NATIONAL POLICY ON
VSAT INSTALLATION
CORE SKILLS
FOR NIGERIANS

FEDERAL MINISTRY OF COMMUNICATIONS AND DIGITAL ECONOMY

Leveraging Digital Technology for
National Economic Development

CONTENTS

Foreword

Satellite technology provides a cost-effective means of receiving, processing and transmitting digital content and also unlocks access to digital solutions and services no matter the geographical location. Solutions that are based on satellite technology are easily deployed without the huge cost of laying underground cables since they mainly require the installation of an earth station or a receive-only antenna system. By putting a satellite in orbit and an earth station on the ground, broadband internet services or Direct to Home (DTH) services can be provided to customers within a very short period.
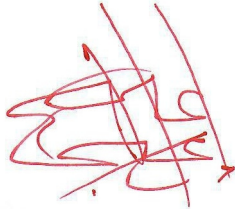
According to the Global VSAT (Very Small Aperture Terminal) Forum, developing countries are also turning to satellite-based solutions and making it possible to link the value chain from providers of raw materials to consumers in widely separated geographic areas. Satellite systems are increasingly playing a pivotal role in the growth of the global digital economy as a result of benefits that they provide. These benefits include reduced costs and improved accessibility in difficult terrains, rural and remote areas.

Satellite communications can also be used to significantly improve the output of every sector of the economy of a nation. Internet Service Providers, banks, the stock exchange, schools, hospitals, and other sectors can take advantage of satellite technologies to improve their services and their range. Hence, developing countries can take advantage of satellite-based services to achieve higher economic and social standards that would attract more foreign direct investment, which would in turn create more digital jobs and revenue for government. This policy fully aligns with the job creation priority of the administration of His Excellency, President Muhammadu Buhari (GCFR).

There is currently a significant skills gap exists in the satellite industry across the Nation. It is therefore necessary to put in place a National Policy for VSAT installation Core Skills. The Policy is expected to enable the provision of specialized skills to Nigerians and avail them with opportunities to be engaged locally and by global satellite operators for VSAT installation.

The Policy envisions an approach where VSAT Installation Core Skills will go

beyond just learning installation techniques. Rather, it will also prepare the trainees to provide top level service to clients, while complying with established regulations. I encourage Nigerians to utilize this opportunity and build their skills in these specialized areas. I equally encourage the youth to take advantage of this Policy to empower themselves with these skills. This is a sure way to participate in building a workforce for the satellite industry in conformity with globally accepted standards.

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Federal Republic of Nigeria

1.0 Introduction

Digital technology drives innovation and creates job opportunities that can lead to economic prosperity. To develop and promote the Digital Economy for Nigeria, a National Digital Economy Policy for a Digital Nigeria was developed. The Policy has the following 8 pillars:

(i)   developmental regulation;
(ii)   digital literacy and skills;
(iii)   solid infrastructure;
(iv)   service infrastructure;
(v)   digital services development and promotion;
(vi)   soft Infrastructure;
(vii)   digital society and emerging technologies; and
(viii) indigenous content development and adoption.

However, the foundation for the realization of digital economy for Nigeria and actualization of the 8 pillars of the National Digital Economy Policy is access to broadband, as captured in Pillar #3. Bearing this in mind, the Ministry developed a Nigerian National Broadband Policy (2020-2025) to support the growth of broadband connectivity in the country. The National Policy on VSAT Installation Core Skills for Nigerians is therefore essential for the acquisition of the skills required to drive the infrastructure related pillars of the National Digital Economy Policy and the Broadband Plan.

The Nigerian Communications Satellite (NigComSat–1R), one of the Critical National Infrastructure under the purview of the Federal Ministry of Communications and Digital Economy, can be leveraged to deepen broadband penetration and deliver Direct to Home (DTH) Services in the country.

These services however require the deployment of Very Small Aperture Terminals (VSAT), Television Receive Only (TVRO) antennas and configuration of Customer Premise Equipment (CPE). Furthermore, to effectively deploy these services, training and re-training of Nigerians on VSAT installation, TVRO Antenna Installation and configuration of CPE is required.

