

KAIROS-based Video Production System for an Unprecedented Ballpark



Es Con Field Hokkaido

Fighters Sports & Entertainment Co., Ltd.

Opened: March 2023
Location: Hokkaido, Japan

CHALLENGES

A highly advanced video production system that links with various systems was sought to deliver all-encompassing entertainment at the world's most advanced baseball stadium.

SOLUTION

The KAIROS IT/IP platform was adopted as the core of a comprehensive production system for exceptional content synchronizing video, lighting and sound.

The flexibility of KAIROS and its ability to create diverse effects on large screens is truly impressive. We selected the KAIROS platform to allow us to realize our envisioned entertainment system.

Mr. Takafumi Morino
Executive Officer and General Manager
Entertainment Management Division,
Business Supervisory Headquarters
Fighters Sports & Entertainment Co., Ltd.

Note: Job title at time of implementation

Background

Revolutionary Baseball Stadium

Es Con Field Hokkaido opened its doors in March 2023 as a state-of-the-art ballpark equipped with two of the world's largest screens integrated with the KAIROS video production system to enthral fans with stunning video, lighting and sound. Built in Japan for the Hokkaido Nippon-Ham Fighters baseball team, the movable-dome stadium's concourse encircles the interior to offer views of the field from anywhere. This is also the world's first ballpark where people can view games from an on-site hotel or even from hot springs and saunas!

System Overview

Highly Advanced Entertainment System

To take full advantage of massive 86-meter wide screens, content had to be created that was not limited to 16:9. The choice was obvious: Panasonic's KAIROS IT/IP platform was adopted to enable video with diverse aspect ratios and resolutions to be intuitively layered. What's more, approx. 600 digital-signage displays were installed in the ballpark for immersive real-time viewing experiences throughout the stadium. The systems are integrated via a central management system (S-CMS)*, together with lighting and sound, for highly efficient operation.

*Available only in Japan

First Ballpark of its Kind

Es Con Field Hokkaido is surrounded by the Hokkaido Ballpark F Village, a comprehensive development encompassing glamping facilities, an athletic park and condominiums. A sports facility unlike anything ever seen before was born under the concept of a co-creative space embracing residents and other visitors.

- Location: F Village, Kitahiroshima, Hokkaido
- URL: <https://www.hkdballpark.com/>



▲ Es Con Field Hokkaido, the nucleus of Hokkaido Ballpark F Village

Ballpark/Stadium Solution

Benefits

Dynamic Production Thanks to KAIROS' Amazing Flexibility

KAIROS is a revolutionary live switcher that utilizes CPUs and GPUs for video processing to achieve a multilayered approach that places no restrictions on MEs or keys. In addition, KAIROS handles video with diverse aspect ratios for both input and output that are impossible to achieve with conventional live switchers.

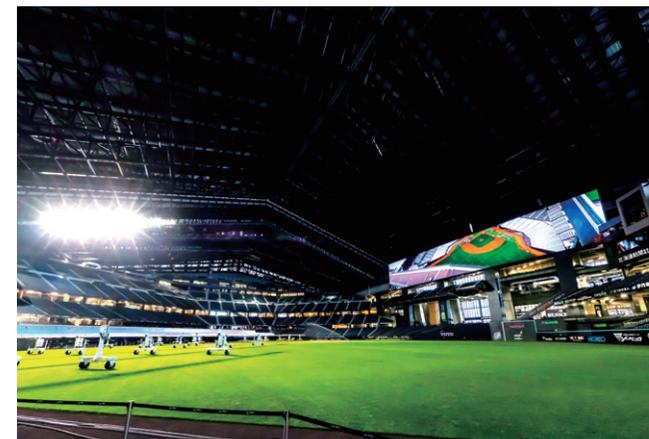
According to Mr. Takafumi Morino, head of entertainment management for the ballclub's parent company: "We wanted something new that people could experience only at our ballpark/stadium, so we set scalability and flexibility as the themes for our entertainment system. We knew that we had to constantly deliver new experiences involving the best and newest technology. The idea was for fans not only to enjoy the team's success, but also to be thrilled by memorable entertainment experiences throughout each game, and every time they come back. When I first saw KAIROS, I was truly impressed by its flexibility and design concept of unrestricted aspect ratio. In addition, I sensed that it had the potential to keep pace with the expected evolution of Es Con Field. In the past, complicated switchers could only be operated by technicians, but KAIROS is an amazingly intuitive system that entertainment producers can operate without restraint to achieve artistic expressiveness."

