Case Study

Intel® Xeon® Processors

TAG Video Systems Uses Intel® Xeon® Processors to Deliver World-Class Viewing Experiences

New platform is an integral part of FOX Sports' ground-breaking, first-of-its-kind live-production system.

Intel® Technology Highlights

- Intel® Xeon® Processors ensure flexibility to run in VM's, in dedicated on-premises bare metal, and in the cloud.
- TAG Video Systems' monitoring and visualization platform helps monitor the integrity of over 1,200 sources and drive over 150 displays.

When millions of people are watching a sporting event, it's crucial that things go smoothly both on the field and off. In the broadcast booth, producers, engineers, and technicians have to juggle multiple sources of sound and images, transforming a torrent of data into a seamless stream that keeps viewers glued to their TVs, laptops, and smartphones. When the events are finished, it's time to pack everything up, move to the next venue, and do it all over again.

Since TAG Video Systems introduced its first Internet Protocol (IP) solution in 2018, it has become a world leader in 100% software-based integrated IP Multiviewing, Probing and Monitoring solutions. TAG Video Systems' solutions run on standard OTS hardware and cloud and provide state-of-the-art IP monitoring and analysis tools. Its "zero friction" software model can easily be scaled up and down. With its low latency and high resolution, TAG Video Systems' solutions have been used everywhere across some of the biggest sports broadcast productions in the world through Over-the-Top (OTT) streaming and content distribution network (CDN) monitoring for the world's largest platforms.

The Challenge

The broadcasting industry has benefited hugely from the digital transformation. At the same time, much of the hardware and networking infrastructure they use has not kept up with the pace of change. Many businesses still rely on cumbersome

TAG Video Systems is a world leader in 100% software-based integrated IP multiviewing, probing and monitoring solutions.

and expensive dedicated hardware, locked into to specific brands and equipment.

Transferring broadcast facilities between events and locations can involve tearing down, transporting, and reassembling expensive and intricate hardware—and when the event is a world championship or Olympic final, missing a coin toss or kickoff is not an option.

Broadcasters depend on multiple vendors to provide optimal performance, low latency, and real-time visibility and monitoring to give viewers the ultimate experience. They need a solution that is powerful, agile, and easy to deploy without sacrificing quality or performance, and lets them leverage on-site infrastructure and the cloud while offering a smaller footprint in the field.

That's where Intel Xeon processors come in.

The Solution

TAG Video Systems builds their solutions around Intel Xeon Processors to ensure amazing performance and quality, says Peter Wharton, Chief Strategy and Cloud Officer for TAG.

> "For us, Intel Xeon processors are a cornerstone of how we deploy technology. We run only on Intel Xeon CPU's, and that gives us the ability to run everywhere: in VM's, in dedicated on-premises bare metal, in the cloud."
>
> *—Peter Wharton, Chief Strategy and Cloud Officer for TAG*

"For us, Intel Xeon processors are a cornerstone of how we deploy technology. We run only on Intel Xeon CPU's, and that gives us the ability to run everywhere: in VM's, in dedicated on-premises bare metal, in the cloud." As a result, TAG Video Systems software can run anywhere, offering all customers a simple and convenient common platform.

"Customers who have systems that they deployed a decade ago can still run the latest version of our software," Wharton says. "Intel allows us to deliver customers a solution that constantly keeps up with changes and evolves with them, and they never outgrow. By running on Intel Xeon processors, we're able to make sure that there's always something there for the customer. And that's really one of the huge values."

Customers such as FOX Sports have benefitted from TAG Video Systems' interoperability with other equipment, allowing them to buy top-of-the-line systems from multiple vendors without having to worry about compatibility.

This was most clearly demonstrated during one of the world's greatest sporting events in Qatar when eyes across the globe were drawn to some of the most exhilarating soccer matches ever to be played. FOX Sports used TAG Video System' monitoring and visualization platform in all their control rooms and operations multiviewers to show 64 matches live on across the U.S. on the FOX and FS1 channels. The matches also had to live stream on the FOX Sports App and be available on-demand on Tubi as replays later. In all, the system had to be able to monitor the integrity of over 1,200 sources and drive over 150 displays.