Training citizens in these technologies align with the global trend. For example, the United Nations (UN) Regional Centers for Space Science and Technology was created to develop skills and knowledge of university educators, telecom professionals, and others in the principles and applications of Space Science Technology.

In the same vein, a youth empowerment program through technical and vocational education and training (TVET) is underway in The Gambia in partnership with the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The

program is an effort to "find decent employment by providing lifelong learning opportunities as recommended by SDGs 4 and 8".

Addressing the capacity gap in the delivery of satellite-based services is therefore now considered as an urgent imperative to improve the quality of life in communities, especially in remote and rural areas where most of the population are situated.

This Policy will provide guidance for the proposed program that seeks to provide the required specialized skills for the promotion and deployment of satellite-based services in Nigeria. Through the Programme, Nigerians will be equipped with the necessary skills to be able to install a VSAT and TVRO antenna anywhere to access available satellite-based services.

1.1 Authority

This Policy has been developed by the Honourable Minister of Communications and Digital Economy in line with the following Sections of the Constitution of the Federal Republic of Nigeria 1999:

i. Section 148 (i) of the Constitution: "The President may, in his discretion, assign to the Vice-President or any Minister of the Government of the Federation responsibility for any business of the Government of the Federation, including the administration of any department of government"; and

ii. Section 148 (ii) (a) of the Constitution:" Determining the general direction of domestic and foreign policies of the Government of the Federation."

This Policy can be cited as "National Policy on VSAT Installation Core Skills"and shall come into effect the date of the signature.

Vision and Mission

Vision

"To deepen broadband penetration, and boost the development and utilization of satellite-based services in Nigeria"

Mission

"We produce certified VSAT and TVRO antenna Installers through national technical training in Nigeria"

3.0 Rationale

The National Policy for VSAT installation Core Skills is to enable the provision of specialized skills to Nigerians and avail them of the opportunity to be engaged in VSAT installation. There is also a serious challenge of inadequate manpower for engagement in the Communication Satellite Industry in the six geo-political zones.

Accordingly, the few personnel available are not evenly distributed across the country. This causes some delay in the provision of satellite services, with installers having to travel long distances, adding to overall cost of providing the service and potentially putting the installers at risk. Furthermore, a lot of VSAT installers are not properly trained and this leads to shoddy installations. Empirical evidence has shown that when installations that are done by untrained installers, the quality of service of such networks are adversely affected. In some cases, they result in interference with another satellite or network.

4.0 Goals

The Policy aims to achieve the following:

(i)   specialized skills acquisition by Nigerians that provides them the skills required to thrive in a digital economy;

(ii)   job creation through engagement by satellite operators, Internet Service Providers, television stations and households for deploying satellite-based services;

(iii) improvement in quality of satellite services through the training and certification of VSAT installers;

(iv)   conforming to ITU regulations and Satellite Operations' Guidelines by the trained and certified installers in order to reduce all forms of satellite interference caused by second-rate installations; and

(v)   attainment of set goals in the Nigerian National Broadband Plan 2020-2025 for the provision of broadband internet services in the unserved and underserved region and to enhance the delivery of DTH services to households.

5.0 Guiding Principles

The following guiding principles provide a suitable requirement for implementing the policy:

(i)   conforming to Nigerian Communications Satellite System Operations Guidelines (NSSOG) and NIGCOMSAT Earth Station Standards (NESS) during carrier lineup and test and measurement operations;

(ii) use of a Standard Network Operations Center resources that are well calibrated to ensure accurate display of test results; and

(iii) applying the Nigerian Commercial Satellite Communications Guidelines for protection from impermissible levels of interference.

6.0 Policy Scope

The Policy targets providing specialized skills to Nigerians in all the six geo-political zones on VSAT and Television Receive Only (TVRO) antenna installation for the delivery of satellite-based services. In the first instance, 300 installers are to be trained quarterly from each geo-political zone making a total of 1,800 trained installers per quarter and 7,200 annually. This shall be scaled in a continuous manner until the required number of technicians have acquired the requisite skills to appropriately support the demands of the satellite services industry.

It is also expected that the Policy will unlock access to digital economy opportunities in the satellite industry for the youth that participate in the specialized training programme. The training component is developed for young Nigerians who are between the ages of 18 years and 35 years for the purpose of learning and acquiring the required skill set for installing VSAT and TVRO antennas across the country and beyond.