Seamless Integration with Proprietary Systems

Mr. Shoji Kumamoto, representative director of SITE4D Inc., said, "Together with Fighters Sports & Entertainment, we developed a proprietary system as the core of our real-time video production, integrating a sports coder, CG equipment and more, which we named 'Metaball'. We also created a macro system to automatically activate KAIROS from Metaball via the KAIROS control protocol. Our goal is to provide live spectator experiences throughout Es Con Field. For example, if there is a home run or big play, the large screens and approx. 600 digital-signage displays simultaneously switch to the action. Of course, such action is unpredictable, so our CG team follows the game from a window in the control room, rather than via monitor, and then uses the KAIROS control protocol to send, for example, a 'home run' command from Metaball, after which KAIROS instantly displays the scene throughout the stadium. In the case of a conventional switcher, multiple people would have to operate the system simultaneously to capture and project the action. But thanks to KAIROS' high-level system integration, we can achieve real-time production with a single operator."



▲ Control room and KAIROS control panel (center)



▲ Dynamic production integrating large-screen video, light and sound



▲ KAIROS instantly transmits video to the large screen and every digital-signage display in the ballpark.



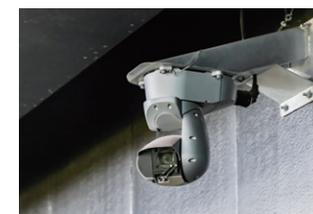
▲ AK-UC4000 4K studio camera for high-definition video



▲ AJ-CX4000 camera recorder for shooting interviews, etc.



▲ AW-UE80K PTZ camera behind the backstop for views from the players' perspective



▲ AW-HR140 outdoor PTZ cameras in three locations, including home bullpen and ceiling



▲ Rack in the control room

Low-latency Connection with Hundreds of Digital-signage Displays

A CATV solution based on head-end technology controls approx. 600 digital-signage displays to display game and video entertainment together with light and sound, plus ads and other information. Multi-channel distribution is possible with less than a half-second delay. Live video is delivered to all digital-signage displays in the concourse, restaurants, hot tubs, etc., almost instantaneously when the crowd cheers.

Mr. Morino said, "Sitting in the seats to watch a game is one thing, but since Es Con Field is designed for enjoying games from practically anywhere, we installed approx. 600 digital-signage displays throughout the ballpark. Low-latency delivery was critical, so we adopted Panasonic's digital signage system to display content with less than a half-second delay. The result is that everyone can share the experience together, at practically the exact same moment."

Integrated Management for Extra Efficient Operation

Approx. 600 digital-signage displays can be simultaneously turned on and off with ease via the integrated management system (S-CMS)* using a touch panel in the control room. The system also tracks the status of all digital-signage displays and sends alerts in the event of any problem. The S-CMS is linked to KAIROS as well as large-screen, lighting and sound systems for smoothly integrated production. According to Mr. Morino, "Linkage to all systems via the S-CMS has greatly streamlined our operations and reduced our staffing needs. But we are always striving to create new ballpark experiences, so rather than worry about cutting staffer, we focus on utilizing our comprehensive system to take on new challenges."

*Available only in Japan



▲ Digital-signage displays arranged along concourse for uninterrupted viewing even when walking



▲ Extra-large 25-multi-screen video wall in the "foodhall by Nipponham" restaurant



▲ In the hot springs facility, games can be watch via digital-signage displays or even via a window while soaking in a bath!



▲ Lounge with digital-signage displays and projector, with the feel of a premium viewing space



▲ Central management system (S-CMS) for integrated management of video, lighting and sound systems as well as approx. 600 digital-signage displays throughout the ballpark



▲ Screen for monitoring status of all systems



▲ On-site hotel room where viewing is possible directly (far-end window) or via a monitor



▲ Rooftop deck outfitted with robust Outdoor LCD display



▲ Interview room with large 9-multi-screen video wall



▲ Extra-large 98-inch monitor at employee entrance

Ballpark/Stadium Solution

In the Customer's Own Words

Co-Creating an Unrivaled Ballpark

"I was very impressed by the strength of Panasonic's hardware and software, including KAIROS. Above all, I think the most important thing was the Panasonic team's enthusiasm to work with us on co-creating something new. We look forward to our continuing collaboration with Panasonic to provide customers with exciting new experiences that maintain Es Con Field's status as an unprecedented ballpark."



