National Fibre Protection Policy 2023

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1. Introduction and Background

The telecommunication industry in The Gambia has undergone various stages of transformation. The industry has experienced exponential growth over the last decades. Sustaining this growth hinges on efficient infrastructural deployment and management. Fibre optics technology has become the primary network infrastructure and a communication medium, which provides higher bandwidth capacity high speed for current and emerging technologies due to its robustness, capacity and durability. As the demand for new technology and services increases, fibre optics technology brings the promise of a flexible, scalability, full-service network platform with potentially unlimited capacity.

Conscious of the potentials of fibre, the Government of The Gambia with funding from the Islamic Development Bank (IsDB) implemented 918 kilometres National Fibre Backbone under the ECOWAN Project to replace the mutilated firer on the south bank of the country and implemented a new fiber cable on the north bank of the country with three rings to avoid disruption. The ECOWAN was complimented with over 400 kilometres of middle and last mile fibre infrastructure under the National Broadband Network project (NBN) funded by the EXIM Bank of China.

Although the government through the National Telecommunications Company, FCIP has invested significantly and strategically in fibre optic infrastructure, there has been an increase in the number of network outages due to fibre cable cuts caused mainly by Road Works Construction Companies. These fibre cable cuts causes significant communication network failures, communications disruptions impacts consumer satisfaction, national economy, revenue loss to service provider's, national security and poor service delivery. Furthermore, other stakeholder such as telecommunications/ICT service providers, corporate, academic, financial that use the fibre cable infrastructure to provide value added service to their customers are also affected.

2. Purpose

The objective of this policy is to provide the framework to be adopted by Fibre cable infrastructure providers, other Utility Companies and Road Works Construction Companies to ensure the security and protection of the Fibre cable infrastructure

This framework specifies the working protocols to be adopted by contractors, Fibre Cable Infrastructure Providers (FCIP) and individuals near fibre cable

infrastructure to minimise damage and disruption for the communications services carried on on these fibre cable infrastructures. It is for this fundamental principle of this protocol that all Roadwork Contractors must at all times consult the Fibre Cable Infrastructure Providers (FCIP) and exercise Due Care during roadworks to minimise damages on critical infrastructures such as FOC.

3. Obligation of the Fibre Cable Infrastructure Provider (FCIP) for aerial, underground and submarine cables.

Fibre Cable Infrastructure provider shall:

- Create an Infrastructure Group to focus on the continuous availability and security of this critical infrastructure
- Ensure a robust and secured fibre is installed in accordance with international standards.
- Continuously monitor the fibre cable and accessories such as manholes to ensure their security and protection
- Continuously monitor the fibre cable and protect them from exposure and damage
- Operate and maintain the power and technical equipment to ensure continuous operation
- Provide a GIS mapping of the FOC to the Authority under an non-disclosure agreement
- Provide an updated schematic map of fibre cable infrastructure routes to NRA prior to construction.
- Provide technical supervisors/staff be constantly present on site during road work construction
- Provide timely information to the NRA, Authority and key stakeholders of any technical disruption that may occur
- Provide identification marks along the route of the underground FOC

4. Obligation of the National Roads Authority (NRA)

NRA shall:

- Provide detailed roadworks construction plans to the Roads Reserve Committee
- Inform FCIP of their planned construction at least 10 working days prior to commencement of roadwork construction by contractors
- Request a schematic mapping of fibre cable infrastructure routes form the FCIP prior to road works construction.

- ensures that Roadwork contractors follow necessary safety procedures to protect fibre cable infrastructure from damage.
- Ensure the Roadworks contractor exercises Due Care / observe good engineering practice while working near the FOC telecommunications infrastructure.
- Provide Rights of Way authorisation to the FCIP where necessary and ensure Roadwork contractors work with fibre cable infrastructure provider to re-locate the critical concerned critical utility infrastructure
- Provide a Special telephone number dupped **'Dial Before You Dig'** for the Roadwork contractors and the public to call before digging any road.

