

Abia State Dig-Once Policy for Telecommunications Infrastructure By

Ministry of Digital Economy and Small and Medium Enterprises,

Ministry Of Science and Technology,

AND

Ministry of Works.

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List of Acronyms

A4AI Alliance for Affordable Internet

ADI Affordability Drivers Index

ALGON Association of Local Governments of Nigeria

ALTON Association of Licensed Telecom Operators of Nigeria

ATCON Association of Telecommunications Companies of

Nigeria

CNI Critical National Infrastructure

COD Corrugated Optic Ducts

COREN Council for the Regulation of Engineering in Nigeria

DOIC Dig-Once Implementation Council

FAN Federal Airports Authority of Nigeria

FCCPC Federal Competitions and Consumer Protection

Commission

FCT Federal Capital Territory

FMoCIDE Federal Ministry of Communications, Innovation and

Digital Economy

FMFBNP Federal Ministry of Finance, Budget and National Planning

FMoWH Federal Ministry of Works and Housing

FMoWR Federal Ministry of Water Resources

FTTH Fibre to the Home

GBB Galaxy Backbone Ltd

HDPE High-Density Polyethylene

ICT Information & Communications Technology

ISPs Internet Service Providers

IWGs Industry Working Groups

NCA Nigeria Communications Act

NCC Nigerian Communications Commission

NGF Nigerian Governors' Forum

NIXP Nigerian Internet Exchange Point

NIWA National Inland Waterways Authority

NigComSat Nigerian Communications Satellite Ltd

NNBP National Broadband Plan

OFC Optical Fibre Cables

ONSA Office of National Security Adviser

RoW Right-of-Way

SPV Special Purpose Vehicle

Definitions

i. Duct:

A duct is a shared facility that is deployed to house transmission cables and could be accessed by industry players in a non-discriminatory manner.

ii. Right-of-Way (RoW):

Right-of-Way is defined as a legal right allowing utility operators to deploy infrastructure on Federal, State, or Local roads for a fee or for free.

Foreword

The expediency of broadband technology to revolutionise the economy and livelihood of Abians cannot be overstated. Abia State is a thriving hub for commercial activity and creativity, and therefore immensely blessed with human capacity and entrepreneurial acumen that must be harnessed to achieve the true potential of the State. We have therefore identified critical communications infrastructure and technology as a vital fulcrum to galvanize our people and Abia State to take its place its place as Africa's leading technology hub. Our commitment to securing the future prosperity of Abia State has led to the initiation of a Dig-Once Policy as a sustainable method for promoting digital technology by supporting fibre deployments in the state.

The Dig-Once Policy for the utility infrastructure, but in the case concerned Telecommunications Infrastructure in Abia will enable the adoption of a planned and coordinated excavation/trenching projects along the utility corridor known as public Right-of-Way (RoW) by the Public Works, Public Utilities companies, telecommunication National or regional carriers, Broadband/Internet Service Providers (ISPs) and other relevant

stakeholders. Implementation of the Dig Once Policy will improve costeffective infrastructure deployments as it eliminates frequent excavation for upgrade and maintenance purposes and will limit damages to installed infrastructure in Abia State.

The Abia Dig-Once policy will also facilitate the erection of underground deploy providers easily to future enable which will ducts utility/telecommunication infrastructures such as (optic fibre) cables. Accordingly, as we coordinate construction projects, we will prioritize the installation of broadband infrastructure which will save enormous costs that may be incurred by repeated excavation in areas where these ducts already exist. We will also work in concert with all responsible Ministries, Agencies, and Departments of the Abia State Government and Federal Government to ensure adequate coordination. This will also help to reduce deployment time by preventing the need to acquire duplicative (Federal and State) permits for work done at the same location. The practice effectively eliminates the need to dig up paved roads to expand broadband infrastructure, significantly reducing the cost of deploying internet access nationwide as well as the incidence of Fibre cuts.

