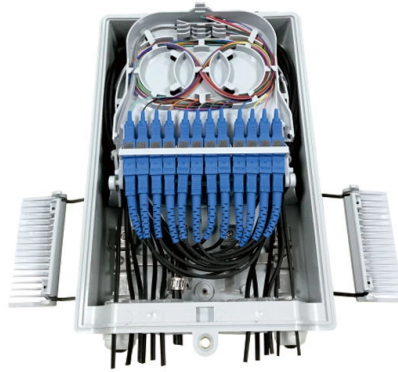


# Japan's Optical Cable Laying System



## AI Overview

Japan operates a sophisticated optical cable network combining domestic and international submarine cables, advanced fiber technologies, and specialized cable-laying vessels to ensure high-capacity, resilient connectivity. Key Submarine Cable Projects

**SJC2 (Southeast Asia-Japan Cable 2)** is a major high-capacity optical submarine cable connecting Japan with Singapore, Hong Kong, and other Asia-Pacific regions. Constructed by NEC, it spans approximately 10,500 kilometers and uses optical wavelength division multiplexing (WDM) technology, capable of transmitting over 126 terabits per second (Tbps). SJC2 enhances network redundancy, route diversity, and ultra-low latency for AI, cloud computing, and real-time data exchange across Asia.

**JAKO (Japan-Korea Submarine Cable System)** links Fukuoka, Japan, with Busan, Korea, covering about 260 kilometers. This project involves a consortium including AWS, Microsoft, Arteria Networks, and Dreamline, with LS Cable & System handling EPC responsibilities and LS Marine Solutions constructing the undersea cable. Scheduled for completion by 2027, JAKO strengthens digital connectivity between Japan and Korea, forming part of a high-speed Northeast Asia corridor.

**Domestic Island Connections** in Okinawa, such as cables linking Okinawa Main and Ishigaki Islands, and Miyako and Kume Islands, span approximately 720 kilometers. These systems, built by NEC, employ the latest WDM technology with capacities exceeding 60 Tbps, supporting 5G expansion and regional data demands.

**Technological Advancements** Japan is advancing optical cable technology with multicore fibers, which allow multiple optical transmission paths within a single fiber, increasing capacity without enlarging the fiber diameter. NEC and NTT have successfully tested 12-core multicore fibers over 7,280 km, demonstrating potential for next-generation long-haul submarine cables. These innovations address crosstalk challenges and enhance large-capacity network performance.

**Cable-Laying Infrastru...**

## Article Content

Route Design/Cable Laying Technologies for Optical The geotechnical ...

1. Introduction A submarine communication cable with a large-capacity communication capability is an essential infrastructure component for communication between two countries or areas. To construct

SJC2 optical submarine cable in operation: Press Releases | NEC

The SJC2 consortium announced today with NEC Corporation (NEC; TSE: 6701) the completion of construction and the start of operations for the Southeast Asia-Japan Cable 2 (SJC2),

Automated Cable-Laying System for Thin Optical-Fiber Submarine Cable ...

In this paper, we present an automated cable-laying system that can automatically pay out the optical-fiber submarine cable on the seafloor at a rate that keeps pace with the ground speed and also

NEC completes optical submarine cable construction in

On July 13, NEC announced that it had completed the construction of two sections of optical submarine cable connecting the Okinawa Main and

The Strategic Future of Subsea Cables: Japan Case Study

Japan is home to at least 20 international submarine cable landing stations that connect to the United States, Australia, South Korea, Southeast Asia, Russia, and the Mediterranean. These

SJC2 optical submarine cable in operation

Tokyo, Japan, 18 July, 2025 – The SJC2 consortium (\*1) announced today with NEC Corporation (NEC; TSE: 6701) the completion of construction and the start of operations for the Southeast Asia-Japan

NEC signs long-term charter contract for optical

NEC has been a leading global vendor in the submarine cable system business for over 50 years, manufacturing submarine cables, submarine

Fibre-optic Link Around the Globe

Fibre-optic Link Around the Globe (FLAG) is a 28,000-kilometre-long (17,398 mi; 15,119 nmi) fibre optic mostly- submarine communications cable that connects

Technology Introduction

Optical Submarine Cable Laying Method KCS is realizing the construction of cable laying with high quality and high reliability by performing the followings:

Progress toward increasing capacity of transoceanic

To meet such increased communication demand, transmission capacities using optical submarine cable systems must be increased in addition

Submarine Cable Systems: Products & Solutions | NEC

The Candle is an 8,000 km submarine cable system connecting Japan, Taiwan, the Philippines, Indonesia, Malaysia, and Singapore. This cable system will be one

The Strategic Future of Subsea Cables

cable system between Japan and Canada, consisting of 16 fiber pairs that give it a total capacity of 240 Terabits per second, was developed by Google and supplied by NEC.

Katimex Cable Laying & Cable Routing Equipment

Welcome to KATIMEX! Here you will find exclusive cable laying technology products for building, fiber optic and energy cable laying.

AWS and Microsoft Lead to Build New Japan-Korea Submarine Cable System

The JAKO submarine cable project involves a consortium comprising global technology giants Amazon Web Services (AWS) and Microsoft (MS), Korean operator Dreamline as the landing

NEC completes optical submarine cable construction in

NEC completed construction in 2019 with Okinawa Cellular under a contract to supply an optical submarine cable connecting Okinawa and

Peer-Reviewed Technical Communication Automated Cable-Laying System

An automated cable-laying system that can automatically pay out the optical-fiber submarine cable on the seafloor at a rate that keeps pace with the ground speed and also adjusts the cable tautness is

Progress toward increasing capacity of transoceanic

Combining these developed technologies, both companies conducted a long-distance transmission experiment over 7,280 kilometers,

Japan: New Lord of the Subsea?

As threats to the global web of subsea fiber-optic cables become more prominent, Japan has an opportunity to become a leader in submarine

The Strategic Future of Subsea Cables: Japan Case

Japan, an island nation dependent on subsea cables and a nexus for Asia-North America communications, faces many risks amid regulatory slog and

Fibre optics to connect Japan to the UK – via the Arctic

Yet there are advantages to laying cables in the Arctic, says Denis Tsesarenko, a director of the Polarnet Project, which is building the Russian

ROV-Based Automated Cable-Laying System: Application to DONET2 ...

We developed an automated cable-laying system operated through a remotely operated vehicle (ROV). This system can automatically install a thin optical-fiber submarine cable at a rate that

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