5. Obligation of the Roadworks Contractors:

- The Roadworks Contractor shall:
- Provide detail drawings, work programs and timelines of their roadworks to NRA.
- Request form to be submitted by contractors prior to commencement of works except under emergencies that affects critical public services.
- Provide evidence of the presence of FCIP supervisors during the roadworks construction on a logbook.
- Immediately report to FCIP and NRA any damage to any critical utility infrastructure.
- Exercises Due Care / observe good engineering practice while working near the FOC telecommunications infrastructure.
- Follow necessary safety procedures to protect fibre cable infrastructure from damage.
- Not commence roadwork prior to receiving a Rights of Way from NRA
- Ensure that relocation of service is done prior to work commencement.

6. Offence

Any contractor that cannot provide evidence of adhering to the protocols in Section 5, and damages or cuts fibre cable infrastructure:

- Shall Pay a minimum fine of D500,000.00 for any damage and cost of repair to all concerned FCIPs and all other related costs as determined by the Authority.

The above minimum fine will be implemented in the regulations under the National Regulator (PURA).

7. Scope

This policy shall apply to any telecommunications licensee, FCIP as well as NRA, Roadwork contractors and other actors.

8. Definitions and Abbreviations

The terms hereunder in this Policy framework shall have the following meaning:

Special telephone number: This is the telephone number for “Dial Before You Dig”.

DBYD: Dial Before You Dig - a referral service for information on locating FOC underground utilities anywhere in Gambia

Carrier: A body licensed under the ICAct, 2009 as a general or mobile telecommunications carrier

Contractor: Any person or persons carrying out discovery, construction, installation, or maintenance activities

CER: Communications Equipment Room

Change outage: PTW that involves outages to customers services

Critical Infrastructure: refers to processes, systems, facilities, technologies, networks, assets and services essential to the health, safety, security or economic well-being of Gambians and the effective functioning of government. Critical infrastructure can be stand-alone or interconnected and interdependent within and across regions and national/international borders. Disruptions of critical infrastructure could result in catastrophic loss of life, adverse economic effects and significant harm to public confidence

Due Care: Appropriate care as required and Contract as well as pursuant to Criminal Statute; along with the requirements for good engineering practices as required by the Act and the Telecommunications Code of Practice. Due care needs to be observed when undertaking works in accordance with the processes set out in this document

Fibre Cable Infrastructure Provider: Any licenced service provider authorised to provide and install fibre cable infrastructure
Fibre Optic or Optic Fibre: The medium and the technology associated with the transmission of information as light pulses along a glass or plastic strand or fibre

FOC: Fibre Optic Cable, a telecommunication cable in which one or more fibre optic are used as the propagation medium to transmit large amounts of information at the speed of light

GLT: Ground Level Troughing (steel, plastic, or concrete)

HV: High Voltage signalling power cable

Handhole: A top opening hole with small size than manhole for pulling and splicing cables only

Incident Report: A report to be provided by the Contractor in the event of damage to the infrastructure detailing events leading up to and including the damage event, plus proposed mitigation to be put in place to prevent a recurrence of this type of event in the future

Industry Specialists: Are experienced design and construction companies capable of understanding protective and relocation works upon the live network without disruption to customer traffic, without asset depreciation of network plant with limited supervision

Infrastructure: Includes all National FOC optic cables, copper cables, pits, bollards, conduits, trunking, route markers, buildings, marker tape, termination boxes, electronic systems, antennas, and associated infrastructure used to provide the communications services

Infrastructure Relocation: A physical alteration to the configuration or alignment of an existing telecommunications cable or facility, with or without a cable cutover

Infrastructure Unit: This is the function within Telecoms Customer Operations that provides damage minimisation principles and information on the location of critical Infrastructure

Internal Plant: Racks, shelves, wall boxes and cabinets containing external cable termination equipment

