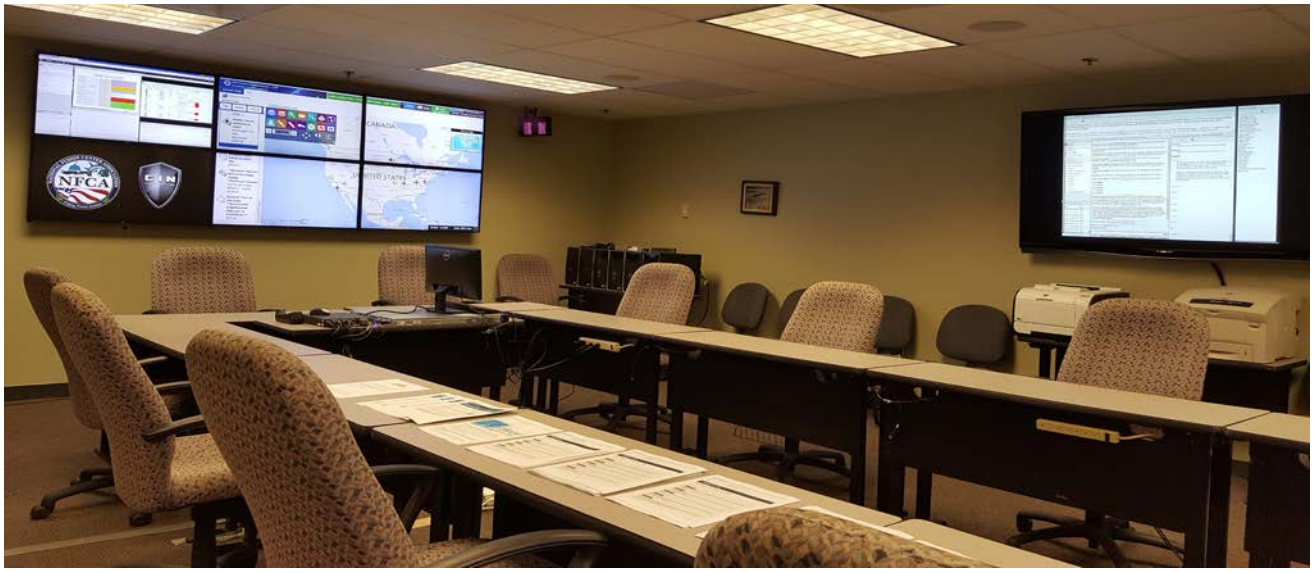
Case Study

Hiperwall Enhances Situational Awareness at Kansas City TEW

Kansas City Fusion Center Uses Hiperwall Software to Display an Aggregation of Visual Intelligence for Multiple Agencies



Hiperwall software enables Kansas City Regional TEW Fusion Center to display multiple sources of visual intelligence for decision makers from local, state and federal agencies, including police, fire and the U.S. Department of Homeland Security.

Challenge

In 2013, Kansas City Regional Terrorism Early Warning (KCTEW) Fusion Center had video display technology that was ineffective and had become outdated after only two years of use. The group needed a new visualization solution that could display all of the organization's intelligence feeds—a capability the old technology did not provide. Money was tight and most traditional video wall solutions were not within financial reach.

Solution

After extensive research on video wall solutions, KCTEW chose Hiperwall software, a cutting-edge distributed visualization system and affordable solution, to power the fusion center's new video wall system: a 3 x 2 video wall, a large satellite display and a 1 x 3 video wall.

Results

Four County EMC receives the following benefits from the Hiperwall video wall system:

- Displays information at a glance on three video walls used for dispatch, security and engineering
- Enables call center operators to visualize location of outages and closest field personnel
- Reduces response time, saving customers both time and money

Background – About Kansas City Regional TEW Fusion Center

Kansas City Regional Terrorism Early Warning (KCTEW) fusion center brings local, state and federal law enforcement officials together with public and private organizations to detect, deter and respond to terrorist threats in the Greater Kansas City, Missouri community. The fusion center's Interagency Analysis Center collects information from a variety of sources. This data is evaluated and analyzed in an effort to identify potential trends, threats or patterns of terrorist or criminal operations within the region.

