

High-Tech Security at Port of Long Beach

Interviewee: Mike McMullen, Security Operations, Office Systems Analyst, Port of Long Beach

Mike McMullen, the security operations manager at the Port of Long Beach, talks to Activu about the new joint command and control center that was implemented in January 2009. Mr. McMullen was recruited to help define and develop the new center. The 28,000 square foot facility, which houses 10 million dollars worth of high-tech system equipment, is chartered with keeping the Port of Long Beach secure.

Could you begin by providing an overview about the Joint Command and Control Center at the Port of Long Beach?

The development of the new Joint Command and Control Center at the Port of Long Beach was a development project that spanned over five years. We officially broke ground in 2007 and the new building was turned over to us in Oct 2008. The security division moved in shortly after that in January 2009. So we haven't been here quite a

"[The new Joint Command Center with our visualization solution] has really made for a tighter "community watch" for the port that was not previously there." Cosmo Perrone, Director of Security for the Port of Long Beach, California

year yet. Our facility is a thirty million dollar structure full of high-tech security systems which keeps close watch on the Port. The building cost twenty million dollars and we've invested about ten million in the systems that reside inside the building, that doesn't include all the sensors that are in and around the Port. The twenty-eight thousand square foot structure is three stories high with a heliport on top. All of our business operations reside on the third floor with multiple agencies residing in the building including the Coast Guard, Customs and Boarder Protection, Harbor Patrol, L.A. and Long Beach police departments and Marine Exchange. Our Harbor Department performs all of the camera maintenance in the field, when it's required. We also have a very sophisticated commercial dive team with our own fifty foot boat and six full time divers on staff. These guys are diving in and around the Port every day. So from a day-to-day operational standpoint, it is a dynamic building with a lot of moving parts.

Can you easily integrate new software applications into the visualization solution?

Of course, we have no problem integrating new software applications into the existing system. When we originally installed the visualization solution, everyone thought it was just going to be for the wall in the command center. From our standpoint, that was never the intention. We intended to share information within the total scope of this building. There are eleven areas in this building where we have the ability to view and share content on a monitor, on an LCD screen, a video wall or an overhead projector. When we designed the system, we made sure that any digital signal, whether it be radar, sonar, video, amber alerts / port information signs, or TV stations, had the ability to be digitized and shared anywhere within the building. So when we came up with the solution that was the scope of work. As we've progressed and started to add additional sources, Activu has always been a line item to make sure that we can put that on the new system, on the grid as well.

Are your cameras IP video cameras?

They become IP cameras. We encode and decode at the edges. So we are an NR solution. We currently put our cameras over a 650Mb private wireless network and we're in the process of laying thirty-five miles of fiber. As we get to the camera locations, we're putting those cameras on our fiber so we have a redundant video feed. But currently, we take an analog camera, put an encoder at the end and digitize it. On the other side, it sends it down the wireless network and when it comes into our control center we send it through an encoder to make it analog again and then pipe it into our servers.

Is the Activu system streaming the videos?

The way we have Activu deployed is that Verint is integrated into the overall visualization solution. We have middleware software so operators don't have to learn to function the Verint system. It's important to know that we have nine systems currently running, we have purchased fourteen, and there are another four on the drawing board. So we have eighteen core systems coming in here. We didn't want to have to teach all the officers how to use all eighteen systems so we bought a middleware package to handle all the camera system. With Activu, we replicate all of the systems in their native form to the grid so that we can bypass all the different GUI's from an administrative standpoint. If executives want to see a number of cameras, they can just bring camera feed up on Activu, let it populate, and I can share it in any of the twelve locations throughout the building. So Activu is the portal that allows us to do that. It's an educational tool.

I imagine a lot of what's on the wall is video feed?

