2. Nigcomsat Type Approved (if applies), Certificate N° : | |
| | |
| 3. ANTENNA DATA | |
| 3.1 Manufacturer of main reflector : | |
| 3.2 Model (if appl.): | 3.3 F/D (focal length): |
| 3.4 Type | |
| <input type="checkbox"/> Front fed <input type="checkbox"/> Offset Front fed <input type="checkbox"/> other | |
| 3.5 Main Reflector | |
| <input type="checkbox"/> Circular Diameter:m <input type="checkbox"/> Non. Circ. Hor. Axis:.....m Hor. Axis:..... m | |
| 3.6 Frequency Bands [GHz] Gain [dBi] | |
| Rx <input type="checkbox"/> 10.70-10.95 | Tx <input type="checkbox"/> 12.75-13.00 |
| Rx <input type="checkbox"/> 10.95-11.20 | Tx <input type="checkbox"/> 13.00-13.25 |
| Rx <input type="checkbox"/> 11.20-11.70 | Tx <input type="checkbox"/> 13.75-14.00 |
| Rx <input type="checkbox"/> 11.70-12.50 | Tx <input type="checkbox"/> 14.00-14.50 |
| Rx <input type="checkbox"/> 12.50-12.75 | Tx <input type="checkbox"/> 18.10-18.40..... |
| Rx <input type="checkbox"/> 19.70-20.20 | Tx <input type="checkbox"/> 29.50-30.00 |
| 3.7 G/T:dB/K at GHz | |
| | |



| |
|--|
| 4. OUTDOOR UNIT |
| 4.1 Outdoor unit manufacturer : |
| 4.2 Outdoor unit model : |
| 4.3 Power Amplifier |
| <input type="checkbox"/> SSPA Rating: Watt <input type="checkbox"/> other (describe) |
| 4.4 Maximum EIRP capability (in the direction of the satellite) : dBW |
| |
| 5. INDOOR UNIT : |
| 5.1 Manufacturer : 5.2. Model : |
| 5.3 Typical Eb/No vs BER: dB @ 1E-3..... dB @ 1E-6 |
| |
| 6. TERMINAL DATA |
| 6.1 Location Data : Provide location data for all individual terminals of this type in table on the next page. |
| 7. DATA TO BE TREATED CONFIDENTIALLY <input type="checkbox"/> Yes <input type="checkbox"/> No |
| |
| 8. AGREEMENTS AND CERTIFICATION |
| The applicant agrees with respect to the earth station of : |
| for which he has submitted this application to be responsible and liable to Nigcomsat for compliance with the requirements of the document . |
| The applicant also certifies that it is in possession of all the relevant authorizations to operate earth stations, as required by the appropriate National Regulatory Agencies. |
| Place : Date : Signature : |
| |



SIMPLIFIED FORMAT FOR PROVISION OF VSAT LOCATIONS UPDATES

Nigcomsat Network Code: -----

VSAT Antenna Diameter: -----

VSAT Antenna Manufacturer and Model: -----

VSAT Radio Unit Manufacturer and Model: -----

| Country | Nearest Town | Latitude | | | | Longitude | | | |
|---------|--------------|----------|-----|-----|--------|-----------|-----|-----|--------|
| | | Deg | Min | Sec | N or S | Deg | Min | Sec | E or W |
| | | | | | | | | | |
| | | | | | | | | | |

Application Form for Changed Items of the Earth Station

COMPANY:

APPLICANT’S SIGNATURE:

| ITEMS | ADD/MODIFY | ORIGINAL TECHNICAL STATUS | MODIFIED TECHNICAL STATUS | REMARKS |
|-------|------------|---------------------------|---------------------------|---------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |



NIGCOMSAT
AFRICAN ROOTED | GLOBALLY POSITIONED

NSOG –200

Rev.01

Change of User Information

| | | | |
|-------------------------------|------|------------|------------|
| ORGANIZATION/COMPANY: | | | |
| ADDRESS: | | | POST CODE: |
| PERSON IN CHARGE: | TEL: | FACSIMILE: | E-mail: |
| TECHNICAL RESPONSIBLE PERSON: | TEL: | FACSIMILE: | E-mail: |

Change of Communication Network

| | | | |
|-------------------------------|------|------------|------------|
| NETWORK NAME: | | | |
| DESIGNER: | | | |
| ADDRESS: | | | POST CODE: |
| TECHNICAL RESPONSIBLE PERSON: | TEL: | FACSIMILE: | E-mail: |

Change of the Earth Station Characteristic

| | UNIT | MANUFACTURE | MODEL | TYPE | PARAMETER |
|----------------|--------------------|-------------|-------|--------------------------------|--|
| ANTENNA SYSTEM | ANTENNA TYPE | | | | APERTURE: TRANSMISSION GAIN: FEED LOSS: |
| | FEED SYSTEM | | | | PORT NUMBER: POLARIZATION: PORT ISOLATION |
| | TRACKING SYSTEM | | | | TRACKING MODE : AZIMUTH/ELEVATION: |
| | HPA | | | | SATURATION POWER: EXPERTING OUTPUT BACKOFF: POWER STABILITY: INTER-MODULATION CHARACTERISTIC: BANDWIDTH: SPURIOUS(MAX): |
| RF SYSTEM | UP CONVERTER | | | | INPUT FREQUENCY RANGE: FREQUENCY ADJUSTMENT STEP: FREQUENCY STABILITY: OUTPUT LEVEL RANGE: |
| | LNA/LNB/LNC | | | | NOISE TEMPERATURE/NOISE FIGURE: OUTPUT FREQUENCY RANGE: |
| | DOWN CONVERTER | | | | OUTPUT FREQUENCY RANGE: |
| | UPC | | | | FUNCTION : YES <input type="checkbox"/> NO <input type="checkbox"/> CONTROL RANGE: |
| | MODULATION | | | | OUTPUT FREQUENCY RANGE: UTPUT POWER RANGE: MODULATION TYPE: FREQUENCY ADJUSTMENT STEP: |
| FEED CABLE | | | | LENGTH: m CABLE LEAKAGE: dB | |

APPENDIX I NIGCOMSAT SYSTEM OPERATION GUIDE (NSOG)

Category 1—INTRODUCTORY

| NSOG No. | Titles |
|----------|---|
| NSOG101 | INTRODUCTION AND NSOG DOCUMENT LIST |
| NSOG102 | TERMS, DEFINITIONS AND ABBREVIATIONS |
| NSOG103 | OPERATIONAL MANAGEMENT COORDINATION AND CONTROL |

Category 2—ACCESS TO THE NIGCOMSAT SYSTEM

| NSOG No. | Titles |
|----------|--------------------------------------|
| NSOG200 | PROCEDURE OF ACCESS NIGCOMSAT SYSTEM |
| NSOG201 | EARTH STATION VERIFICATION TEST |
| NSOG202 | CARRIER LINE UP TEST |
| NSOG203 | TRANSMISSION PLAN |
| NSOG204 | MONITOR AND CONTROL |
| NSOG205 | NIGCOMSAT TYPE APPROVAL |



APPENDIX II HISTORY OF NIGCOMSAT SYSTEM OPERATION GUIDE (NSOG)

VERSION
01

APPROVED DATE
2011-10-01



APPENDIX III REVISION

NO REVISION OF THIS VERSION.