NUMBER OF VSAT/TVRO INSTALLERS TO BE TRAINED
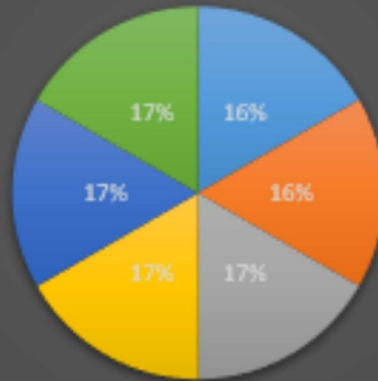
1 SOUTH-SOUTH 2 NORTH-CENTRAL 3 NORTH-EAST 4 SOUTH-WEST 5 SOUTH-EAST 6 NORTH-WEST

This policy applies to:

(i) Nigerians in tertiary institutions with a background in the sciences and engineering;

(ii) existing TVRO installers within the age of 18 years to 35 years;

(iii) Nigerians that have completed secondary schools with background in the sciences and engineering; and

(iv) graduates of Engineering and Science Courses.

NUMBER OF VSAT/TVRO INSTALLERS TO BE TRAINED IN EACH CATEGORY
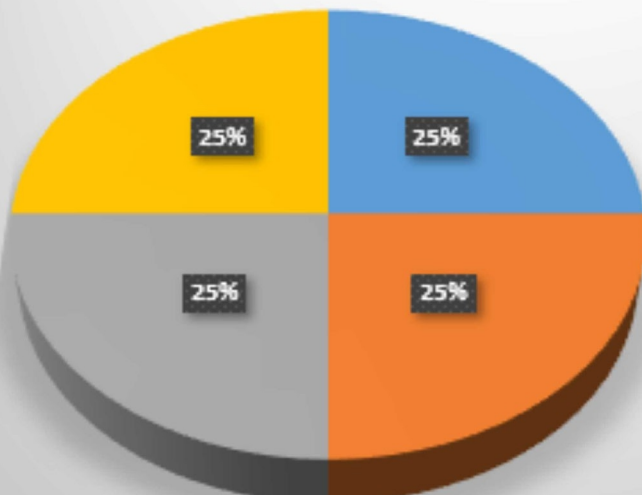
1 EXISTING TVRO INSTALLERS

2 STUDENTS FROM TERTIARY INSTITUTIONS

3 GRADUATES

4 SECONDARY SCHOOL CERFICATE HOLDERS

6.1 Training Scope

The training is targeted to produce potential employers rather than employees. The main objective of the training is for youth to acquire skills and start their journey of becoming the future startups in the Nigerian Space Industry. The training scope includes, but is not limited to the following areas:

(i)   fundamentals of communications satellite systems;
(ii) fundamentals of broadband services;
(iii) fundamentals of DTH services;
(iv) VSAT and TVRO antenna installation techniques and procedure;
(v)   VSAT installation practical sessions;
(vi) TVRO antenna installation practical session;
(vii) NIGCOMSAT Earth Station Standards (NESS);
(viii) NIGCOMSAT Satellite System Operations Guidelines (NSSOG)
(ix) demonstrations of skills learnt; and
(x)   troubleshooting techniques.

6.2 Expected Training Outcome

The specific knowledge, skills, or expertise expected of a trainee upon completion of the training are as follows:

(i)   all participants should have a good understanding of communication satellite system, broadband services and DTH services;
(ii) all participants should have a good understanding of communication satellite links;
(iii) all participants should have a good understanding of NESS and NSSOG guidelines;
(iv) all participants should have a good understanding of satellite space segment and ground segment;
(v)   antenna systems, VSAT components and their functions should be fully understood by participants;
(vi) understanding of simple uplink and downlink frequency conversion for each of the bands by participants;
(vii) all participants should be able to identify and understand required process and techniques for VSAT installation;
(viii) all participants should be able to cast the foundation for a VSAT;
(ix) during the practical session participants should be able to identify all active and passive components and assemble all parts of the VSAT;

(x) participants should be able to point to the satellite using standard antenna-pointing techniques;

(xi) participants should also be able to conduct cross-pol isolation test and 1dB compression test while coordinating with the Network Operations Center (NOC) engineers; and

(xii) all participants should be able to configure the modem and commission the site while coordinating with the hub engineers; and

(xiii) all participants should be able acquire proper techniques in client interaction and customer satisfaction as the client-facing representatives.