FOX Sports used TAG Video Systems' monitoring and visualization platform in their control rooms and operations multiviewers to show 64 matches live on across the U.S. on the FOX and FS1 channels.

TAG Video Systems' platform was an integral part of FOX Sports' ground-breaking, first-of-its-kind live-production system called a flypack. The system includes a full control room, 40 tech core racks, and 10 venue racks. The equipment racks, built around Intel Xeon processors, can be flown via 747 from venue to venue, instead of having to travel aboard container ships. The flypack system arrives fully pre-wired and can be powered up and ready to go within six hours.

"We've shaved weeks off of setup time," says Kevin Callahan, Vice President of Studio Remote Operations at FOX Sports. "We're able to start programing realistically on day two, where in the past you would have been starting at the beginning of week two if you were lucky. And instead of doing 12- and 14-hour days in the beginning of the tournament, now we're doing eight-hour days. Things are much more manageable for everybody." Quick setup also cuts down training time.

When it's up and running, the system makes it possible for FOX Sports operators to see everything in the SMPTE ST-2110 IP workflow, as well as JPEG-XS and UHD formats. A trained IT team can manage the entire network remotely.

"Traditionally, these remote systems would be a standalone system that doesn't talk to the rest of the network, and they would actually beam the signals back to their HQ, essentially to their broadcast centers," says Mark Davis, Customer Success Lead at TAG. "But in this case, they actually did it as a direct connection as part of the full infrastructure." No previous system had ever combined as many sources at this scale, Davis says, let alone when integrated directly into their IT infrastructure.

"It let every one of the different vendors to be able to communicate and exchange video streams between the systems in a standardized way," Davis says. "If this was done in the traditional TV way, it would have been probably ten times as large, miles and miles of copper."

Flexibility is key, Callahan says. "In remote broadcasting, the only thing constant is change. We've gotten to a solution that allows us to use the same system for multiple events and just adapt it very slightly for the needs of a particular broadcast.

It's much more flexible, but it also allows us to bring less and do more."

"We're using AI in all different manners in our broadcasts," Callahan continued. "The number of signals that we are moving between all the systems is over 5000 different signals. It's impossible for a single person to monitor all of those signals to be able to make the decisions at a moment's notice on all of the signals. So we're able to leverage AI to do a lot of that probing for us and to call the attention to the feeds or the signals that are the ones that are out of spec."

The combination of interoperability, portability and agility promises to revolutionize how live production is done. Best of all, FOX Sports can change and add to the system as their business needs evolve.

The Qatar experience went so well that FOX Sports used the flypack for NFL's championship game six weeks later in Arizona. And in May 2023, TAG Video Systems' content matching technology won the Best of Show award from the National Association of Broadcasters. The award, judged on criteria of innovation, features, cost efficiency, and performance, highlighted the software's ability to dramatically reduce workflow complexity and eyes-on-glass, making it possible for media companies to deliver quality content with fewer resources and more confidence.

The system's next appearance is in the Land Down Under this summer as top women soccer players from around the world compete in Australia and New Zealand. A large FOX Sports crew based in Sydney will cover all 64 matches from the network's dedicated outdoor studios that feature three unique stage locations providing sweeping views of the Sydney Opera House and Sydney Harbor Bridge. Soccer fans across America can tune in on FOX and FS1 as the competition to crown the best women's national team in the world plays out.

"The broadcast is a massive undertaking by the FOX Sports team," Callahan says. "It is truly one of our jewel events. We want to make sure that we're not just covering the events themselves; we want to translate the energy to the viewers at home."

"We're on the front lines of technology with this, and it requires a lot of partners like TAG and Intel," he adds. "So, we're very happy to have it running on Intel-based CPUs."

Where to Get More Information

Learn more about TAG Video Systems

Explore the capabilities of Intel Xeon processors

0823/RJMJ/SB/PDF ♻ Please Recycle 356509-001US