

Kiloview Powers the 71st Macau Grand Prix with NDI AV-over-IP Solution

Kiloview

03/03/2025(<https://www.kiloview.com/en/2025/03/03/>)

The Macau Grand Prix, one of the world's most prestigious motorsport events, returned in 2024 with a thrilling showcase of Formula 3, GT, and touring car races. This year, the iconic Guia Circuit underwent a transformative AV upgrade, thanks to Kiloview's state-of-the-art NDI AV-over-IP solution. Collaborating closely with the Macau SAR Government Sports Bureau, the Macau Grand Prix Organizing Committee, and the Automobile General Association Macau-China (AAMC), Kiloview delivered a future-proof, broadcast-grade system that redefined the event's video infrastructure.

The upgrade addressed critical challenges posed by the circuit's aging AV systems, ensuring seamless signal transmission, enhanced scalability, and unparalleled reliability for live broadcasting, refereeing, and post-production. Here's how Kiloview's NDI technology drove the success of the 71st Macau Grand Prix.



PART 1: Overcoming the Challenges of a World-Class Event

The Macau Grand Prix is a high-stakes event, demanding flawless video coverage across its 6.2-kilometer Guia Circuit. With its narrow roads, sharp turns, and high-speed straights, the circuit presented unique challenges for AV infrastructure:

1. Dense Camera Coverage and Multiple Signal Sources

Over 50 cameras were strategically positioned to capture every critical moment, from high-speed overtakes to collision-prone zones. Additionally, NDI PTZ cameras were deployed for enhanced monitoring, bringing the total to more than 60 HD and 4K signals requiring efficient transmission and distribution.

2. Complex Signal Management for Multi-Scenario Coordination

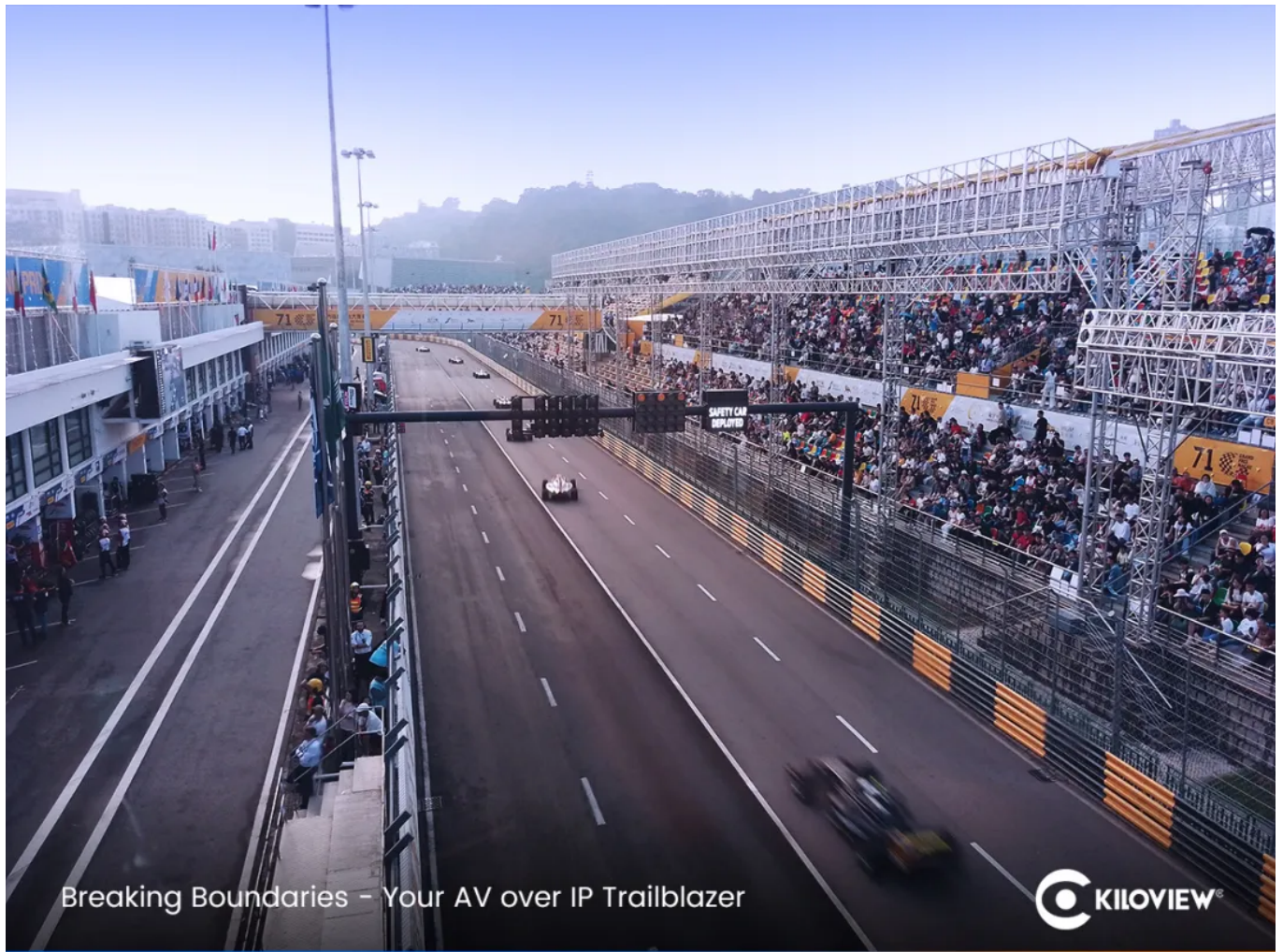
The event required real-time video distribution to multiple operational hubs, including the control center, announcers' room, judges' office, commentators' room, live broadcast room, and security room. Ensuring synchronized, high-quality feeds across these locations was paramount.