Accordingly, the implementation of the Dig-Once Policy which will cut across all utility infrastructure on a broad scale will in the case at hand not only have a significant impact on the acceleration of the deployment of cost-effective metro fibre network infrastructure in Abia, for ease of broadband penetration but it will also enhance the uniformity of construction and encourage infrastructure providers to compete favourably in the state. The Policy will also protect new and existing paved roads and sidewalks from constant excavation and ensure efficient, non-duplicative

placement of infrastructure within the State. We, therefore, encourage all stakeholders and infrastructure providers to support the implementation of the state utility Dig-Once Policy for broadband infrastructure in Abia State along the mapped-out utility corridor.

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Signed

Dr. Alex C. Otti, OFR

Executive Governor of Abia State.

1.0 Introduction

The Affordability of broadband services in Nigeria has improved due to competition between the major Internet Service Providers (ISPs) in the country. Alliance for Affordable Internet (A4AI) ranked Nigeria 28th out of 99 countries surveyed on the 2019 Affordability Drivers Index (ADI). The report shows that Internet services are still unaffordable for the majority of the population.

According to the Nigerian National Broadband Plan (NNBP), broadband penetration is hampered by the high cost of RoW licenses, long delays in obtaining permits, multiple regulations and taxation by Federal, State, and Local Governments as well as damage to fibre infrastructure during road construction and other civil works.

The total length of fibre laid in Abia State in this case backhaul fibre is 1296.46 KM, indicating that Abia State is underserved when it, comes to metro fibre and access point fibre infrastructure deployment compared to Edo State, the second most highly concentrated State in Nigeria with a metro network, which has 4,892.71 KM. The proposed Dig-Once Policy will significantly address most of the challenges facing the expansion of utility infrastructure but the case is the presentation of the broadband deployment in the state. The policy is structured to incentivise prospective investors and service providers into the broadband space in Abia State, reduce the cost of acquiring the RoW licenses and permits, and State equity contribution in the venture by making RoW free. It will also eliminate the need to damage roads to deploy fibre-optic cables or other forms of utility infrastructure. The Policy would restructure the process of utility (fibre

optics) deployment management make it easier and more transparent and eliminate arbitrary taxation, multi-taxation, and regulations involved.

Talking about fibre optics, Nigeria has a primary fibre optic backbone infrastructure presence in all 36 State capitals which includes Abia State. Out of the 17 existing Local Government headquarters in Abia State, very few are connected on the route of the primary fibre backbone. Metropolitan networks only cover part of Lagos, Port Harcourt, and Abuja, however, there are no metropolitan fibre networks in Umuahia or Aba in Abia State.

Therefore, the implementation of the Abia State Dig-Once policy would improve fibre optics infrastructure within the State. The policy would attract Federal Government and private sector investments in national fibre deployment. In addition, the policy would deepen broadband penetration and increase the availability of broadband services by making it easier to expand the fibre infrastructure across the state. It would also increase the quality and affordability of Internet services by reducing the cost of deployment and increasing competition in the State.

2.0 Direction of the Policy

The Policy targets the implementation of a Dig-Once approach for the Abia State that will facilitate the provision of a ready-made secured duct facility for the installation of fibre optic cables and deployment of broadband internet services in a manner that deters unnecessarily repeated excavations. Furthermore, the Policy is also intended to ensure and promote the sharing of broadband infrastructure which will reduce the cost of deployment of broadband internet services nationwide and reduce unnecessary delays in obtaining RoW licenses.

To harness the economic benefit of having an Abia State Dig-Once Policy, it is expected that this policy will ensure collaboration with stakeholders so that secured ducts are made part of construction works on Federal and State roads as well as building constructions across the State. The Dig-Once Policy is expected to stimulate the adoption of its objectives statewide through the initiation of the Dig-Once Bill, Dig-Once Regulations and Standards, and the Establishment of the Dig-Once Implementation Council (DOIC).

