

September 18, 2026

NTT, Inc.
Cailabs

Direct Optical Connection Between Space and Ground Networks

NTT and Cailabs Launch Collaboration to Develop Next-Gen Optical Ground Stations



NTT, Inc. (hereinafter “NTT”) signed a Memorandum of Understanding (MoU) on September 17, 2026, with Cailabs (hereinafter “Cailabs”), a France-based company that designs and manufactures advanced photonics products, to explore strategic collaboration in the field of space-to-ground optical communications.

The collaboration aims to advance direct optical connectivity between satellite networks and terrestrial data infrastructure. It will examine the integration of NTT’s digital coherent^{*1} and network control technology^{*2} into Cailabs’ optical ground stations (OGS), as well as the connection of selected optical ground stations to nearby NTT data centers through NTT’s All-Photonics Network^{*3}, or APN.

This initiative applies the IOWN technology promoted by NTT to the space business sector and represents a new step toward realizing the IOWN vision^{*4}.

1. Background and Objectives

In recent years, with the expansion of satellite constellations and the increase in demand for data communications, the importance of high-capacity, low-latency communication

infrastructure between satellites and the ground has grown. To achieve this, the utilization of optical communication technology is expected to complement conventional wireless communication.

Under its next-generation information and communications infrastructure initiative, “IOWN (Innovative Optical and Wireless Network),” NTT has been advancing research and development of optical communication and signal processing technologies in the terrestrial network sector.

Cailabs, based in France and the United States, designs and manufactures optical ground stations for high-capacity satellite-to-ground communications. Its optical ground stations combine advanced optical technologies with systems designed for deployment and operation in real-world conditions.

Under the MoU, NTT and Cailabs will explore how their respective technologies and capabilities can contribute to an integrated communication network connecting satellite systems, optical ground stations, terrestrial optical networks and data centers.

2. Scope of the collaboration

Under the collaboration, NTT and Cailabs will explore the integration of NTT’s digital coherent and network control technologies into Cailabs’ optical ground stations. The companies will assess a phased technical approach, beginning with demonstrations and initial communication capabilities and potentially evolving toward higher-capacity coherent optical communications.

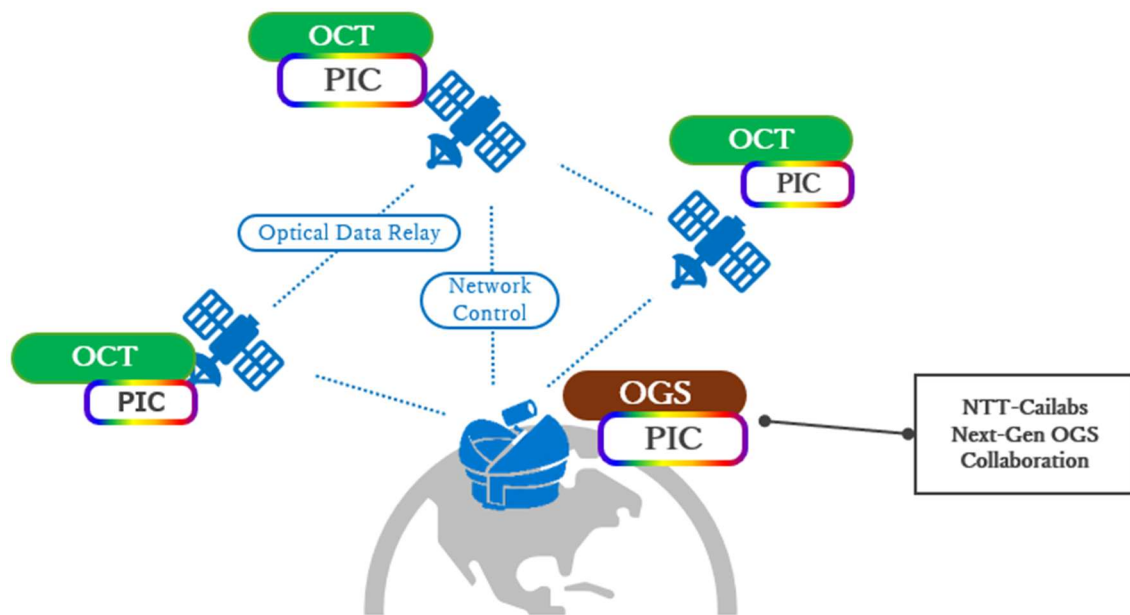
NTT and Cailabs will further explore the connection of selected optical ground stations to nearby NTT data centers through the All-Photonics Network, as well as the development of orchestration capabilities coordinating ground stations and terrestrial network resources. This work will contribute to defining an end-to-end architecture connecting satellites, optical ground infrastructure and terrestrial data networks.