3. Uncompromising Security and Stability

As a globally televised event, the Macau Grand Prix demanded broadcast-grade reliability. The system had to deliver seamless video transmission, secure storage, and uninterrupted operation over several days.

4. Modernizing an Aging Venue

The circuit's legacy baseband video system, reliant on extensive cabling and complex setups, was no longer viable. Kiloview's IP-based solution provided the flexibility, scalability, and cost-effectiveness needed to future-proof the venue.



PART 2: Kiloview's NDI AV-over-IP Solution – A Game-Changer for Live Events

Kiloview's NDI-based system addressed these challenges head-on, delivering a robust, scalable, and future-ready infrastructure.

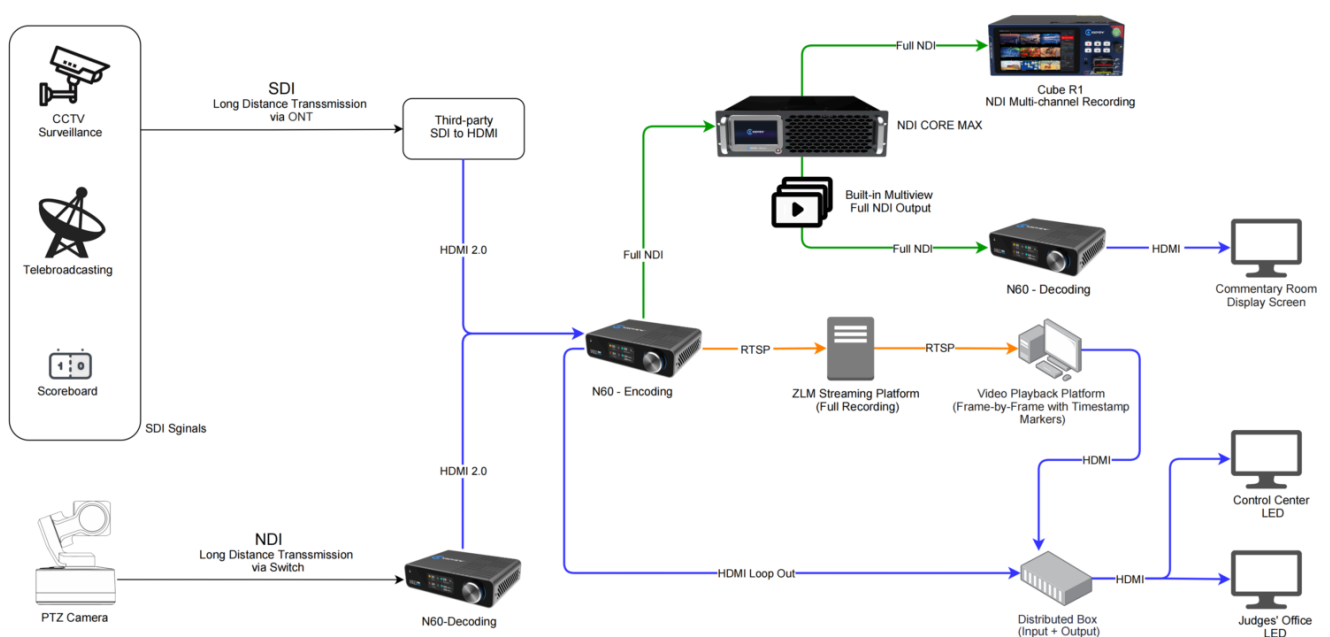
NDI 6.1

The next step in IP connectivity.

[Learn more](#)