3.0 Policy Period

The policy will remain in use perpetually and the Ministry of Digital Economy and SMEs, Ministry of Science and Technology, Ministry of Works, Ministry of Lands and Housing, Ministry of Justice, Umuahia Capital Development Authority (UCDA), Greater Aba Development Agency (GADA), Ministry of Power and Public Utilities (Ministries) will continue to monitor the progress being made and come up with recommendations for review where necessary. The Ministries will provide funding for the Dig-Once Implementation Council and facilitate the adoption and implementation of the Policy.

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to promote the establishment and implementation of Dig Once medals

4.0 Policy Objectives

The Objectives of the Policy include but are not limited to the following;

- i. to provide shared infrastructure for existing ISPs and new entrants;
- ii. to promote the installation of ready-made secured fibre duct for rapid broadband deployment;
- iii. to reduce the barriers to entry for ISPs;
- iv. to promote coordination and reduce the number of excavations and disruptions caused due to multiple Fibre installation works;
- v. to promote lower cost of repair and maintenance of installed fibre infrastructure;
- vi. to minimize to the barest minimum the rate of fibre cable cut due to the road and other infrastructure work, theft, and sabotage.
- vii. to lower the cost of broadband internet services deployment;
- viii. to reduce the number and frequency of processing RoW licenses for broadband deployment;
- ix. to ensure the inclusion of ducts in building plans and road designs during all State and Federal Government-funded projects.
- x. to promote access to reliable broadband networks;
- xi. to promote synergy and collaboration among relevant private and public stakeholders so that they can jointly install infrastructures in a single phase and avoid unnecessary future digging, as well as encourage infrastructure sharing;
- xii. to promote the establishment and implementation of Dig-Once models that are suitable for Abia State;

- xiii. to promote the safety of citizens, reduce traffic; and congestion/disruption and preserve the quality of public infrastructure by avoiding multiple digging;
- xiv. to promote comprehensive planning and inclusion of all utilities/telecommunications infrastructure that require digging in the road and building construction works;
- xv. to promote a unified and affordable pricing regime across the federation for RoW permits;
- xvi. to promote and incentivise Private Partnerships in the deployment of public RoW;
- xvii. to make provision for stipulating the standards and modalities for implementing upgrades for all currently deployed infrastructure;
- xviii. to provide a comprehensive database of all utilities/telecommunications infrastructure in the state and to enhance the ability for faster deployment of new infrastructure to operators;
- xix. to make for easy availability of as-built documentation and hence provide further protection of common infrastructure; and
- xx. to ensure the protection of utility assets and fibre installations, in line with the Critical National Infrastructure Act.

5.0 Expected Outcomes

The expected outcomes of this Policy are as follows:

- (i) placement of ready-made ducts facility during construction works and avoidance of constant and unnecessary excavation for faster deployment of broadband internet services;
- (ii) enhanced collaboration among all relevant stakeholders, and ensure Abia State exploits the economic benefit of the implementation of this Policy in line with global best practices;
- (iii) improved service delivery in the telecommunication sector that will facilitate the country's competitiveness and wealth generation;
- (iv) enhance ease of doing business and thus broadband penetration in Abia State;
- (v) enhanced efficiency for telecommunication service providers and consequently improved the productivity of end users thus economic growth and enhanced infrastructure protection by security agencies.
- (vi) Protection of infrastructure from theft, sabotage, vandalization, or excavation during further construction work on the route.
- (vii) Encourage sector operation and investment players into the communication space in the Abia broadband penetration initiative program.

6.0 Focus Areas and Policy Objectives of the Focus Areas

To successfully accelerate broadband penetration by developing a mechanism for resource-sharing on RoW and other construction projects using the Dig-Once concept, there is a need to focus on key areas where the development of such capacity will have the greatest level of impact.

The following have been identified as such areas:

- 1. Right-of-Way licencing Regulation;
- Shared Infrastructure Management Database;
- 3. Standards and Specifications; and
- Access Strategies;

6.1 Right-of-Way Licensing Regulations

Overview

Infrastructure projects and development that involve public RoW, are built on federal or State assets or are subsidised with public funds, should include the installation of suitable empty conduit that can be made available to infrastructure development companies and for broadband service providers seekers.

