

Ghana Telecom Fiber Optic Cable Laying



Overview

Brilliant Constech Brilliant Constech is an Engineering Service Company that supports the Telecommunications industry within Ghana with products and service.

Key Takeaways

Ghana's fibre optic network is rapidly expanding but faces significant challenges from frequent cable cuts, prompting calls for protective measures like the “dig once” policy.

Current State of Fibre Optic Infrastructure

Ghana has seen substantial growth in telecommunications infrastructure, with internet penetration rising from about 4% to over 70% in recent years, driving the expansion of fibre optic networks nationwide. Telecom operators, including MTN Ghana, AT Ghana, and Telecel Ghana, rely heavily on underground fibre networks, some inherited from the former Ghana Telecom infrastructure. This expansion has improved digital access but has also increased the exposure of fibre cables to damage.

Frequency and Causes of Fibre Cuts

The country experiences a high number of fibre optic cable cuts annually. In 2025, there were approximately 8,000 cuts, while between 2021 and 2025, a total of 33,878 fibre cuts were reported. Causes include: Road construction (20.

68%)Theft and vandalism (13. 98%)Private developer activity (13. 40%)Broken core and pole damage (23.



42% combined) Drain, fire, farming, floods, mining, and utility works (various smaller percentages), These incidents disrupt internet services, mobile money operations, and banking transactions, threatening the stability of Ghana's digital infrastructure.

Financial Impact

Repairing damaged fibre cables imposes a significant financial burden on telecom operators. The industry has spent over US\$69.3 million on repairs over the past five years, with individual repair costs ranging from US\$1,923 to US\$3,214.

Funds that could have been used for network expansion and service improvement are instead redirected to maintenance.

Policy and Mitigation Measures

To address these challenges, the Ghana Chamber of Telecommunications advocates for a “dig once” policy, which integrates fibre duct installation into major road construction projects. This approach aims to create protected underground pathways, reducing accidental damage and improving long-term network resilience. Additionally, the Chamber is preparing legal action against contractors responsible for fibre damage to enforce accountability.

Conclusion

While Ghana's fibre optic network continues to expand, frequent cable cuts from construction, vandalism, and other activities pose serious operational and financial challenges. Implementing protective measures like the “dig once” policy, improving coordination with developers, and enforcing accountability are critical steps to ensure network stability and support the country's digital transformation agenda.

Article Content

Brilliant Constech

Brilliant Constech is an Engineering Service Company that supports the Telecommunications industry within Ghana with products and services of the highest international standards partnering with

GDAP Project

The objective of the project is to assess the state of terrestrial fibre laid in Ghana and to subsequently develop national standards for terrestrial fibre deployment in Ghana.

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Cabinet approves Telecoms Chamber's proposal for fibre ...

Ghana's Cabinet has approved a transformative proposal from the Ghana Chamber of Telecommunications to integrate fibre-optic ducts and access chambers into all new road construction...

U-Ton Engineering – Your Telecom Consortium

U-Ton Engineering has about five years experience operating in the African telecommunications space and has engaged in an array of engineering activities mainly in Optical Fibre Networks; Micro-Ducts

Fiber optic deployment challenges and their management in a

Both technical and commercial considerations have mainly driven fiber optic deployment in Ghana. MNOs have adopted varied approach and strategies for deploying their fiber optics cable,

Survey on Fiber Optic Deployment for Telecommunications Operators

Overall, this paper offers valuable insights into fiber optic network deployment for telecommunications operators in Ghana and suggests strategies to meet the increasing demand for data and mobile

Minister highlights the need to protect Ghana's fibre optic ...

This document is aimed at guiding and harmonising the deployment of fibre optic infrastructure across Ghana. The document is an industry-developed manual which sets the

Nationwide Fiber Audit in Ghana | PDF | Fiber Optic Communication ...

The process involved for an MNO to acquire a license to lay fiber optics cable along the public street is difficult and can have direct consequences in the implementation timelines.

Fiber optic deployment challenges and their management in a

The challenges of frequent fiber cuts can be attributed to external factors such as dig-ups during road construction. Lack of regulatory guidelines and policies on fiber deployment and

(PDF) Fiber optic deployment challenges and their management in a ...

This research seeks to investigate the challenges in fiber cable deployment in Ghana, with emphasis on the technical, regulatory, managerial challenges and recommend the appropriate

GDAP Project

2.1 Inland Fiber Optic Deployment All the four MNOs (MTN, Glo, Vodafone, and AirtelTigo) licensed to provide telecom services in Ghana have deployed fiber optics cable either as a backbone

List of terrestrial fibre optic cable projects in Africa

This is a list of terrestrial fibre optic cable projects in Africa. While submarine communications cables are used to connect countries and continents to the Internet, terrestrial fibre optic cables are used to

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Frequent fiber cable cuts account for the majority of network outages in Ghana. Regulatory guidelines for fiber deployment are inadequate, hindering effective management. MNOs face significant

Fiber optic deployment challenges and their management in a

Additionally, the article aims at assessing the regulatory framework of fiber cable deployment, the MNOs lapses in managing fiber optic infrastructure in Ghana and to propose efficient techniques that can be

Infrastructure Licence (Nationwide Or Metro Fibre)

Infrastructure Licence (Nationwide Or Metro Fibre) Overview This Licence authorises Licensees to: Build, own, operate, and maintain a nationwide (or metro) terrestrial fibre optic cable network

Fiber Optic Deployment Challenges in Ghana: A Tutorial

Explore fiber optic deployment challenges in Ghana, including technical, regulatory, and managerial issues. Learn about solutions for efficient infrastructure management.

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