“NDI (Network Device Interface) is a leading IP-based technology renowned for its high-quality video, low latency, and cost efficiency. With typical bandwidths of 130Mbps for HD and 250Mbps for 4K, NDI ensures visually lossless image quality with latency as low as tens of milliseconds. Its multi-channel transmission capability allows a single 40G optical fiber to carry over 200 HD or 100+ 4K signals, drastically reducing cabling complexity and costs.

Kiloview's solution leveraged the full potential of the NDI ecosystem, ensuring seamless integration with existing systems and delivering a comprehensive, end-to-end workflow.”



Topology of Kiloview's NDI Solution for Macau Grand Prix 2024

Core Components of Kiloview's Solution

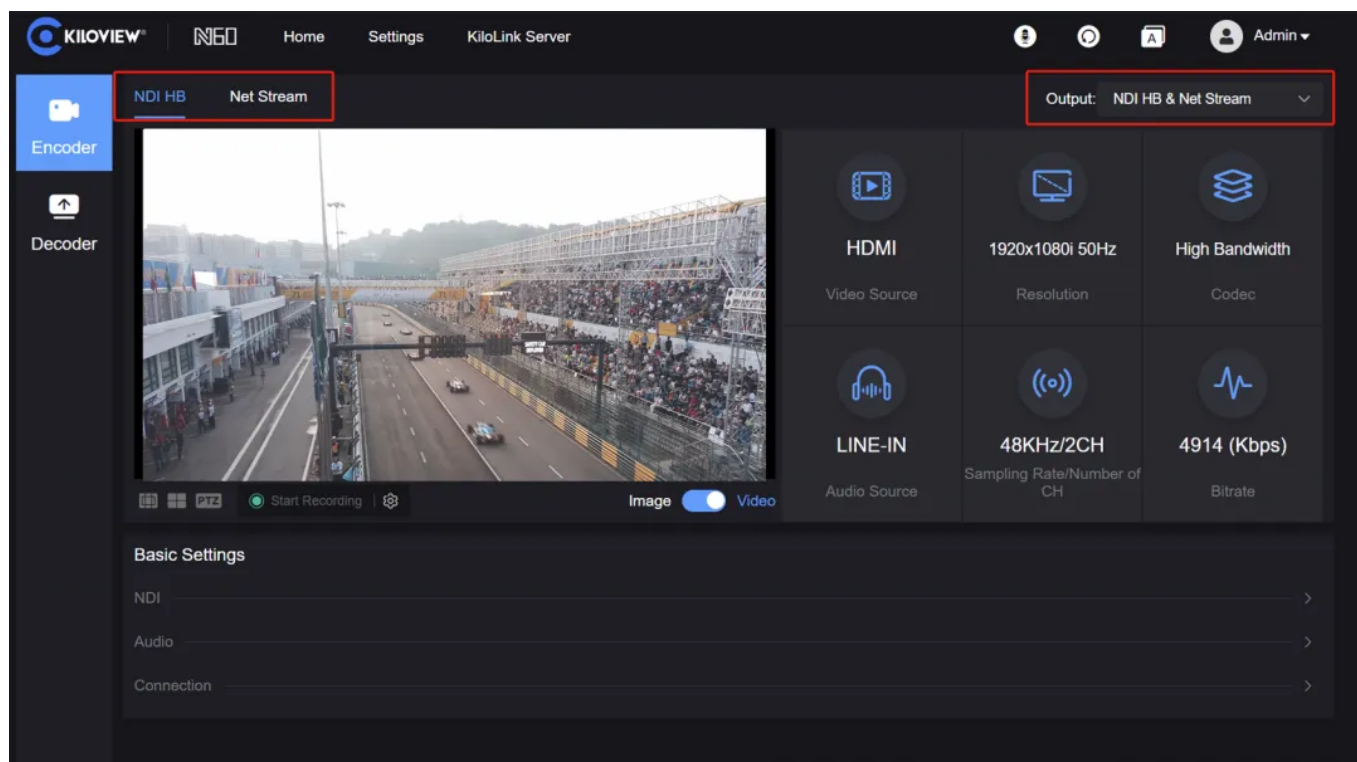
- **NDI N60 Converter: High-Quality Signal Conversion**

