

# High-quality live streaming with a compact IP-based AV system.



## Panasonic Visuals Co., Ltd

**The 22nd Tokyo 03 Solo Performance "Yana Anbai" (Uncomfortable Adjustment) [Live Streamed Event]**

System: **AV System for Live Streaming**

Period: September 2020 Location: Tokyo, Japan

### Needs:

- The client wanted compact AV system and easy to operate
- The Client wanted to adjust the brightness and color of the footage easily and accurately
- The client wanted to achieve efficient camera work using tally lamp

### Solutions:

- Built a simple and compact AV system for live shooting controlled by IP

“ Using IP enabled live footage of higher quality than anyone could have expected from such a compact system. ”

Mr. Shinichi Kaitani  
Shooting Team  
Technical Group  
Panasonic Visuals Co., Ltd.

\* This employee's position in the company is correct at the time the client used the products.

## Background

### Live streaming of an independent performance by comedy trio TOKYO 03

The 22nd Tokyo 03 Solo Performance "Yana Anbai" (Uncomfortable Adjustment) was held over a four-day period from Thursday, September 3, 2020. Due to the COVID-19 pandemic, the number of audience members was restricted, and thorough measures were taken to stop the spread of COVID-19. To accommodate those who could not be allowed into the venue, a matinee performance was held on Sunday, September 6th, along with live streamed performances online in the evening. Many Panasonic AV devices were used in the system for shooting and streaming the performances, and Panasonic Visuals handled the shooting.

## Why chose our products?

### A Compact AV System enables Stable Operation and high-quality footage

Because the stage patterns for this event were streamed live, the client needed to adjust settings such as brightness and color in real time during the event. This would normally require a large-scale system equivalent to the relay equipment used in TV stations, but by combining our AG-CX350 Memory Card Camera Recorder, AW-UE150W/K 4K Integrated PTZ Camera, AV-UHS500 Live Switcher and AW-RP150GJ Remote Camera Controller, we were able to build a system where the functions required to shoot the live performances could be controlled by IP. Some of the cameras were PTZ Cameras, enabling the shooting in the hall to be done by a smaller film crew, reducing the risk of infection. A major reason why the client chose our system was because it enabled uninterrupted live streaming with a compact system that helped to prevent the spread of COVID-19.

### The 22nd Tokyo 03 Solo Performance "Yana Anbai" (Uncomfortable Adjustment)

TOKYO 03 has held independent performances in a hall almost every year since 2004. This year's performance, the trio's 22nd, was planned to be held at 20 locations around Japan, but was scaled down to two venues in Tokyo and Osaka due to the COVID-19 pandemic. The members of TOKYO 03 were conscious that many fans would not be able to come, and now more than ever, they wanted their fans around Japan to enjoy a live performance, so they held their first ever live streamed performance, with archives provided after the event.

■ Profile of TOKYO 03 <http://www.p-jinriki.com/talent/tokyo03/>



▲ The title logo of this event



▲ The cameras used to shoot the event

## Benefits of this system

### A simple system using IP

Four AG-CX350 cameras and two AW-UE150W/K cameras were used in the hall. Normally separate systems would have needed to be built to control the tally displays and AUX buses of each camera, but combining the AV-UHS500 and AW-RP150GJ made it possible to control all of these by IP, without needing to add devices or wiring. "The structure of the venue meant that the cables needed to reach around 200m," explains Shinichi Kaitani from Panasonic Visuals, who oversaw shooting and streaming the live event. "But since we used IP to transmit signals other than that of the footage and perform the various forms of control, that significantly cut down on the wiring that was needed. In particular, we were able to connect the PoE hubs of the camera and control system using a single LAN cable, which made it extremely easy to set up the equipment."

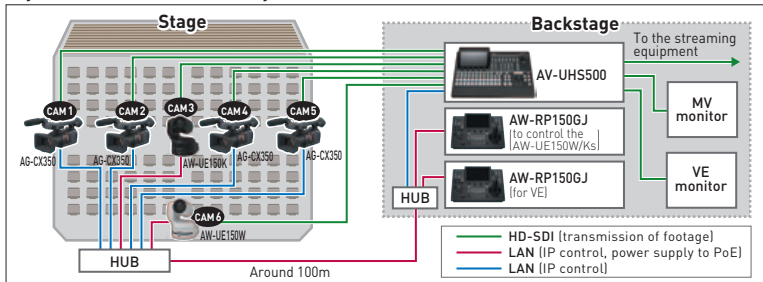
### High-quality stage footage by combining various devices

We used the AV-UHS500 to switch footage and two AW-RP150GJs to control the camera during the live streamed performances. One AW-RP150GJ was used to control panning, tilting and zooming by the AW-UE150W/K cameras and the other was used for VE (video engineering) to adjust the footage of the six cameras installed in the hall. The footage of the cameras was controlled collectively by VE, enabling a unified picture. Remote control was used for the AUX bus from the AW-RP150GJ to the AV-UHS500, enabling the camera footage output to the VE monitor to be switched using the AW-RP150GJ. "This performance used a lot of stage lights, which required constant adjustment of the brightness and color," says Mr. Kaitani. "Since all the camera footage was adjusted from the AW-RP150GJ, we got a really high-quality picture. Being able to switch the footage for the VE monitor with the same controller enabled extremely smooth setting changes in the short time between acts."

### Wide range of camera work by using a tally display

When multiple cameras are used to film a live performance, it is crucial to use a tally display to indicate which camera is on air. For this show, tally information was sent from the AV-UHS500 via IP to control the tally displays of the AG-CX350 and AW-UE150W/Ks. The tally display of a camera turns red when the camera is streaming, which enabled each member of the film crew to see at a glance whether the footage from their camera was being streamed. This enabled uninterrupted footage when each camera was on air and allowed various shots to be taken efficiently with one camera as crew members could move their camera to a new position while the tally was off.

### Layout of the devices in the system



## Future prospects

### We want to actively work on IP-based AV production

The client chose to film this live event in mid-July, which left a comparatively short time to select and prepare the devices. Since there was so little time for preparation, the client was relieved to have such a reliable system to shoot the event. Our system for this show used IP-based control to reduce the wiring that was needed and transmitted the footage through coaxial cables, but in future we want to try a system where IP is also used to transmit the footage and control the devices.



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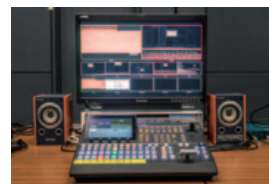
[Media Partners] JINRIKISHA ANNEX / BANDAI NAMCO Live Creative Inc. / KYODO TELEVISION, LTD.



▲ Two AG-CX350s and an AW-UE150W/K were set up in the center of the hall. The wide angle shooting capacity of the AW-UE150W/Ks enabled the whole of the stage to be captured.



▲ The film base during the show. From the front: the AV-UHS500, the AW-RP150GJ (to control the AW-UE150W/Ks) and the AW-RP150GJ (for VE)



▲ The AV-UHS500 was used to switch the footage



▲ The AW-RP150GJ used for VE. This was used to adjust the brightness and color of the footage from the four AG-CX350s and two AW-UE150W/Ks in the hall.

### Tally displays for each camera



▲ AG-CX350: Red tally (PGM)



▲ AG-CX350: Green tally (PWV)



▲ AW-UE150W/K: Red tally (PGM)



▲ AW-UE150W/K: Green tally (PWV)

## Devices

- Memory Card Camera Recorder **AG-CX350 x4**
- 4K Integrated Camera **AW-UE150W/K x2**
- Live Switchers **AV-UHS500 x1**
- Remote Camera Controller **AW-RP150GJ x2**