Right-of-Way (RoW) Licensing Regulations govern the use of public spaces called utility corridors by private entities or individuals for various purposes, including construction, utilities installation, and telecommunications infrastructure deployment. These regulations help to ensure the efficient and equitable utilization of public infrastructure while fostering economic development and facilitating access to essential services.

Key components of RoW licensing regulations include the standardization of fees and requirements across different levels of government to streamline approval processes and prevent multiple charges for applicants. This promotes transparency and efficiency in obtaining RoW licenses, ultimately facilitating infrastructure development and investment.

Additionally, RoW regulations focus on ensuring affordable and accessible broadband services by implementing measures to regulate rates, terms, and conditions within the licensing framework. By incentivizing fair pricing and non-discriminatory access, these regulations aim to promote equitable access to broadband infrastructure, particularly in underserved or rural areas in the State. Moreover, they encourage the expansion of broadband

networks through incentives for providers to invest in infrastructure deployment and upgrades.

Objectives

The objectives of the **Right-of-Way Regulations** focus area include the following:

- i. to review the state and local government's RoW license fee and requirements to streamline approval for a uniform rate across federal, State, and Local Governments and prevent multiple charges across State and Local Government levels; and
- ii. to ensure broadband services are offered at appropriate and affordable rates, terms and conditions;
- iii. To incentivise and attract potential investors and market into the broadband virgin market of Abia state.

6.2 Shared Infrastructure Management

Overview

The Dig-Once Policy requires the transparent dissemination of information on the current state of resources available for sharing and opportunities to key into future projects.

The State Government can directly affect the cost, nature, and quality of broadband services, by making it easier for private companies to identify and lease broadband infrastructure.

It is essential to develop a State broadband infrastructure inventory database, to be domiciled with and regularly updated by the Ministry of Works, Abia State, which provides information on Fibre-optic cables and other shared resources attached to the state construction of buildings, railway tracks, roads, pipelines, energy distribution channels and other government projects where appropriate.

This creates a state repository of information on broadband infrastructure deployment in Abia State country which could provide the public with all appropriate current and accurate information and opportunities available.

Objectives

The objectives of the **Shared Infrastructure Management** focus area include the following:

 i. to make information on shared ducts available to government and other interested stakeholders;

- ii. to help the state and local governments in the implementation of similar asset inventory databases which should be linked to each other and to the federal asset databases;
- iii. to develop a uniform process of managing shared resources across buildings, railway tracks, roads, pipelines, energy distribution channels, and other government projects where appropriate;
- iv. to develop a dispute resolution mechanism for the quick, effective, and fair resolution of disputes on shared resources;
- v. to develop and create clear timelines and terms of access for all shared resources and other commercial opportunities;
- vi. to work with all stakeholders to establish technology best practices on how to include fibre-optic cables and ducts in construction plans; and
- vii. to develop a system to track planned, ongoing, and completed fibre duct deployment projects using an efficient asset management system.
- viii. to ensure the development of an open and transparent database to avoid duplication and potential anti-competitive behaviour;
- ix. to review the existing guidelines for laying the duct/cables to allow private investors to provide ducts and lease the same to telecommunications service providers at a reasonable fee;
- x. to provide clear procedures for duct sharing which will be incorporated in the guidelines to prevent multiple excavations/duplication of ducts along the State Roads' RoW and reduce the cost of deployment;
- xi. to provide compensation for operators where avoidable damage/disruption is caused to their Fibre cables;

- xii. to ensure the quality of information that will be provided by the broadband infrastructure inventory database such as the size of the duct, the occupancy of the duct, the attributes of the fibre cables in the duct (i.e., ownership, live status reports regarding capacity, damage, etc.); and
- xiii. to provide a framework for the creation of a one-call-notification system to facilitate the deployment of last-mile fibre cables while allowing private sector developers to inform the DOIC of development projects that are desirous of Fibre to the Home (FTTH) services.

the best possible result for all involved. If an excavation project has a long

6.3 Standards and Specifications

Overview

The challenge in developing a standard specification for Dig-Once projects is to integrate the requirements of known and unknown users and to provide sufficient capacity and capability at the cheapest rates possible.