Kiloview's NDI N60 converters (<https://www.kiloview.com/en/ndi/kiloview-n60/>) were deployed to replace traditional HDMI baseband signals. These versatile devices supported 4K P60 HDR encoding and decoding with NDI High Bandwidth, NDI HX, and SRT, ensuring broadcast-level quality with minimal latency. Each converter provided three output formats: NDI for backend monitoring and recording, RTSP for the referee video system, and HDMI loop-out for on-site displays.



(<https://www.kiloview.com/en/ndi/kiloview-n60/>)

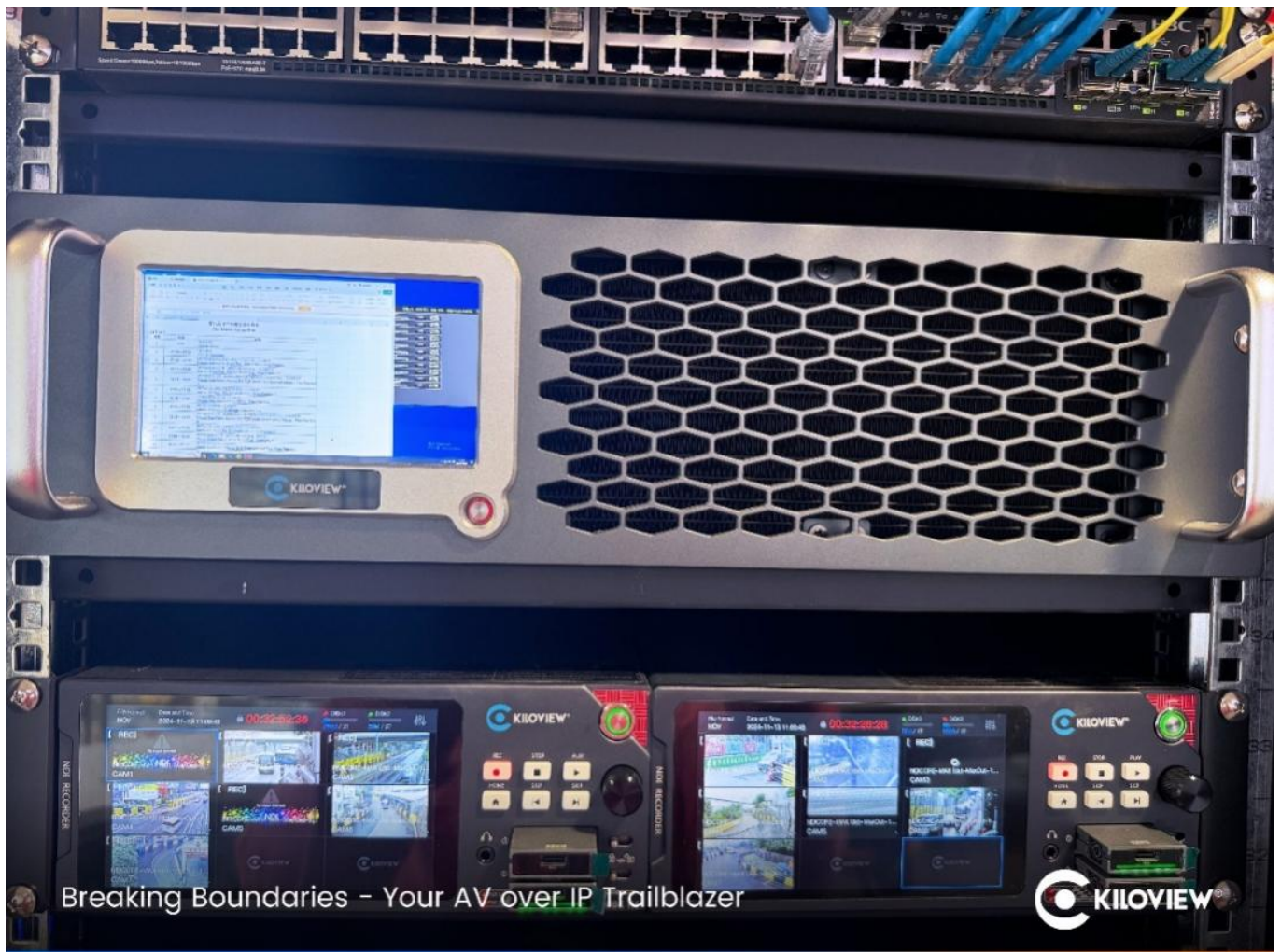
The Best 4K HDMI to NDI Bi-Directional Converter