ITU-T: International Telecommunication Union -Telecommunication Standardization Sector

Location Confirmed: Where the location of the cable or conduit has actually been confirmed by exposing it by Potholing

Location Nominal: Locations obtained by use of plans, verbal information, marker posts, trench lines, electronic devices, or lines between confirmed locations (not to be treated as confirmed location)

Manhole: Top opening large and deep hole where a man can get inside for installation, making connections or performing maintenance on underground and buried FOC and other services including sewers, telephone, electricity, storm drains and gas

MNO: Mobile Network Operator

Network Protection: Position within the telecoms Operations that is dedicated to network protection and maintenance activities

NMC: Network Management Centre is the area responsible for the integrity and operation of the telecoms licensee's network. It is staffed on a 24-hour 7day basis

MOCDE: Ministry of Communications and Digital Economy

NDD: Non-Destructive Digging (Water Lance and vacuum extraction technology) also known as Hydro Excavation Unit.

PTW Permit to Work: A request to the (PURA/committee) for permission to work on, or near, FOC telecommunications infrastructure

Permit: Shall refer to the document issued by the Regulatory Agency which authorizes the permit holder to carry out the activity specified under the conditions prescribed in these guidelines

Potholing: Is a non-destructive digging procedure which uses water lance and vacuum excavation techniques to expose a cable, conduit, or marker tape. This process is also known as "Exploratory Trenching". At all times while carrying out such activities, Due Care is to be exercised to avoid any damage to the infrastructure

Right of way: The right to pass through over someone's land and to have the reasonable use and enjoyment of their property as long as it is not inconsistent with the network provider's use and enjoyment of the land

PURA: The Public Utilities Regulatory Agency as defined by the PURA Act of 2001 establishing the Authority for the regulation of certain public utilities

SER: Signalling Equipment Room
Target Separation: Agreed minimum offset of 5 metres for which no Potholing precautions are required to protect the FOC infrastructure

Telecommunications Network Protection: A document that sets out the procedures to be followed during the carrying out of Works to ensure protection of national FOC assets

Works: For the purpose of this document, the carrying out of any investigative, construction or maintenance activities

9. Responsibilities

Specific and more responsibilities and accountabilities includes:

9.1. Obligations of the Contractors

- Any agreed relocation of FCIP's fibre Infrastructure shall only take place in accordance with set and agreed procedures in the document.

- The Contractor is required to assess and predict circumstances or problems affecting the safety and wellbeing of the FOC Infrastructure, and consult with the FCIP accordingly, before construction proceeds in that vicinity.

- The Contractor recognises that FCIP may at times require or deem it necessary to brief the Contractor's staff or its agents in relation to the infrastructure location and construction activity near the FOC Infrastructure. This may be done in the form of Network Protection Presentations, toolbox meetings, induction meetings, etc. This shall be undertaken at a time mutually agreed between FCIP and the Contractor.

- The Contractor shall consult with FCIP as soon as a design change is proposed that may affect FCIP Infrastructure. This is to minimize the risk of damage to FCIP FOC Infrastructure due to ad-hoc changes

10. Procedures

- The infrastructure location requirement needs to be ascertained by the Contractor well prior to excavating within the vicinity of the FOC Infrastructure. If any other infrastructure (conduit, cable) is damaged

during the location process, works shall cease, and the Infrastructure Manager is to be contacted. The Infrastructure Manager will ascertain what corrective measures are required at the Contractor's cost. Work cannot continue until advised by the Infrastructure Manager and an incident report supplied.

- Once FOC Infrastructure is located, the Contractor must ensure it is clearly marked and all necessary protective measures are to be implemented to ensure the integrity of the FOC Infrastructure during the Works.

- Upon completion of the Works, the Contractor must make good permanent reinstatement for the protection of FOC Infrastructure and stabilisation of the existing network alignment. This must include reinstatement of any marker tape, marker posts or bollards that were removed or damaged during the Works activity, or otherwise and the filling in of any potholes.

