

# Mission Accomplished:

## NEC Displays and Hiperwall Software Power Network Operations Center for Global Satellite Services Provider

### Facility:

- Intelsat

### Vertical:

- Corporate

### Location:

- Ellenwood, Georgia

### Challenge:

- Combine four separate departments into one all-encompassing network operations center

### Solution:

- 72 55-inch NEC [X555UNV](#) displays in a 3x24 configuration and Hiperwall software

### Result:

- A 6.75-by-96-foot, high-tech video wall for management and monitoring of mission-critical customer operations

For a company to provide support for its global customers' mission-critical operations requires complete visibility into all of their network processes, worldwide – and finding the technology that can provide that level of visibility is no simple task.

To streamline operations and enhance customer support, Intelsat, a global leader in providing integrated satellite communications, decided to combine multiple departments into a new Network Operations Center (NOC) – but that meant adding a technology solution robust enough to support four formerly separate departments and a host of operational services.

### The Challenge

Intelsat offers innovative connectivity solutions to relay information all over the globe. The company operates the world's first globalized network, delivering high-quality video and broadband services anywhere in the world. The network combines the world's largest satellite backbone with terrestrial infrastructure, managed services and an open, interoperable architecture.

Before the fall of 2016, Intelsat previously ran four discrete operations centers that were separated based on function: a radiofrequency operations center, which handled the space segment; a managed services operations center, which handled end-to-end fiber, the terrestrial network and all managed services on that network; an occasional-use service center, which handled occasional-use bookings and provisioning; and a teleport operations center, which handled teleports, including equipment and maintenance.

As Intelsat continued expanding, the company decided to combine the four discrete operations centers into one comprehensive NOC.

"As Intelsat grows, it's bringing more services online," said Robert Wilson, senior manager of the NOC Support department for Intelsat. "The NOC brings multiple functions into the same room to identify and create synergies."

To make the NOC fully functional, Intelsat needed to upgrade its technology.

"Before the operations centers were combined, each center had its own video wall used for monitoring, but in the NOC, we needed something that could better accommodate our enhanced customer support model," Wilson said.



A team culled from multiple Intelsat departments, including employees from the network engineering, operations engineering and facilities engineering teams, began exploring some technology options to supercharge the NOC.

## The Search for NOC Technology

The team wanted the new video wall to be a significant upgrade from the previous set up the four separate operations centers used, but the requirements to effectively support the NOC were slightly different.

"We had a fairly significant video wall in the managed service center before the NOC was created," Wilson said. "That wall had 36 screens, but they were 40-inch monitors, and of those, 27 were used to monitor managed media services, which are only one aspect of Intelsat's diverse service portfolio."

Intelsat previously had worked with Diversified, a provider of managed network and technology solutions, on other projects, and engaged the company again to renovate and upgrade the space that would become the NOC. For this particular project, the Intelsat team wanted to choose the video wall themselves, and did due diligence on three different vendors before making a selection: 72 55-inch NEC [X555UNV](#) displays in a 3x24 configuration and Hiperwall software.

"Intelsat found the Hiperwall software through Sharp/NEC, so we developed this overall solution to help the company facilitate its NOC broadband and video," said Tyler Bonner, senior vice president of the Mission Critical Environments Division at Diversified. "We've been working with Sharp NEC Displays since 2000. The products are solid, and it's an organization with a customer service mentality. Mission-critical facilities can't go down, so we like to align ourselves with companies that have a desire to take care of mission-critical customers."

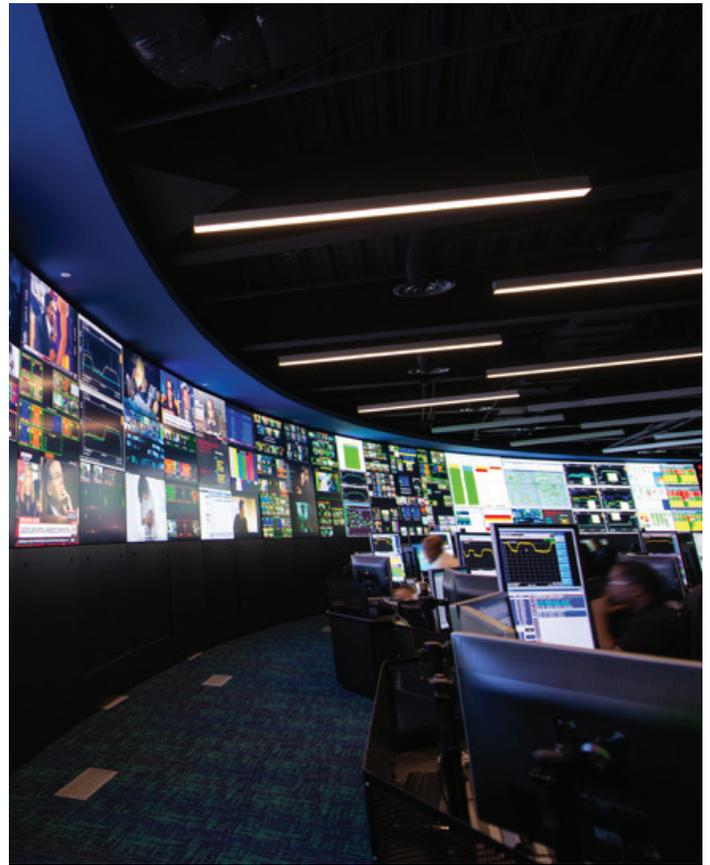
"[Diversified] had a previous relationship with Sharp/NEC, so that was comforting for us, knowing that they had a solid track record with Sharp/NEC," Wilson added. "It gave us the confidence to work with Sharp/NEC, but the ultimate decision was made based on technical requirements."