Challenge

In 2013, KCTEW had video display technology that was ineffective and had become outdated. The fusion center needed the ability to display live video and real-time data in a coherent picture to improve situational awareness and to provide, when needed, a common operational picture for several public safety agencies, including the Kansas City Police Department, the Kansas City Fire Department, the U.S. Department of Homeland Security, FEMA and the FBI.

"We wanted to be able to access data and video from every single piece of our equipment," said Troy Campbell, IT Specialist and Cyber Threat Intelligence Program Director for KCTEW.

The fusion center required a new, flexible solution so that data and video feeds could be added, taken away and rearranged either in real time or called up in a pre-arranged layout of real-time intelligence as a situation warranted. The new system also needed to be able to display feeds from many sources and even show content from computers and sources located in distant buildings of other agencies.

The former video system had none of these capabilities. It could switch video between several different devices, but the benefits stopped there. Whenever a new feed needed to be added to the system, expensive proprietary hardware had to be purchased, resulting in significant expense, time and effort.

Therefore, KCTEW needed to source a new visualization system that was both hardware agnostic and had the flexibility for sources to be added quickly, easily and cost effectively. Only a software-based system that was hardware agnostic could offer such benefits. Understanding all of this, Campbell had eight requirements for KCTEW's new video wall system.

Kansas City Regional TEW Fusion Center's Eight Requirements for a Visualization Solution

1. Software based with the ability to use commodity displays and computers (hardware agnostic).
2. Easy and affordable to expand as needed (add new sources of content to display on the video walls).
3. Protect prior investments by reusing hardware from the former video distribution system.
4. Provide connectivity (and ease of installation) using conventional network cable rather than dedicated video cables.
5. In current use and highly recommended by other fusion centers and law enforcement organizations.
6. Knowledgeable reseller/integrator with excellent references from law enforcement.
7. Price falls within budget while meeting or exceeding requirements.
8. Finish install and begin use of system within two months.

> "I had to use commodity displays and computers because if something broke we could not afford to go out and replace it at proprietary prices," said Troy Campbell, IT Specialist and Cyber Threat Intelligence Program Director for KCTEW. "It had to be easily expandable. And that is probably one of the places where Hiperwall shines. If you want to add displays or new sources to the system, just buy any brand of displays and PCs along with Hiperwall licenses and there it is."

Solution

KCTEW selected Hiperwall software to power the fusion center's new video wall system. "Hiperwall fell within our budget yet exceeded all of our requirements," said Campbell.

The fusion center's Hiperwall system includes three video walls. The main video wall, located in the Security Operations Center, is a 3 x 2 display made up of 42-inch panels. A second video wall in the same room is a single 65-inch display. A third wall in the analysts' room is a 3 x 1 video wall of 42-inch panels.

Much of the existing hardware of KCTEW's former video system was reused in the new system—a benefit uniquely provided by a hardware-agnostic solution like Hiperwall. "We were told by our higher ups that we could not build another visualization system if we were just going to throw out our old system, which was expensive and only two years old," said Campbell. "Hiperwall helped us meet that requirement, unlike most other video wall systems on the market. Hiperwall offered the flexibility we were looking for that could serve us well on a long-term basis."

"One other important reason we chose Hiperwall was because of its simple architecture," said Campbell. "Hiperwall's architecture is amazingly flexible. The technology enables the video wall system to run using a network, a switch, regular computers and Ethernet cabling. The software sends all of the sources to the video wall.

This simple network infrastructure helped us avoid the whole issue of moving raw video feeds by running video cables throughout the building. Instead, we used our existing networks (TCP/IP), our existing switch and Hiperwall software to install the system, get it up and running, and gain access to each of our video and data feeds for display. Being able to use our existing, conventional network for the video wall system rather than running an extensive amount of video cabling enabled us to install the video wall system quickly and easily. We had to get the video wall system up and working within a two-month time period to fulfill a requirement of our grant, which funded the video wall system. We accomplished that goal by choosing Hiperwall. We could not have installed any other video wall system that met our requirements in that short amount of time."