6.3 Certification

All the activities outlined in the certified training programmes are to be in line with global best practices, and in compliance with the requirements of relevant professional bodies such as Global VSAT Forum (GVF).

The would-be trainees are expected to attend intensive theoretical and hands-on training and demonstrate high level of commitment to be certified NIGCOMSAT trained VSAT Installers. The training should last for at least 7 days.

7.0 Strategy

The Nigerian Communications Satellite Limited (NIGCOMSAT) will implement this policy in collaboration with other stakeholders under the supervision of the Federal Ministry of Communications and Digital Economy.

The Policy mandates the trained engineers at NIGCOMSAT and other certified Satellite Professionals to serve as resource persons for conducting the training. NIGCOMSAT-1R Satellite in Orbit, Satellite Infrastructure Company (SIC) and Satellite Broadband and Broadcasting company (SBBC) resources should also be utilized for the training programs. Although the training programme is to be conducted in different selected locations nationwide, the network facilities can be remotely accessed during the training programmes.

The VSATs used for each service may be different and the procedures for integration of the VSAT with the Customer Premises Equipment (CPE) that would enable the delivery of the service would differ as well. However, the program should demonstrate to each participant how to install any VSAT that would be used for satellite-based services.

NIGCOMSAT, as the driver of the program, is expected to demonstrate to each participant how to integrate the VSAT into their network for delivering broadband internet services on Ku, Ka, and C band. The course should focus on delivering practical skills and it is should be participatory, rather than merely theoretical.

The training programme should be made easy to understand and straightforward. Videos and course materials should be developed and distributed to assist in retention of the practical aspect of the training or serve as a guide for the participants. Other stakeholders could be engaged to teach and demonstrate to the students how to integrate the VSAT to Pay-TV services as well the reception of free-to-air TV services available in their locality.

The main functions of NIGCOMSAT during the training include, but are not limited to the following, where relevant:

(i) to come up with modalities for implementing the policy;
(ii) to carry out a workshop for all state program coordinators, certified installers, trainers and professionals that will conduct the trainings;
(iii) to develop and implement strategies to facilitate the speedy and efficient implementation of the policy;
(iv) to collaborate with other stakeholders to ensure in-depth scope, knowledge, and materials necessary to equip participants to be able to install any type of VSAT for services available in their locality;
(v) to develop a robust application processes that will facilitate the selection of participants in a fair and equitable manner;
(vi) to streamline the implementation and decision-making in order to ensure a consistent approach across all venues;
(vii) to create awareness and provide the public with clear and current information on the program;
(viii) to provide clear guidelines on procedures for participants to take part in the selection process;
(ix) to ensure that the developed framework focuses on practical skills to ensure the fulfillment of the objectives of the program; and
(x) to appoint a Project Coordinator and create a team that would include other willing stakeholders that would drive the implementation of the policy.

The focus of the programme is on acquiring the requisite VSAT Installation skills by the trainees who undergo the training programme. Successful trainees are expected to become tutors in future programs at various states across the country. This will reduce implementation and logistics costs.

The following should also be taken into consideration in implementing the

Programme:
  (i) <u>Venue:</u> suitable training venue to be selected from each geo-political zone quarterly as the training location;

  (ii) <u>Selection process:</u> Participants are to be selected using the online process and any other means to ensure inclusiveness, and at least 300 students would be selected for each program from each zone; and

  (iii) <u>Logistics:</u> NIGCOMSAT as the convener of the training would come up with the modalities including:
    1. budgetary requirement for organizing the training;
    2. cost for deploying antennas for practical sessions and training materials;
    3. basic Installation Kits/Tools to be issued;
    4. Duty Tour Allowance (DTA) for NIGCOMSAT Trainers and honorarium for invited Certified Installers and Professionals; and
    5. other logistic requirements.