Mr. Takafumi Morino
Executive Officer and General Manager
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Business Supervisory Headquarters
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Unforgettable Stadium Experiences

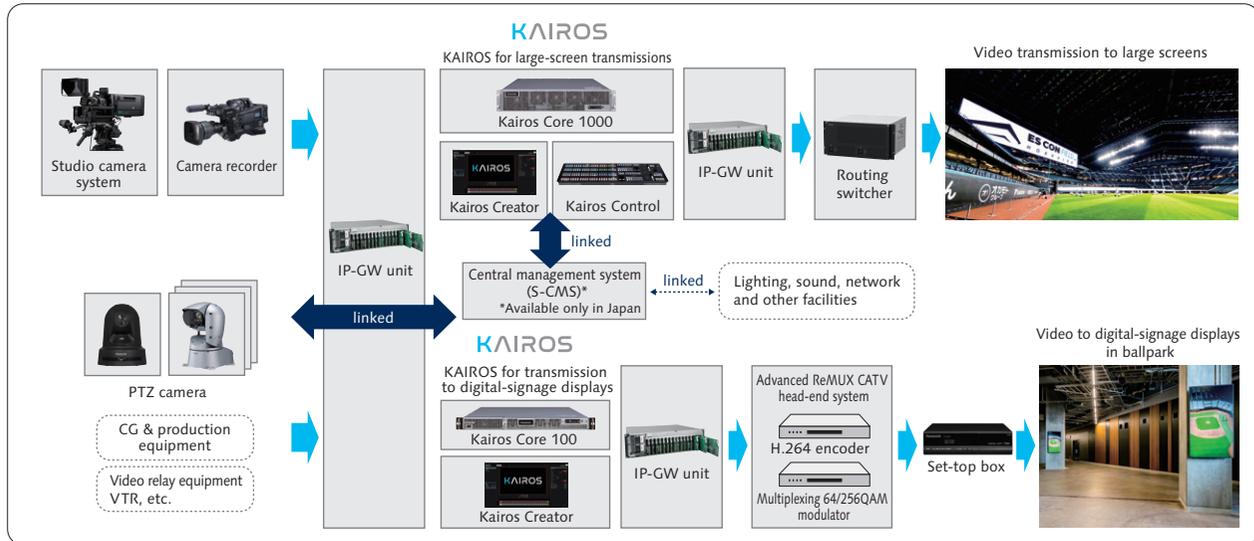
"This project has been a unified team effort with Panasonic spanning a long period of time. At Panasonic's facility, for example, they built an exact replica of the control room planned at Es Con Field to help us envision the finished system. The baseball season is now under way, but I look forward to further KAIROS upgrades that will allow us to evolve together with Panasonic in our pursuit of ballpark experiences that leave fans with memories for a lifetime."



Mr. Shoji Kumamoto
Representative Director
SITE4D Inc.

Note: Job title at time of implementation

System Overview



Installed equipment

Note: Some products available in Japan only.

IT/IP platform "KAIROS"

- Main Frame
Kairos Core 1000 (AT-KC1000) x 2
- Main Frame
Kairos Core 100 (AT-KC100) x 2
- Control Panel
Kairos Control (AT-KC10C1) x 1
- GUI Software
Kairos Creator (AT-SFC10)

Control room video system

- Routing Switcher
AV-WM7300 x 1
- Peripheral Board
AV-PF3000 Series x 7
AV-PF8000 Series
- LCD Monitor/HD Monitor x 21

Camera System

- 4K Studio Camera
AK-UC4000 x 2
- Memory Card Camera Recorder
AJ-CX4000 x 1
- 4K Integrated Camera
AW-UE80K x 1
- Full-HD Outdoor Integrated Camera
AW-HR140 x 3

Central management system

- Central management system
S-CMS

On-site digital signage

Professional Displays x Approx. 600

- 4K UHD LCD Displays
SQ Series
(98-inch class)
- 4K UHD LCD Displays
EQ Series
(75/65/55-inch class)
- 4K UHD LCD Displays
CQ Series
(65/55/50/43-inch class)
- VIDEO WALL LCD DISPLAY
LFV9 Series
(55-inch class)
- Outdoor-use LCD DISPLAY
XF1H Series
(49-inch class)
- Full-HD LCD DISPLAY
EF Series
(32-inch class)

Projector

- 1-Chip DLP™ Projector
PT-RZ890LW x 1
- LCD Lamp Projector
PT-VX430J x 2
- LCD Lamp Projector
PT-TW381RJ x 1

Digital Signage System

- Advanced ReMUX CATV head-end system
- Set-top box (STB)