It is imperative to provide uniform standards that provide sufficient capacity with segmentation capabilities, improved access and affordability, and robust, scalable, and functional architecture for effective penetration into every nook and cranny.

It is important to note that the above approach is designed to provide consistency and predictability in costs and deployment. Some users might prefer larger ducts for consistency with earlier deployments. Others may require a larger count and/or smaller ducts, flexibility is key to achieving the best possible result for all involved. If an excavation project has a long duration and sufficient budget, it is possible to customise a Dig-Once arrangement, potentially adding ducts or adding vaults at locations.

Objectives

The objectives of the **Standards and Specifications** focus area include the following:

i. to ensure ducts with sufficient capacity are considered for deployment. This requires that ducts with sufficient internal diameters are installed that can accommodate future users, and allow for segmentation to enable duct sharing or multiple cables added in the future;

- ii. to provide adequate segmentation of resources for commercial, security, and operational reasons;
- iii. to make the ducts easily accessible while maintaining required protection;
- iv. to recommend standards and specifications that will accommodate existing infrastructure and future changes;
- v. to provide standards for shared resources on all federal construction projects including buildings, railway tracks, roads, pipelines, energy distribution channels, and other government projects where appropriate;
- vi. to consider new technology and construction practices that would allow for the safe and efficient accommodation of broadband infrastructure in the public RoW;
- vii. to liaise with stakeholders in developing and continually improving standards and specifications;
- viii. to establish a duct-specification document that addresses capacity, separation of facilities, proper sizing, and placement;
- ix. to review specifications for the ducts to ensure durability by providing for the use of High-Density Polyethylene (HDPE) Corrugated Optic Ducts (COD), or similar material;
- x. to ensure that cable markers are installed to indicate the position of the cables to avert damage due to field activities; and

xi. to provide a clear strategy on the outcome of the audit of existing fibre cable deployment, the effect of the Policy on NCC's licensees such as Metro Fibre Cable Network Licensees/Infracos, and harmonisation with owners of existing deployments that may be unable or unwilling to meet new standards.

conduit placement opportunities. Fibre and/or conduits can be installed

the cost of building fibre after the an elopment is complete.

6.4 Access Strategies

Overview

To build or expand the fibre network infrastructure nationwide, Point of Present (POP) ducts can be placed during all capital improvement projects to dramatically lower the cost of network construction. The government can install a duct anytime a capital improvement project requires breaking ground in the public RoW.

The government can proactively intentionally plan for service availability and improvement to its residents and businesses by enacting laws that mandate or incentivise developers to build additional routes from the public RoW to a point in apartment and/or office buildings.

Areas undergoing new development, for example, offer significant fibre and conduit placement opportunities. Fibre and/or conduits can be installed as the roads are constructed, enabling the government to place fibre when needed at a very low cost relative to the cost of retrofitting those roads for fibre infrastructure. Using the Dig-Once concept, the State Government could lease fibre to private companies or deploy services by itself as needed. However, appropriate commercial licenses would be required. The incremental cost of the conduit during construction is negligible relative to the cost of building fibre after the development is complete.

Objectives

The objectives of the Access Strategies focus area include the following:

- i. to enable all providers to take advantage of Dig-Once opportunities through vigorous awareness campaigns and constant engagement with stakeholders;
- ii. to promote and encourage the deployment of shared utility conduit resources for broadband deployment in the State;
- iii. to promote and encourage the installation of in-building routes;
- iv. to publish data regarding available deployments of ducts and other related assets;
- v. to streamline RoW licensing procedure to ensure efficient and transparent processes and timelines; and
- vi. to provide recommendations on incentives for States or Local Governments that adopt Dig-Once Policies.
- vii. To protect the critical utility infrastructure from vandalization and sabotage.

