

Western European railway construction lays fiber optic cable

Article Overview

Western European railways are increasingly integrating fiber optic cables along tracks to modernize telecommunications, enhance train control, and support infrastructure monitoring.

Purpose and Benefits

Fiber optic cables laid alongside railway tracks serve multiple purposes. They provide high-capacity telecommunications for train control systems, passenger information, and security technologies, replacing aging copper networks that struggle with modern data demands . Additionally, optical fibers enable distributed sensing for infrastructure monitoring, detecting vibrations and structural changes along tracks, which improves maintenance efficiency and safety . These fibers are immune to electromagnetic interference, corrosion-resistant, and require minimal maintenance, making them ideal for harsh railway environments .

Scale of Deployment

In the UK, Network Rail is upgrading over 16,000 kilometers of trackside fiber optic cable, highlighting the scale and complexity of such projects . Across Europe, fiber-to-the-home (FTTH) initiatives also demonstrate the broader expansion of fiber networks, with approximately 295 million homes passed and 160 million subscribers, reflecting the rapid growth of fiber infrastructure that often leverages railway corridors for deployment

Article Content

Dec 10, 2025

Fiber Deployment in Europe 2025: Progress & Challenges

Explore Europe's 2025 fiber deployment progress, challenges, and solutions for FTTH, FTTx,

May 15, 2026

Communication Infrastructure - EuropaCable

Unlimited, energy-efficient bandwidth through fibre Europe needs fibre - and with that Fibre

Mar 05, 2026

Neos Networks lays first fibre for Project Reach

Connectivity provider Neos Networks has announced the completion of the first fibre

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Overview of Fiber Optic Communications in Railway Transport:

An important characteristic of an optical communication line is the ability to transmit several wavelengths simultaneously along an

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A review of railway infrastructure monitoring using fiber optic sensors ...

This article reviews the current state-of-the-art of fiber optic sensing/monitoring technologies, including the basic

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European Project to Repurpose Fiber-Optic Cables Into Photonic

A Low-Cost Path to Scalable Infrastructure Monitoring The project's first field trial, underway in a major U.K. city, uses

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UK to bring more fiber and 5G to the railways

The multi-year agreement will see Neos deploy 621.37 miles (1,000 kilometers) of fiber optic cable across parts of

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First fibre laid under Project Reach UK digital backbone

High-count fibre laid along Great Western Main Line in four weeks, marking the first milestone in strengthening the

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Fiber-Optic Solutions for Railway Infrastructure

Fiber optic cables will be laid along the railway lines and new antenna sites will be installed for future railway radio

Jun 16, 2026

Network Rail invites £1bn private sector investment in telecoms

Network Rail is seeking private sector investment in its trackside fibre optic cable network in a deal that would enable

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How Fibre Optic Cables are improving Rail Safety

Read about the planned projects of both Network Rail and HS2 Ltd after announcing the use of fibre optic

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Fiber Optic Availability and Opportunity Analysis for North American ...

A FOAD system pulses laser light down a fiber optic cable buried near a railroad track and using Rayleigh backscatter, can detect

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Monitoring of Railway Deformations Distributed Fiber Optic Sensors

Finally, the feasibility is shown in two field experiments. In the first experiment, an existing railway track was equipped with the fiber

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270 billion EUR will have been invested in fiber rollout across Western ...

A grand total of 270 billion EUR will be invested in rolling out full fiber connectivity across Western Europe by 2030. This year will

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The Diverse Situation of FTTH in Europe

The Diverse Situation of FTTH in Europe FTTH deployment adoption in Europe has been on

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How Neos is Connecting the UK with Fibre Railway Corridors

Neos Network project is in partnership with AmcoGiffen and Network Rail and it has begun installing new 432-count

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Neos Networks begins 1,000km rail fibre rollout with first installation ...

The company has begun installing new 432-count fibre cables along the Great Western Main Line between London

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Fiber optic cable deployment along railroad

Denmark is currently implementing a large-scale infrastructure programme for the

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Investigation of Fiber Optic Cables Installation Conditions on the ...

Fiber-optic communication cables installed on high voltage transmission line structures are subject to high electric

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DB to Use New Fibre-Optic Cables That Don't Require Cable Troughs

Deutsche Bahn (DB) and partners have developed new fibre-optic cables that are resistant to many kinds of external

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Fibre Optic Railway Stations | Deutsche Bahn Infrastructure

Modular fibre optic systems for Deutsche Bahn stations: E2000 connectors, 96-fibre splice modules, ETCS networks,

Feb 15, 2026

European cable operators are moving to fiber: how and why

In several of my previous BTR columns, I focused on how and why North and South American cable operators are moving to fiber. I

May 19, 2026

Project Reach: The UK's biggest new core fibre network

The new network will serve the dual purpose of enhancing railway operations while also

Aug 20, 2025

Neos Networks lays first Project Reach fibre on UK rail

In partnership with AmcoGiffen and Network Rail, Neos has started to install new 432-count

Dec 18, 2025

Developments in fibre optic telecoms cable

The development and introduction of fibre ribbon cables with huge fibre counts now means dedicated fibres can be

May 04, 2026

Fiber Optic Solutions for Railway Infrastructure

Passengers will be able to take advantage of seamless high-speed mobile connections in the future. Fiber optic

Mar 13, 2026

UK to bring more fiber and 5G to the railways

Neos Networks and Freshwave have signed a deal with Network Rail that is intended to end

Dec 18, 2025

Submarine communications cable

7 – Petroleum jelly 8 – Optical fibers Submarine cables are laid using special cable layer ships, such as the modern René Descartes

Dec 26, 2025

Rail and Mass Transit

The railway industry is on the cusp of a digital revolution. Our fibre optic technology, spearheaded by

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On-Train Fiber Optic Connectivity | Connector Supplier

The railway industry still hesitates to make systematic use of fiber optic technology on board

Contact Us

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