No, we have a lot of different content that we're posting to the wall in addition to our camera feed. For example, we are pulling and pushing content to the wall from an access control system that handles our badge and our alarm monitoring. We also have a military software package that tracks vessels throughout the port. We have VTS which is the official vessel tracking system for the port which comes from the Marine Exchange. We have 3 high-end video surveillance systems, a web portal where we share our video feeds with our tenants and they share their cameras with us, and we also have other things that go on the wall like our port information signs on the highway, an A.M. radio with a GUI to see what's being broadcast. There's a multitude of applications and we integrate all of them into the Activu visualization solution so it doesn't matter if you're in the executive conference room, in the department operations center or in a break room on the second floor. If you have a need to see any of that information, you can.

What is the size of your wall in the main command center?

We have twelve fifty inch cubes deployed in the command center. So it's a big wall.

What other agencies occupy the space within your building?

We have "stakeholders" which are tenants and partners within the building. Our partners include regulatory agencies like the Coast Guard, Customs and Border Protection, Marine Exchange, Port of Los Angeles Police, Long Beach Police, and Intelligence Officers. We also have tenants. They're the people that do business in the port, the SSA Marines, the total terminals by BP, they have land here. We are a landlord port so most of our large tenants are Coast Guard regulated; they have their own security plan,

their own security force. The Port and Harbor Patrol, with all the sensor systems, provides a safety net, an umbrella, to assist the overall port.

Can you give me an example of how you've improved communication, collaboration, and situational awareness with the new visualization solution?

Sure. I'll give you an example. On the third floor, we have a beautiful executive conference room that sits about twenty-five people. In that room, we have video conferencing capabilities through the Activu system. The video conferencing capabilities links to our department operations center which is on the 2nd floor and can be used externally or in the building. What that allows us to do is to give the policy decision makers a room where they don't impact the people that are working the operation. It allows us to separate them out and then it also allows the incident commander to walk into the command center room and use the tools there to create his emergency action plan for the event. So here you have activity going on in three separate rooms. But through the visual solution, now we are able to link all of that activity into a picture so they all have the same information. And that's a very powerful tool because all three of those activities have their own priorities and their own needs. In the past, you'd have to put them in a room together and then you'd have to fight over whose priority was number one. But now, they can all work on their own priorities simultaneously and they're just sharing that information and not getting in each other's way. That in itself is a powerful tool.

It has streamlined the way your teams work.

Yes, that is correct.

You mentioned that when you were evaluating systems, it was critical that you invest in an IP-based solution. Why was that so important to your organization?

We knew that we were going to be a dynamic building and we would always be evolving. Most of the visualization solutions out there are based on hard-wire cable. So, anytime you wanted to add something to the grid, you'd need to bring in a big crew and you'd have to pull wires, put in routers, and control boxes. It's a huge expense which involves equipment and intensive labor costs to make changes. The thing that we love about the Activu product is that when you need to add something, because it's an IP-based solution, is that you can easily integrate new hardware by using software. You just put it on the subnet LAN and you're done. That in itself saves someone like me or other project managers a lot of grief because now we can do something in a couple days which might have taken a couple of weeks to get resolved if it was not an IP-based solution.

So you can dynamically scale your system?

Yes. And for someone who is growing a system, I think it brings value. We paid a little bit more for licensing to ensure us that flexibility. But it has by far paid for itself as the system has grown. It has eliminated the cost we would have had to pay in labor and equipment charges to make all the changes that we've made. If you had a system that would never grow, there might be a more compelling story to stay with a non-IP based system. But I can't think of an organization that doesn't plan to grow a system like this. So I think it's important that you do put in an IP-based system that gives you that flexibility. When you make changes you don't have to invest in heavy infrastructure.

One of the new technologies that you have is facial recognition software. What other technologies like that have you integrated into the system?

Probably one that we are still learning about but is very impressive and unique is the SSR radar system. Some people think of radars as one that goes out and finds ships. But in a security environment and a port environment, most commercial ships have AIS tracking. It's an identifier on the ship that tells you the name of the ship, who owns the ship, and how big the ship it is. But recreational vessels and sightseeing vessels don't have this capability. Since we are a tried land trust port, our waterways are somewhat open to the public. Tracking the commercial vessels is easy but when you have a sail boat or motor boat, you don't know who they are. What SSR allows us to do is to temporarily assign them an ID so that they can be tracked while they're in the port.

