

# Functionality of Fiber Optic Sensors in Democratic Republic of Congo



## AI Overview

Fiber optic sensors in the DRC primarily support high-speed digital connectivity, infrastructure monitoring, and smart city applications, enabling broadband access, telemedicine, and educational services.

**Role in Telecommunications and Connectivity** Fiber optic sensors form the backbone of the DRC's digital infrastructure, enabling high-speed, high-capacity data transmission across long distances. Major projects, such as the 5,745 km fiber optic backbone supported by Facebook and Sofrecom, and the 1,200 km network by Bandwidth and Cloud Services (BCS) backed by the European Investment Bank, illustrate the deployment of fiber networks to connect schools, hospitals, and urban centers. These sensors detect signal loss, monitor network integrity, and ensure reliable broadband delivery, which is critical in a country where internet penetration remains below 24% and mobile broadband coverage is limited.

**Applications in Smart Cities and Urban Development** In cities like Mbanza-Ngungu, fiber optic sensors are integrated into metropolitan fiber rings to create resilient, scalable digital backbones. These sensors enable Dense Wavelength Division Multiplexing (DWDM) systems, allowing multiple data channels over a single fiber, and support operator interconnection, local internet exchange points, and innovative services such as telemedicine, online education, and smart urban management. By continuously monitoring network performance, fiber optic sensors help maintain service quality and detect faults in real time.

**Infrastructure Monitoring and Safety** Fiber optic sensors in the DRC also serve as structural and environmental monitoring tools. They can detect vibrations, temperature changes, and physical stress along the fiber routes, which is essential for maintaining the integrity of buried cables in regions with underdeveloped road infrastructure. This functionality ensur...

## Article Content

Best Smartphones 2026: Expert Rankings, Specs

Larger sensors capture more light, enabling cleaner images in low-light conditions and shallower depth-of-field for professional-looking portraits.

(PDF) Optical Fiber Sensors: Working Principle ...

Brief theory of sensing principle, fabrication method, applications, advantages and disadvantages of the different fiber-optic sensors, are addressed.

BANDWIDTH AND CLOUD SOLUTIONS

The project concerns the second phase of the construction of a fibre optic backbone in DRC (Democratic Republic of Congo), focusing on underserved areas of the eastern part of the

Optical Fiber Sensors: Working Principle, Applications, and Limitations

Abstract Fiber-optic technology emerged originally for applications in data transmission and telecommunications. However, sensors based on fiber-optics have been developed rapidly

Recent development of fiber-optic chemical sensors and biosensors ...

Furthermore, recent developments on fiber-optic chemical sensors and biosensors are summarized, analyzed and discussed. Finally, the strategies and guidelines to further promote the

Optical fiber in DRC: De Gaulle Fleurance advised Fiber Access

The project is a significant lever for economic growth and social progress for the country by offering the Congolese people a high-speed Internet connection at a lower cost.

Optical Fiber Sensors and Sensing Networks: Overview of the Main

Optical fiber sensors present several advantages in relation to other types of sensors. These advantages are essentially related to the optical fiber properties, i.e., small, lightweight,

DR Congo: Second phase of national fiber optic backbone completed

In the Democratic Republic of Congo, the cities of Kinshasa and Kasumbalesa are now connected via the fiber optic. This segment which is the second phase of the national fiber optic

Optical Fiber Backbones in DRC: A Strategic Project

Given the complexity of this deployment and the need to secure its timetable as well as its investments, Facebook called on Sofrecom to carry out the preliminary study for the construction of a 5,745km

Democratic Republic of Congo: EIB Global proceeds with support for

More than 2.5 million people living in the eastern regions of the Democratic Republic of the Congo (DRC) will benefit from faster, cheaper and more reliable digital connectivity thanks to new

## BANDWIDTH AND CLOUD SOLUTIONS

The project will lead to the deployment of around 1 400 km of new fibre optics networks in underserved regions in the Democratic Republic of the Congo, extending the access to mobile

Democratic Republic of Congo: EIB Global proceeds with support for

Today at the Kinshasa Economic Forum, the EIB and BCS signed a warrants agreement that will allow BCS to move forward with their plans to install a new fibre-optic backbone in the

The challenge of connectivity in the Democratic Republic of Congo ...

“Under the terms of the contract, Benya will cooperate with the Democratic Republic of Congo to fund, build and operate the fiber optic network in the Democratic Republic of the Congo,

Optical Fiber Backbones in DRC: A Strategic Project

In the Democratic Republic of the Congo, Facebook, supported by the government, is deploying fiber optic backbones. For the country, the implementation of fiber connectivity is a gas pedal of the

Fiber Optic Coverage and Internet Usage Statistics in Democratic ...

Overview of fiber optic infrastructure and internet usage statistics in the Democratic Republic of Congo for 2026, highlighting digital growth and connectivity.

DRC Explores River Corridor Project to Expand National Fiber Optic ...

The objective is to establish major connectivity corridors that would strengthen the country's future national network. According to the ministry, the project would use the Congo River

distributed optical fiber sensors Companies and Suppliers ...

Distributed Temperature Fiber Opt

Learn more about Congolese Fiber Optic Company (Societe Congolaise de Fibre Optique) (SOCOF)'s jobs, projects, latest news, contact information and geographical presence. SOCOF is a one-person ...

Liquid Technologies partners with Facebook to build optical fiber ...

Zimbabwean company Liquid Intelligent Technologies and Facebook announced today they are partnering to build an optical fiber network in the Democratic Republic of Congo. Through this

Fiber Optic Sensors: Short Review and Applications

An extensive review of optical fiber sensors and the most beneficial applications is presented in this chapter. Although electrical sensing technologies have been successfully deployed

SOCOF and APCSC to deploy fibre along new roads in the DRC

Congolese Fiber Optic Company (SOCOF SA) has reportedly signed a partnership with the Agency for the Coordination and Monitoring of Collaboration Agreements (APCSC) to deploy

Economic Impacts of Submarine Fiber Optic Cables and Broadband ...

This study explores the economic impact of the international data connectivity delivered by submarine fiber optic cables ("subsea cables") on the Democratic Republic of Congo (DRC).

Construction of fibre-optic cables in the Democratic Republic of Congo ...

Construction of a 10,000 km regional fiber-optic backbone across 5 countries with an impact on around 90 million Africans, directly connecting up to 3,000 schools, 1,500 hospitals, and 1,200 government

Benya DRC

As part of Benya Group efforts to lead digital transformation across Africa, Benya Group will deploy a fiber optic network in the Democratic Republic of Congo (DRC). This project will form the foundation

DR Congo: BCS gets warrant agreement for a 1,200-km fiber project

More than 75% of the DRC's population does not have access to mobile Internet services. The government, international partners, and private companies are working to bridge this digital

SOCOF and APCSC to deploy fibre along new roads in the DRC

In 2022, Paratus Group's DRC subsidiary Fast Congo was awarded a tender by SOCOF to deploy, operate and maintain a 620-km fibre optic link between Muanda on the west coast and the

DRC: SOCOF SA Signs Deal to Expand Fiber Optic Infrastructure ...

In March 2023, a 620 km fiber optic route between Kinshasa and Muanda was inaugurated to strengthen the national ICT infrastructure. The government is also working to operationalize a universal service

## Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://lwazipm.co.za>

Email: [info@lwazipm.co.za](mailto:info@lwazipm.co.za)

Phone: +27 82 415 6392

Address: 15 Oxford Street, Rosebank, Johannesburg, 2196, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