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7.0 Special Purpose Vehicle

The **Special Purpose Vehicle (SPV)** will be charged with the execution of this Policy, through the development of strategies, standards, local content requirements, guidelines, and frameworks aimed at accelerating broadband penetration in the country.

To guarantee a coordinated effort in implementing the State Dig-Once Policy, representation is required from relevant government agencies responsible for federal lands, buildings, RoW, railways, waterways, highways, etc., and other federal assets that could be used for resource-sharing. The SPV will be professionally managed as a Government-owned Entity or through a PPP arrangement.

The main functions of SPV should include the following, where relevant:

- i. to support the development and implementation of guidelines for the state Dig-Once Policy;
- ii. to develop strategies to facilitate the speedy and efficient deployment of broadband infrastructure on state lands, buildings, public rights-of-way, state roads, pipelines, energy distribution channels, railway tracks, and other State assets in line with the Dig-Once Policy Models.
- iii. to develop standards that can accommodate changes in broadband technology and minimise excavations consistent with competitive broadband deployment across federal, State, and local governments.
- iv. to develop uniform legal contracts, applications, fees, and permit terms to facilitate private sector access to state assets for the deployment of broadband infrastructure;

- v. to develop Dig-Once implementation models for the construction of buildings, railway tracks, roads, pipelines, energy distribution channels, and other government projects where appropriate;
- vi. to ensure a consistent approach across the state Government assets, to streamline the method of broadband deployment, and create processes that would prevent multiple evaluations and permits;
- vii. to provide the public with current information on the policy, procedures, requirements, and opportunities available, and ensure consistent interpretation;
- viii. to develop requirements to be considered by the regulators in developing guidelines for the implementation of the Dig-Once Policy;
- ix. to provide comprehensive and current information on accessing State lands, buildings, public RoW, State roads, pipelines, energy distribution channels, railway tracks, and other state assets for the deployment of broadband infrastructure.
- x. to sensitise stakeholders on the importance and benefits of infrastructure sharing;
- xi. to develop, review, and constantly update technical and safety standards openly and transparently; and
- xii. to facilitate rebates for local councils that can actualise the policy without state funds.
- xiii. to put in place strategy, boundary, and scope of work of each stakeholder and publish quarterly reports;
- xiv. to put in place a mechanism for cooperation between the state and the Federal Government in adopting the Policy in different places;
- xv. to define the property rights and rights of use of the new ducts/conduits in the implementation of the policy;

xvi. to put in place measurable metrics for tracking the implementation level and stimulate review of the policy to align with realities; and to identify and work closely with other stakeholders outside the immediate telecoms sector.

8.0. Dig-Once Implementation Committee

There will be a **Dig-Once Implementation Committee (DOIC)** which will support and oversee the implementation and outcomes from the SPV. It will be chaired by the Deputy Governor of Abia State the Honourable Commissioner for Digital Economy and SME and the Honourable Commissioner for Science and Technology will appoint members of the Secretariat other Government appointees from the following MDAs are members - Ministry of Works, Ministry of Justice, Ministry of Power and Public Utilities, GM. Umuahia Capital Development Authority (UCDA), GM. Greater Aba Development Agency (GADA), Ministry of Lands and Housing. In addition, the DOIC will consist of representatives, one from each of the following government MDAs:

9.0 Key Stakeholders

- 1. The Deputy Governor
- 2. Ministry of Works
- 3. Ministry of Digital Economy and SMEs
- 4. Ministry of Science and Technology
- 5. Ministry of Justice
- 6. Ministry of Lands and Housing
- 7. Umuahia Capital Development Authority (UCDA)
- 8. Greater Aba Development Agency (GADA)
- 9. Ministry of Power and Public Utilities