KAIROS Delivers Content to Multiple Broadcasters Connected to Expo via IOWN APN

NTT Business Solutions Corporation
NTT SmartConnect Corporation

Installation: March 2025
Location: Kansai region, Japan

The Challenge

Find the ideal IP switcher to use the "IOWN" APN for remote production at a major expo.

The Solution

KAIROS was selected for a proof-of-concept trial due to its compatibility with diverse IP protocols and robust features for remote production.

"We believe the time is coming when this new style of remote production will be a viable option to replace OB vans in many cases."

Mr. Shoichi Hirata
Value Design Department
NTT Business Solutions Corporation

Note: Job title at time of implementation.

Background

Revolutionizing Broadcast Production with All-Photonics Network

Traditional event broadcasting relies heavily on OB vans packed with equipment—an approach that requires significant manpower, setup time and budget. In response, the industry is moving toward more efficient production models. According to Mr. Shoichi Hirata of NTT Business Solutions, "[Japanese telecom NTT's] 'IOWN' all-photonics network (APN) delivers ultra-high-speed, high-capacity and ultra-low-latency communication with exceptional stability beyond the limits of conventional leased lines or NTT's 'FLET'S' IPv4/IPv6 service. When we thought about ways to best apply our network, at the top of our list was remote production for the broadcasting industry, because it involves huge volumes of data and requires precise time synchronization. So we decided to launch a proof-of-concept trial at the Osaka-Kansai Expo to evaluate the IOWN APN's potential to contribute to broadcasting."

Benefits

A Remote Production System that Broadcasters Can Share

The IOWN APN was used to build a remote production environment in which multiple broadcasters could use shared infrastructure. At the heart of this system, KAIROS was used for the IP switcher. Mr. Hirata explained: "Video and audio from the expo site were sent via IOWN to the Kairos Core for consolidation at a data center, and then transmitted via IOWN to each broadcaster for their respective operations. This demanded an IP switcher that was highly stable and fully equipped for remote production. When we talked with the broadcasters about this idea, the name KAIROS kept coming up, so it emerged as our choice."

Co-creating a Smart World Through Advanced ICT

NTT SmartConnect harnesses cutting-edge technologies to deliver robust platform services, transforming information into value and thereby contributing to a more intelligent and connected way of life for all.

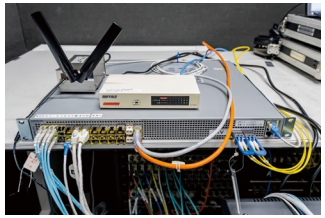
▲ Data center that hosted the Kairos Core 200 mainframe

Broadcast & Communications

Advanced Remote Production Achieved with IT/IP Platform KAIROS and IOWN APN

▲ Kairos Core (center rack) directly connected to the IOWN APN at the data center

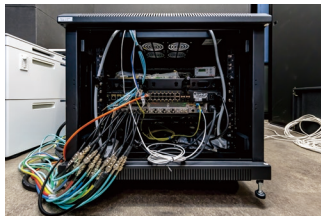
▲ Kairos Control and Kairos Creator used on rotation by broadcasters in Osaka



▲ Network equipment linked to the IOWN APN

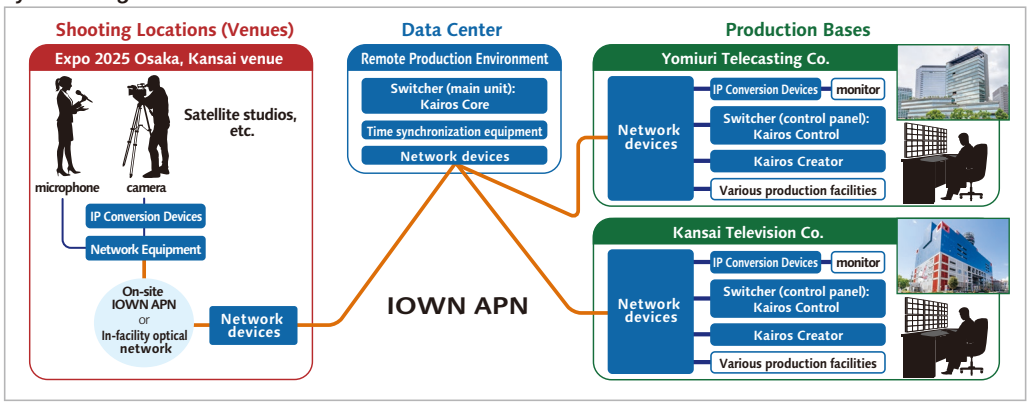
▲ Kairos Control panel at Kansai Television Co. used for remote production

▲ Kairos Control panel used by Yomiuri Telecasting Co.