8.0 Awareness Creation

In order to create awareness for Nigerians to participate, the Federal Ministry of Communications and Digital Economy in collaboration with Nigerian Communications Satellite Limited will be convening conferences and workshops regarding VSAT Installation training program at strategic locations.

Information regarding the policy and its importance will be communicated to the public through awareness-raising activities such as: issuing press releases; media; and the creation of educational materials. Furthermore, information regarding the policy and its implementation will be disseminated through TV programs, radio programs, and through a range of tools and platforms such as the Internet, socialmedia, newspapers and billboard campaigns.

9.0 Monitoring and Evaluation

Monitoring is set to be achieved through the establishment of a database at the back-end which will provide a real-time record of those that have participated in the training program. The front-end of the data base will provide access through a dashboard to the monitoring and evaluation team to ascertain if the set targets are met and determine if modification or improvements are to be made.

Performance reports can also be generated thereby establishing evidence-based data for evaluating the entire program. The Federal Ministry of Communications and Digital Economy will have a monitoring and evaluation team comprising members from the Ministry, NIGCOMSAT and Galaxy Backbone to visit the training program venues to ascertain if the training is provided in accordance to the scope of the training program.

Some of the functions of the monitoring and evaluation activities include the following:

(i) improve the training programme through the identification of bottlenecks and submitting recommendations to ensure the objectives of the policy are met;
(ii) ascertain if the mode of delivery and contents are following global best practice;
(iii) provide evidence of how efficient the budgetary provisions are used for the training program;
(iv) publish yearly data on the impact of the training program to the Satellite Communication Industry; and
(v) determine if the objectives of the policy are met.

10.0 Funding

Training fees will apply for those that are interested to be trained as installers, however government will be responsible for providing the training equipment, honorarium for certified professionals, logistics for training venues, training tools to be issued to installers and any other important training components through budgetary allocations.

The rationale for charging training fees is not to be used as a source of profit for the government but rather to compensate for administrative and logistics costs in the selection processes. Appropriate budget provisions will be established based on course content depth, course duration and the levels (Beginner, Intermediate and Advanced). However, VSAT training for the tertiary institution shall be at no cost to the beneficiaries.

11.0 Review and Approval of Policy

The National Policy on VSAT Installation Core Skills is subject to a periodic review to ensure compliance with global satellite industry best practices and to ensure

identified challenges are addressed.

12.0 Conclusion

The Federal Ministry of Communications and Digital Economy through the parastatals under her supervision will continue to formulate policies that will be of great benefits to Nigerians. In view of this, having a policy document on VSAT Installation Skills will enhance the implementation of the National Broadband Plan, facilitate the delivery of satellite-based services and provide opportunities for job creation.

It will also support in accelerating the attainment of a sustainable digital economy for Nigeria. Furthermore, human capacity building and technical skills for the teeming Nigerian youth is also achievable through the implementation of the policy which will facilitate the creation of jobs in the country.

Acronyms

VSAT	-	Very Small Aperture Terminal
TVRO	-	Television Receive Only Antenna
FMCDE	-	Federal Ministry of Communications and Digital Economy
NIGCOMSAT	-	Nigerian Communications Satellite Limited
DTH	-	Direct to Home Services
NESS	-	NIGCOMSAT Earth Station Standards
NSSOG	-	NIGCOMSAT Satellite System Operation Guidelines
NOC	-	Network Operations Center
SIC	-	Satellite Infrastructure Company
SBBC	-	Satellite Broadband and Broadcasting Company
CPE	-	Customer Premises Equipment

Key Stakeholders

1. Federal Ministry of Communications and Digital Economy
2. Nigeria Communications Satellite Ltd.
3. Nigerian Communications Commission
4. National Information Technology Development Agency
5. Galaxy Backbone Plc.
6. Universal Service Provision Fund
7. Central Bank of Nigeria
8. National Space Research and Development Agency
9. Nigerian Television Authority
10. Startimes
11. DSTV
12. Micro Access Limited
13. Tertiary Institutions
14. Bureau for Public Procurement
15. Association of Telecommunications Companies of Nigeria (ATCON)
16. Association of Licensed Telecommunications Operators of Nigeria (ALTON)

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