3. Future Developments

NTT and Cailabs will evaluate a phased approach to developing optical communication infrastructure integrating space and terrestrial networks. NTT believes the collaboration could extend to a broader network of optical ground stations connected to NTT data centers, combining satellite-to-ground communications, terrestrial optical networking and coordinated network control to support future commercial services and new opportunities under NTT’s space business brand, “NTT C89” ^{*5}.

<Reference> Concept for the Early Commercialization of New Business Areas to Achieve Sustainable Profit Growth from FY2030 Onward (Excerpt from FY2025 Financial Results Presentation Materials)

Space



4. Endorsement

“This partnership with Cailabs marks a significant milestone in applying NTT’s IOWN technology to the space sector. Building on the technology cultivated through NTT’s research and development and Cailabs’ proven capability in the steady deployment of optical ground stations, we will accelerate the global expansion of optical communication infrastructure in the space sector and open up new growth opportunities.”

Senior Vice President, Head of Alliance Division, Research and Development Marketing Headquarters, NTT, Inc.

Minako Tsumenaga

“Connecting optical ground stations directly to terrestrial optical networks is a critical step toward making satellite optical communications operational at scale. By combining NTT’s expertise in advanced optical networking with Cailabs’ experience in designing, manufacturing and deploying optical ground stations, this collaboration will explore an end-to-end architecture connecting satellites, ground infrastructure and data centers. Our shared objective is to help turn high-capacity optical communications into scalable

infrastructure for future satellite services.”

CEO, Cailabs

Jean-François Morizur

■ About NTT

NTT is a leading global technology innovator, providing a broad range of services to both consumers and businesses. As a mobile operator and provider of infrastructure, networks, and services, NTT is dedicated to promoting a sustainable future through cutting-edge innovations. Our portfolio includes business consulting, AI-powered solutions, application services, global networks, cybersecurity, data center and edge computing, all supported by our deep global industry expertise. Generating over \$90 billion in revenue and employing 340,000 professionals, we allocate 30% of our annual profits to fundamental research and development. With operations spanning more than 70 countries and regions, our clients include over 75% of Fortune Global 100 companies, alongside thousands of enterprises, government organizations, and millions of consumers.

URL : <https://group.ntt/en/>

■ About Cailabs

Cailabs is an industrial laser communications company building the ground systems that make optical links deployable at scale. Founded in 2013, with operations in France and the United States, Cailabs designs, manufactures and deploys optical systems for space-to-ground and ground-to-ground links. Its solutions combine atmospheric turbulence mitigation, industrial production capacity and operational support for space, defense and critical networks.

URL : <https://www.cailabs.com>

[Glossary, etc.]

*1 Digital Coherent Technology

A cutting-edge communication technology that utilizes not only the “brightness (flashing)” of light but also the “timing of peaks and troughs” and the “direction of oscillation”—information carried by light waves.

*2 Network Control Technology

A technology that automatically bypasses optical ground stations rendered inoperable by weather conditions and coordinates multiple ground stations with the APN to achieve highly reliable communication

*3 APN

The All-Photonics Network (APN) is one of the key technological fields comprising

IOWN. It aims to achieve overwhelmingly low power consumption, high-speed, high-capacity, and low-latency transmission through a wavelength network that introduces photonics (optical)-based technology across the entire system—from terminals to the network—and provides end-to-end optical wavelength paths.

^{*4} IOWN Initiative (IOWN: Innovative Optical and Wireless Network)

This is a concept for a communication infrastructure—including terminals—that utilizes innovative technologies centered on optical communications to provide high-speed, high-capacity communications and vast computational resources that transcend the limitations of existing infrastructure. The goal is to create a prosperous society that embraces diversity by optimizing the relationship between the individual and the collective based on all available information.

^{※5} “NTT C89” is a trademark of NTT Inc.

It is an abbreviation for the “NTT CONSTELLATION 89 PROJECT,” an initiative aimed at contributing to the expansion of space-related businesses and the development of the space industry as a whole by providing solutions to society.

This press release is part of the initiatives under “NTT C89,” the brand for space-related businesses operated by NTT Group companies and others.

URL: <https://group.ntt.jp/aerospace>



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