▲ SDI-to-IP converter (lower rack), integrated with network devices

System Diagram



Installed equipment

- Main Frame Kairos Core 200 **AT-KC200** x 1
- Control Panel Kairos Control **AT-KC10C1** x 1
- Kairos Creator **AT-SFC10**

Post-Installation Benefits

Unmatched Reliability and Seamless Sharing During the Expo

As the core IP switcher at the expo, KAIROS performed exceptionally stably without a single failure. Operating within a multi-broadcaster environment, its IP compatibility and architectural excellence were on full display. According to Mr. Tanaka of NTT SmartConnect: "From the moment KAIROS was deployed, not one broadcaster reported a system crash. KAIROS never rebooted unexpectedly or demonstrated any instability. It was incredibly reliable." His colleague Mr. Seikoba added: "We handled the system integration and each broadcaster managed their own operations independently. Since KAIROS can be used via multiple PCs without concerns about licensing, broadcasters as well as NTT could use their own PCs for separate control. It was easy to use KAIROS even though multiple players were involved in remote production."

In the Customer's Own Words

Promoting the Media Hub Concept Utilizing IOWN APN

"Looking to the future, our concept envisions a media hub powered by the IOWN APN. Like our recent verification trial, the idea is to place core systems, such as the KAIROS mainframe, in a data center and equipment, such as a KAIROS Control panel, at each broadcast station. Using this model, full-scale production will be possible with minimum on-site equipment. The recent trial confirmed that KAIROS supports multiple codecs and provides all the essential features required for remote production. As more broadcasters transition to IP-based infrastructure, we believe KAIROS has the potential to serve as a viable alternative to traditional OB vans."

Mr. Shoichi Hirata (right)
Value Design Department
NTT Business Solutions Corporation

Mr. Dai Seikoba (center)
Mr. Katsuya Tanaka (left)
Manager
Streaming Business Department
NTT SmartConnect Corporation

IOWN APN and KAIROS Achieve Exceptional Stability

"As of September 12, 2025, two full-scale remote productions from the expo had been delivered via the IOWN APN: a program introducing the expo and a live stream of a gala fireworks show at the expo venue. The first production converted SDI signals from four cameras to IP, and the second one adopted a fully IP-based workflow using uncompressed ST 2110 video. Throughout both projects, the IOWN APN enabled jitter-free transmission with seamless PTP synchronization, while KAIROS delivered reliable, uninterrupted audio and video. Furthermore, KAIROS simplifies regional customization, such as the ability to insert localized graphics into regional broadcasts while omitting them from nationwide feeds. As streaming and other secondary uses increase, this level of flexibility is expected to significantly reduce postproduction workloads. The verification trial at the Osaka-Kansai Expo was a compelling proof of concept, reaffirming the practicality of shifting from SDI to scalable IP-based production environments."

Mr. Kazutaka Okita (left)
Chief Expert, Engineering Division

Mr. Tadashige Noguchi (center)
Engineering Division

Mr. Yuya Furukado (right)
Engineering Division
Yomiuri Telecasting Corporation

Intuitive Visual Design Unlocks Creative Freedom — How KAIROS Is Transforming Remote Production

"An extended music program named Brass Band of Radiant Life was streamed using a remote production setup that integrated the IOWN APN and KAIROS. Featuring eight cameras and a virtual background, it marked the first full-scale remote production using this model. This undertaking was a significant opportunity to demonstrate the robust performance and seamless operation of KAIROS as a next-generation IP-based switcher backed by the IOWN APN's stable transmission capabilities. A key advantage was the ability for multiple users to operate multiple Kairos Creators concurrently. Each team—whether handling switching or visual effects—could work independently and then seamlessly integrate their components. This modular workflow was unlike anything we'd experienced before. The user interface seemed a bit complex at first glance, but its underlying design philosophy quickly became clear and operations became intuitive. The greatest value of KAIROS is that it allows visuals to be designed as intended, which empowers operators to design exactly what they envision."

Mr. Takeshi Ishida (left)
Managing Director

Mr. Shuichi Nakayama (right)
Director CAM
Production Technology Center
Production Technology Department
Kansai Television Co., Ltd.

Panasonic CONNECT

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https://pro-av.panasonic.net/en/

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