- Whether the Contractor is crossing under or over FCIP underground Infrastructure, a minimum of 100 cm vertical separation is required (unless a greater separation is required by a standard or code) between the underground Infrastructure and the Works unless alternative methods of protection are agreed between the FCIPs and the Contractor well in advance.

- If a Contractor is carrying out excavation works in the vicinity of the infrastructure, Due Care must be taken to avoid damaging these infrastructures. The FCIPs must also to be advised if the excavation works are within 5 metres of the infrastructure.

10.1. Infrastructure Relocation

- Relocation of existing Infrastructure, particularly FOC, with or without a cable cutover, is a last resort to resolving cable crossing or close proximity issues and will only be considered in those cases where it is not practical for the Construction works to avoid interference with the existing Infrastructure without relocation, and/or it is not feasible to use an alternative route.

- Relocation can only occur with the prior agreement of FCIP and the Authority.
- Should the FCIP and the Contractor agree that the best course of action is for FCIP Infrastructure to be relocated, then the following must be observed:
    i. All relocation work must be carried out so as not to cause any interruption to existing services.
    ii. Industry Specialists are required to perform such work, and all relocations must be managed by FCIP
    iii. Existing Infrastructure to be relocated must first be located and protected.
    iv. All costs associated with any relocation work are to be at the expense of the Contractor; no costs are to be borne by FCIP.
    v. Recovery of costs necessarily incurred for the relocation work will be based on a fixed price quotation.
    vi. Any upgrade during relocation shall be borne by FCIP
- Any relocation or modification works of FCIP's equipment (Distributed Antenna System, Radio Base Stations, Towers, etc.) or any works near such which are deemed to impact the performance and/or coverage of such systems shall require Pre-testing (Baseline), Post testing, and any applicable predictive analysis.

- Post relocation performance and/or coverage shall be required to conform to pre-relocation performance and/or coverage (from Baseline tests) or provisions of the relevant applicable standard (whichever is better between the two).

10.2. Damage to Existing FCIP's Infrastructure

- Nothing in the following should be taken to presume that damage might be permissible or acceptable, nor should it be read, that damage could be a reasonable outcome or expectation. It is incumbent upon the Contractor to ensure that damage does not occur.
- In those situations where FCIP Infrastructure suffers damage or suspected damage, because of the activities of the Contractor or its agents, the following procedures apply in all instances, irrespective of the apparent severity of the damage:

a. Notification, as soon as possible, to FCIP, NRA and the Authority and the following details given:
    i. PTW number
    ii. Location
    iii. Description and identity (if known) of the damaged Infrastructure.
    iv. Description of the extent of the damage; and
    v. Identity and contact details of the reporting party
b. The Contractor staff or their agents responsible for the damage are to:
    i. Immediately cease all activities covered in the relevant PTW.
    ii. Remain on site until a representative from the FCIP and the Authority arrives on site within six hours from the time of reporting; and

    If requested, provide assistance if required with the immediate repair of the damage.

- In addition, a written report must contain a description of the incident and the activities leading up to it. The report must also include a risk management / Mitigation strategy to ensure there are no further reoccurrences of this type to be sent theAuthority .
- Where either party provide inaccurate information that leads to an FOC infrastructure damage the party involved shall bear the cost
- The Authority in consultation with the client reserves the right to suspend the Works until the above requirements are met and is satisfied that the infrastructure will be suitably protected in future.
- Under no circumstances shall The Contractor staff or their agents repair damage unless specifically authorised by FCIP.
- The Contractor must take responsibility for ensuring that the site is safe and that no further damage occurs.
- The Contractor recognises it will be charged the costs necessarily incurred by the FCIP in carrying out repairs to the infrastructure

brought about by the damage as a result of the activities of the Contractor or its agents not exercising due care or acting in a negligent or criminal manner.