User Interface of N60 Converter

- **NDI CORE MAX: Seamless Signal Switching and Distribution**

The NDI CORE MAX (<https://www.kiloview.com/en/ndi/ndi-core/>) played a pivotal role in managing multi-channel signal switching and distribution for easy NDI in and out. A redundant backup system was also deployed to guarantee uninterrupted operation.



(<https://www.kiloview.com/en/ndi/ndi-core/>)

One-for-All Matrix NDI CORE MAX

- **NDI CUBE R1: Broadcast-Quality Multi-Channel Recording**

Despite the venue's existing IP storage system, the NDI CUBE R1 (<https://www.kiloview.com/en/ndi/kiloview-cube-r1-recorder-system/>) was deployed to capture multiple NDI streams from the CORE MAX. This ensured high-resolution, secure, and reliable recordings for referee playback and post-production.



(<https://www.kiloview.com/en/ndi/kiloview-cube-r1-recorder-system/>)

A Turnkey Solution for Reliable NDI Recording

- **Kiloview Multiview Pro: Real-Time Monitoring**

The Multiview Pro (<https://www.kiloview.com/en/multiview-pro/>) provided flexible, server-based monitoring for commentary rooms, live broadcast studios, and other critical areas. On-site personnel could access live feeds via browsers on mobile devices or computers, ensuring comprehensive oversight.



(<https://www.kiloview.com/en/multiview-pro/>)

Managing, Monitoring and Real-time Switching

- **Centralized Management with KiloLink Server Pro**

All Kiloview devices were managed through the KiloLink Server Pro (<https://www.kiloview.com/en/kilolink-server-pro/>), enabling real-time status monitoring, parameter adjustments, and one-click firmware updates. The system also integrated Kiloview's Intercom Server Pro, facilitating seamless internal communication via USB headsets connected to N60 converters.

PART 3: A Resounding Success for the 71st Macau Grand Prix

Kiloview's NDI AV-over-IP solution ensured the smooth operation of the 71st Macau Grand Prix, earning high praise from event organizers. The system's flexibility, scalability, and reliability have set a new standard for the event's AV infrastructure, paving the way for future expansions.

"Kiloview's NDI solution really changed the game for the AV system at Macau Grand Prix. They now have a scalable system in place that will allow them to easily expand and improve their operations for future races. It's given them the

flexibility to handle bigger setups and make sure everything runs smoothly for the teams and fans.”

— CISC

“It was an honour to be involved in such a high profile project, knowing that millions of viewers would be relying on our systems delivering a successful event. Kiloview’s broadcast grade NDI solution worked seamlessly behind the scenes and delivered a world class result, once again demonstrating how NDI-based solutions offer a complete, high-quality, and cost-effective option for transforming workflows to AV-over-IP technology.”

— Kiloview Head Engineer



Kiloview Staff with the Official Team in A Group Photo

Further Information

Founded in 2011, Kiloview is a leader in the AV-over-IP industry, specializing in solutions for conversion, transmission, management, monitoring, and recording. Recognized as one of the top players in the NDI ecosystem, Kiloview combines technological innovation with a strong commitment to customer satisfaction.

Kiloview is committed to being “Your AV over IP Trailblazer,” driving innovation through continuous R&D to deliver cutting-edge solutions that solve real customer challenges and expand the possibilities of NDI-based technology.

Learn More (<https://www.kiloview.com/en/>)