Results

- KCTEW successfully used Hiperwall software to build a video wall system that can display all of the fusion center's visual intelligence, including:
- Custom software applications used by fusion centers, including those that enable intelligence sharing between fusion centers across state lines
- Live maps
- Live video feeds from the Kansas City Police Department as well as other counties
- Data and information available on every console, laptop or tablet in the building (that can run Java)
- Feeds from other agencies, such as law enforcement and fire, by installing Hiperwall Sender Nodes at the agencies and configuring a VPN to allow them to add visual intelligence to the KCTEW Hiperwall system
- "KCTEW has laptops configured to be used from the field if law enforcement personnel are deployed to support special activities (football games or special events). The police officers can be in the field, open up a laptop, hook it up to the Hiperwall system, and communicate and collaborate with our fusion center, and work to prevent and resolve any issues," said Campbell.

"We can put pretty much anything for display on Hiperwall," said Campbell. "I can't stop enumerating that because every day I can find something else to put on the system."

Hiperwall has benefitted KCTEW in four significant ways:

- **Enhanced Situational Awareness:** KCTEW uses Hiperwall to view multiple intelligence sources at the same time.
- Formation of a Common Operational Picture: The fusion center enables various agencies to work together using the same view of multiple sources of intelligence, which prevents interference between the agencies. If one group makes a change or takes action, the other groups can see what is going on. Having a common operational picture is an extremely important element during a response to a situation when multiple agencies are involved.
- **Improved Collaboration:** KCTEW's Hiperwall system displays multiple sources of visual intelligence at once so that decision makers from multiple agencies can gain situational awareness at the same time by viewing the same information. These individuals then discuss and work together to decide what actions to take. Not only do the decision makers collaborate in the main room using the sources of information displayed on the two Hiperwall video walls located there, but KCTEW's staff of analysts collaborate together in a separate room, viewing and discussing a large amount of visual intelligence as it comes in using the third Hiperwall video wall. The analysts decide which information should be presented to the decision makers in the main room, which is then placed on the wall by the video controller working the Hiperwall Control Node. "Having the ability to collaborate not just on a person by person basis by having a room full of people looking up and seeing what the situation is by viewing the Hiperwall video walls and being able to work together on that level is great, both for the decision makers and the analysts," said Campbell. In addition, Hiperwall displays custom applications that help KCTEW collaborate with other fusion centers. "We are constantly working with other fusion centers, and Hiperwall supports these efforts," said Campbell.
- **Facilitated Instruction:** The Kansas City fusion center often hosts conferences, continuing education and training labs on law enforcement and public safety topics. Hiperwall is used to facilitate these educational programs by displaying relevant information. "Being able to run several sources of training materials on a video wall for a room of people to see is really nice," said Campbell.

"One of the most impressive strengths of the Hiperwall system is its configurability and 'operator ease of use,'" said Campbell. "We have profiles set up (Hiperwall calls them 'environments') for several modes of operation or 'op states'. These include 'local event response,' 'national event response,' 'cyber events,' 'steady state,' exercises and in-house conference, etc.'"

"The steady state profile will have a few things we look at normally," continued Campbell. "If we are going to have a special event then we turn on a special event profile. If we have a local event, we turn on the local event profile and so on. A profile can be shown with a click of a button; it is one of the more advanced features of Hiperwall."

"While the situations and events vary, and whether the footage is taken from the air or on the ground, Hiperwall is always used for the same things: situational awareness, a common operational picture, and collaboration," said Campbell. "We've used Hiperwall for all of the local, regional and national events that have occurred since we purchased the system, including civil unrest response, domestic and international terrorism events, and World Series event support. We also provide national collaboration on cyber events."

"Having used Hiperwall since 2013, it is safe to say that there is no longer any way for us to accomplish our tasks without our Hiperwall video wall system," said Campbell. "Simply put, we've incorporated it into every facet of our operations. Hiperwall supports and enables the majority of what we do. It has the capacity to greatly increase collaboration and contribute to a regional and national common operational picture. We are thinking about how we will integrate our Hiperwall with other fusion centers that have or plan to acquire a Hiperwall (using Hiperwall Share Server). It is a force multiplier that enables us to provide an amazing impact with the resources we have."

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