The technical requirements that appealed most to Intelsat included the ultra-narrow bezel on the [X555UNV](#), which would help the video wall look like "one huge pane of glass," Wilson said. The computing element was another factor.

"The most significant advantage of the NEC product was the integration of Open Pluggable Specification (OPS)," Wilson said. "The monitors we chose have the [the ability to integrate the OPS computer module], which let us put the Hiperwall nodes on-board the display."

This saved on cost as well as space, he added.

"We're running some of these feeds almost from the other side of campus," Wilson said. "If we had to put the PCs driving the monitors in another rack, we would have had to invest a considerable amount of time and money to run extra cable, so it cut down on the footprint of the hardware and wiring required to run such a huge wall. With the extra savings, it was a no-brainer that NEC was the product we wanted."



Intelsat chose the 55-inch NEC [X555UNV](#) over a smaller display because its size coupled with the Hiperwall software would allow the NOC teams to take better advantages of the massive video wall, Wilson said.

"Because 55 inches is larger than the previous sizes we used in other operations centers, we can use the Hiperwall software to manipulate the wall in different ways. For example, we can use four of the monitors to look at one piece of data, or cut the individual screen into pieces with the software," he said. "We don't need one specific feed going to one specific monitor. We've been able to both make important images larger on the video wall, or squeeze more images in."

Bonner added that the versatility of video walls like Intelsat's is ideal for similar mission-critical operations.

"Intelsat is at the apex of what most control rooms want to do," Bonner said. "A trend we're seeing in the control room space is a desire for highly specialized skillsets to be able to leverage one another's talents to share and collaborate. This is moving our customers away from traditional AV methodology and products toward leveraging an IP network. When people see video walls, they automatically think about an AV network, but the NOC wall is more of an IP/IT implementation."

## The Installation

While the video wall is a very large system, it was relatively simple to install, Bonner said. Diversified engineers helped Intelsat to retrofit the NOC space, which required some renovation, like ceiling work and replacing the underfloor wiring.

"The tech solution was pretty simple," he said. "The tough part was the execution and project management."

Wilson added that because of the size and curvature of the wall, Diversified had a third party custom-fabricate a support and mounting system, but otherwise, the installation was seamless.

"It's huge, but substantial, and just a well-engineered wall," he said.

## The NOC at Work

The NOC has been up and running since December 2016, with anywhere from 25 to 35 people working at any given time, 24/7. The video wall runs across the front of the NOC room and is used to monitor active video and audio for managed services. The wall also supports various element managers and network monitoring systems, so the fault and performance management tools are up on the video wall at all times. A universal IR remote allows NOC staff to control individual, groups of, or all monitors at once to fine-tune settings and brightness with just one remote.

As events occur across Intelsat's global networks or as issues arise, the network monitoring tools or element managers go into alarm mode, and NOC staff responds with a deep dive into the matter.



Wilson said the NOC video wall has helped facilitate the merging of the previously separate groups at Intelsat.

"There are always mixed feelings when you bring different groups together [in a company], so when you come into this state-of-the-art center and see this wall that ties the room together – it really helped that process," he said. "The employees love it, and you can tell the NOC staff is very proud of it."

Wilson added Intelsat has a conference room in the back of the NOC, with blackout curtains separating the conference room window from the operations center for privacy during meetings. Customers who come in for a meeting are sometimes treated to an unveiling of the video wall when a button is pushed and the blinds rise, revealing the NOC and the 6.75-foot-high, 96-foot-wide wall.

"Some customers are speechless because it looks so good," he said. "Almost all of our main video customers have commented how little discrepancy there is between the colors and contrast of each monitor, and that the wall looks like a single pane of glass. That's something not often found, and a true testament to the product."