- This charge shall include, but is not limited to, supervision of temporary and final repairs, repairs to or replacement of cable, jointing chamber replacement, consequent acceptance testing of repaired Infrastructure or suspected damaged Infrastructure, re-establishment of services, business loss, and any consequential loss if repairs are not completed in a prescribed time period, etc as determined by the Authority
- It should be noted that unplanned outages in networks can have catastrophic effects on business and costs for outage such as lost revenue and third-party customer impacts, would also be recovered;
- Recovery of costs will be based on existing standard procedures presently in place with the Authority and
- The cost of repairs must be paid immediately or in not more than 10 working days.

10.3. Internal and Above Ground Telecommunications Assets

- Apart from underground assets, the FCIPs may have many assets in aboveground infrastructure (aerial) and internal situations such as cable terminations in racks in equipment rooms. The equipment rooms can be dedicated FCIP equipment rooms, shared station equipment rooms, or signal equipment rooms and external signal cabinets.
- Any planned works within 5 metres of these aboveground and internal assets will require a PTW to be provided and no works are to commence until it is reviewed and approved of the Authority. Depending on nature of works, predictive analysis, Pre and Post testing of services shall be required, the FCIP shall be consulted on requirement for advice.

10.4. Obligations by both the Contractor and the Fibre Cable Infrastructure Provider During Roadworks

- The Contractor shall apply to Dial Before You Dig (DBYD) to seek plans from all underground asset owners well in advance of any Works activity.
- As soon as a contractor became aware of presence of the FOC infrastructure during its Planning/Design Phase, the Contractor shall provide to the Steering Committee an Apply for a Permit to Work (PTW) request and detailed out each section of the Work's activities as follows;

    i. Advice of its intention to undertake discovery, construction, or maintenance Works in the vicinity of FOC Internal and External Infrastructure.
    ii. Detailed Works programs including timelines.
    iii. Works details, including scale drawings and method of carrying out the Works; and
    iv. Details of how the Contractor shall protect FOC assets and any other critical infrastructure on its works route from damage.

- Based upon network plans and information provided by the Infrastructure owner, the Contractor will:
    i. Identify any crossing points and close parallel working distances to the FOC network within agreed Target Separations and other potentially High-Risk situations.
    ii. Attempt to "design out" crossing points and areas inside agreed Target Separations.
    iii. Notify the FCIP where the Target Separations cannot be achieved and engage in consultation with the Telecommunication Operator to agree upon appropriate work methods which may include the requirement for the Telecommunication Operator's personnel to be in attendance.
    iv. Undertake associated hazard prediction and risks to Telecommunication Operator Infrastructure, such as ancillary machinery activity, vehicle movements, temporary fencing, buildings or storage compounds, star pickets, signs, likely soil ground differential settlement or disturbance because of proposed construction, and the like. The concerned Telecommunication Operator must be notified of such activities for advice and resolution as appropriate.

v. Prepare a Network Protection Plan that will set out the procedures to be followed during the carrying out of the Works to ensure satisfactory protection of FOC Infrastructure. This is also to include the protection of the alignment of underground conduits, not just visible assets. to be forwarded to the Telecommunication Operator for approval prior to the commencement of any works. Collaboration with the Telecommunication Operator's Technical Officer in charge of Infrastructure should take place to ensure all items are covered and the time frame is minimised.

- The Telecommunication Operator and the Contractor shall agree on work methods prior to the commencement of hazard work. After agreement has been reached on work methods, the Contractor shall give the Telecommunication Operator a minimum of 2 days advance notice in the urban area and 5 days advance notice in rural areas of its intention to commence those works.

- The Contractor shall locate (underground cabling), mark and protect the Telecommunication Operator's Infrastructure in accordance with set agreed procedures and based on the submitted documents by the Telecommunication Operator. No costs are to be borne by the Telecommunication Operator in this regard unless the submitted documents by the Telecommunication Operator are not accurate or mislead the contractor, in this case the Telecommunication Operator will bear the cost for that damage.