Do they notify you as they're coming in?

No. That's the beautiful thing about the radar. When they enter the port into an area of interest we have the ability to track them or not. The software IDs the vessel, assigns them a temporary ID so we can watch them, and then it starts tracking them through the port. So at anytime, the operators can then just click on them and move a camera to watch them and monitor their activity. So right now, this software gives us the capability of starting that process without having to make the financial investment. It is a pretty neat piece of software. Also, we're going to be the first commercial port to put in a very robust underwater sonar detection system. We are putting a commercial head in the water with military software to give us more functionality. We'll be the first commercial port to have a robust system like that.

You mentioned you have a dive team. Are the routinely diving?

Yes. We have divers in the water five days a week, operating on a fifty foot boat. Those divers have the capability to send video, from underwater, to their boat, and back to the command center and it can be displayed by Activu on the wall. We can also send it to a website so managers can watch them underwater from their desktop and look at content that is being sent. We have a very robust system with a number of underwater, un-manned vehicles (ROVs) that have video and sonar capabilities. So we can put these submarine units down and have them identify things that might put a diver at risk. So it's good that we can put a machine down and not have to risk a diver.

Can you tell me a little bit about the pilot program, Transportation Worker Identification Program (TWIC), that the U.S. Department of Homeland Security (DHS) selected you to participate in?

It's a national program and we are one of five pilot sites. The TSA implemented a standard government ID badge that is required today for anyone who wants non-escorted privileges into a regulated facility. When we talk about regulated Coast Guard facilities we're really talking about our large tenants that process a lot of goods. Container terminals are regulated. All of our bulk processing sites ship anything from salt to coal, are regulated. All of our petroleum users are regulated. So if you want to work on that site or visit that site, you need have to have a TWIC credential. But it's only good if you can validate that the badge belongs to the person carrying it. What the Federal Government has said is that you have to have two ways to authenticate that process. A picture on a badge doesn't mean it's really you. So what they've done is taken a fingerprint template and put that on the badge as well. The pilot test is looking at readers that will allow you to use your badge as a proxy badge, validate you are who you're supposed to be and you're authorized to go into a particular facility. The port, under the pilot program, has put up millions of dollars for five of our tenants to deploy it across their site and test it for TSA. The pilot test is

currently going on right now. The port of Long Beach itself makes up sixty-five percent of the national test.

You are one the largest ports in the nation. Correct?

We are the second largest port with our neighbor, the Port of Los Angeles, being number one. They have a little more volume than we do. But we consider the whole complex, the Port of LA, the Port of Long Beach, the Port of San Pedro Bay. And it is by far, the largest port complex in the United States. It's a very dynamic port. To put it in perspective, when we were at our height about three years ago, the port had one billion dollars of commerce coming through the port daily. In our current economy, we have about six hundred and fifty million dollars a day. So it's a very important asset to the nation because almost all of the goods that come to us from Asia come through either the Port Long Beach or the Port of L.A., put on rail and shipped across the country.

What are some key accomplishments that you can share with me since deploying the new joint command and control center?

Our biggest accomplishment is that we have significantly enhanced our relationship with the Port's stakeholders. If you think about it, before we had our joint command center and all the systems in it, we didn't have a venue that could make our tenants and regulatory partners comfortable under one roof. So having this building, having this visualization solution that allows us to share what we do with all those parties has really solidified our relationship with the stakeholders. It might not sound important, but by bringing us all together physically and from a technical standpoint, there's more trust. Now the regulatory agencies share more information, the tenants are not afraid to engage us in projects or with information as well. So it has really made for a tighter "community watch" for the port that was not there before. That is our biggest accomplishment. The technology allows you to bring all parties together and that has really been the icing on the cake for us.