- The Telecommunication Operator agrees to provide the Contractor with its standard level of free plan provisioning and engineering advice services as set out in accordance with the FOC Infrastructure location procedure and policy. The Contractor will provide the necessary level of Industry Specialist support in the design and construction stages to ensure the observance of good engineering practice when working within the vicinity of the FOC Infrastructure. The Telecommunication Operator accepts that the Contractor may resource its Industry Specialist resources as it so chooses. This to be done to:

  i. Minimise the impact of the Contractor's requirements on the Telecommunication Operator's resources; and

ii. Ensure that the Contractor's construction program is adequately resourced in both the design and construction stages with the appropriate level of Industry Specialist servicing such that Telecommunication Operator's network is not placed at risk.

- Any agreed relocation of the Telecommunication Operator's Infrastructure shall only take place in accordance with set and agreed procedures in the document. No costs are to be borne by Telecommunication Operator in this regard and all works are to comply with the requirements of Installation and Maintenance Specification of the Telecommunication Operator.

- The Contractor will exercise Due Care and all agreed precautions taken when carrying out Works near FOC Infrastructure. Hence, the Contractor must call the Telecommunication Operator's Focal Point(s) to be on the ground any time a new stretch of trenching / excavation is to be carried out on a daily basis to minimise FOC damages and or cuts.

- The Contractor is required to assess and predict circumstances or problems affecting the safety and wellbeing of the FOC Infrastructure, and consult with the Telecommunication Operator accordingly, before construction proceeds in that vicinity.

- The Contractor recognises that the Telecommunication Operator may at times require or deem it necessary to brief the Contractor's staff or its agents in relation to the infrastructure location and construction activity near the FOC Infrastructure. This may be done in the form of Network Protection Presentations, toolbox meetings, induction meetings, etc. This shall be undertaken at a time mutually agreed between Gamtel and the Contractor.

- The Contractor shall consult with the Telecommunication Operator as soon as a design change is proposed that may affect the Telecommunication Operator's Infrastructure. This is to minimize the risk of damage to the FOC Infrastructure due to ad-hoc changes.

10.5. Locating the Telecommunication Operator's Underground Infrastructure

Infrastructure locations obtained by the use of plans, verbal information, marker posts, trench lines, electronic devices or lines between locations are Nominal Locations only and MUST NOT be treated as Confirmed Locations.

The actual location of the Telecommunication Operator's Infrastructure can only be confirmed by physical exposure of that Infrastructure. The Telecommunication Operator must be present at the time of roadworks to offer advice, or to coordinate activity near FOC Infrastructure.

The use of water lance and Hydro Excavation (Non-Destructive Digging NDD) is the preferred method of physical exposure of the Telecommunication Operator's Infrastructure.

Should this not be possible, then ***it is mandatory*** that the Contractor proposes an alternative method for approval to the FCIP prior to works being carried out.

It should be noted that, while the majority of FOC buried cables are in conduit, some cables may be directly buried.

When inside the required Target Separation distances, the Contractor is required to locate the FOC Infrastructure with sufficient certainty in consultation with the submitted location / mapping documents by the Telecommunication Operator to avoid damaging that Infrastructure.

The infrastructure location requirement needs to be ascertained by the Contractor well prior to excavating within the vicinity of the FOC Infrastructure. If any other infrastructure (conduit, cable) is damaged during the location process, works shall cease, and the Infrastructure Manager is to be contacted. The Infrastructure Manager will ascertain what corrective measures are required at the Contractor's cost. Work cannot continue until advised by the Infrastructure Manager and an incident report supplied to the Authority.

Once FOC Infrastructure is located, the Contractor must ensure it is clearly marked and all necessary protective measures are to be implemented in consultation with the Telecommunication Operator to ensure the integrity of the FOC Infrastructure during the Works.