

Case Study

Port Freeport

One of the fastest growing ports on the Gulf Coast invests in the latest IP video surveillance technology to monitor incoming cargo ships and secure the water-side perimeter



Over 100 years ago, Port Freeport came into being when the first jetty system was built in Freeport, Texas. Since that time, the Port has become one of the fastest growing ports on the Gulf Coast, and is currently ranked as the 16th largest port in the United States in terms of foreign tonnage. Located just three miles from deep water, Port Freeport is also one of the most accessible ports on the Gulf Coast and the 400-foot-wide, 45-foot-deep channel ensures a fast, safe turnaround for many cargo ships.

Business challenge

With massive cargo ships coming into the port daily from Brazil, China, Colombia, Costa Rica, Mexico, Venezuela and many more, and employing well over 13,000 people, Port Freeport uses video surveillance technology to ensure the safety of its employees as well as to ensure the smooth execution of daily operations. More so, as one of the fastest growing ports on the Gulf Coast, Port Freeport is in constant surveillance of incoming threats from the water perimeter.

Port Freeport had previously installed an analog-based video surveillance system, but as years passed and the port expanded, their requirements for newer technology such as vessel tracking through a radar system became a necessity. Unfortunately, the outdated functionalities of their existing system denied them the ability to fully integrate this newer technology, as well as forbid them from further custom development with other solutions that they were prospecting.

Port Freeport was also looking to incorporate some additional wireless cameras into their system and had concerns about the video quality that would be produced from their dated video surveillance system. Ultimately, they knew they needed to start looking at the latest advancements in IP video surveillance technology, so they entrusted LANAIR Group, a leading system integration company based in Los Angeles, California, and with an office in Dallas, Texas, to propose a solution that would fulfill all their integration requirements.

Port Freeport security needs

Massive cargo ships come into the port daily from countries such as Brazil, China, Colombia, Costa Rica, Mexico, Venezuela and many more.

When millions of dollars of cargo are at stake and a country's water perimeter is susceptible to potential dangers via both land and sea,

a decision to purchase and install a new video surveillance solution is a process that involves scrutinizing every last detail about requirements versus solution capabilities. It was Rick Benavidez, Director of Safety and Security at Port Freeport who was in charge of selecting a product that would help fulfill their security needs today, and well within the future.

“Really, the requirements were simple. We were looking for a more advanced IP-based system that would allow the integration with our vessel-radar system, and also offer us the possibility to grow the system as we move forward. We left it up to LANAIR Group to make the recommendation,” said Mr. Benavidez.

In typical port applications, it is common to find that the radar system acts independently from the video surveillance system, having operators respond to incoming vessels by manually prompting the water-side cameras that are deemed closest to validate the vessel in question. Port Freeport on the other hand had bigger plans. Ideally, Port Freeport wanted a new system that

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would allow them to automate the camera prompt when a vessel was detected in their security zone via the radar system. Their main objective was to leverage both technologies' strengths as well as to facilitate and streamline the decisionmaking process for all operators at the port.

In order to accomplish this objective, Port Freeport needed an open-architecture system that would offer highly developed integration capabilities, possibly through an advanced software development kit (SDK). They were also looking for a technologically mature video surveillance solution that would enable them to incorporate more wireless camera technology and expand their camera count in the future with ease. Finally, seeing as the Port was growing rapidly in size, they had to ensure that the new video surveillance solution would be one that was scalable and could accommodate their growing needs.

It was then that Vice President and Managing Partner at LANAIR, Mr. Steve Rogers, proposed Genetec's IP video surveillance solution, Omnicast, and Mr. Benavidez was more than confident that they had found the right solution for Port Freeport.

The perfect solution

"One of the main reasons for going with Genetec was the openness and maturity of the SDK," said Mr. Rogers. "Genetec's SDK gave us the ability to program some of the functionalities that the other systems did not offer."

To add to Port Freeport's enhanced security, some new wirelessly-connected cameras were installed on radar towers a couple miles out from the port.

With a system comprising of a little more than 40 Pelco cameras placed throughout the landside and waterside of the port, this reason amongst others gave Port Freeport exactly what they had been searching for in their new video surveillance solution. First and foremost, the custom code for the integration was written by LANAIR and in less than a month, Omnicast and the radar system were fully integrated.

On the radar system, there is a line of demarcation and when a vessel is detected as heading towards the line, it turns yellow. If the vessel continues in the same direction, the line turns red, and the radar system sends an alarm to the operators while prompting the cameras closest to the ship in Omnicast. The radar system will even continue to toggle video feeds from cameras alongside the vessel as it moves closer to the port.

"We get an AIS [alarm indication signal], a camera view and we can determine right away whether or not it is a coastguard, pilot, people that are authorized to enter or not," said Mr. Benavidez. "If it's a shrimp boat, we need to get out there and take action. Now, we can respond to situations more quickly and effectively, especially on the waterside."

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To add to their enhanced waterside security, some new wirelessly-connected cameras were installed on radar towers a couple miles out from the port, where incoming vessels into the Federal Channel could be tracked. With no direct connectivity due to distance and topography, the Pelco cameras were installed with point-to-point wireless encoders and receivers which facilitated the communication with Omnicast. Having the cameras in place, Port Freeport's initial concerns about video quality vanished using Omnicast. "We are very happy with our Pelco cameras and Omnicast video system," said Mr. Benavidez. "We have a lot of wirelessly-connected cameras, and pictures and colours are clear and crisp. There is no degradation in image and it far surpassed my expectations for wireless technology."

More than what they originally expected, Port Freeport also leveraged other intuitive features in Omnicast such as remote access and motion detection. Using Omnicast's Gateway server, LANAIR assisted Port Freeport in firewalling any intrusion into the closed and secure network where the system is running, and then used the Web Client to re-distribute video feeds out to end-users outside the port so that they could access the cameras via the web. The benefits of this feature are evidently supported by the following statement made by Mr. Benavidez: "During hurricane Ike, from a remote location, I was able to access the cameras system via my wireless client, and move the cameras to see what was going on."





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Similarly, the Port has set motion detection rules during times of the day when no movement should be detected within a video frame. They have pre-set event alarms so that operators do not have to worry about those areas of the port unless an alarm is activated.

Re-iterating the fact that Genetec's video surveillance solution, Omnicast, was a perfect fit for Port Freeport, Mr. Benavidez had the following to say: "We are really happy with the solution. We know fully that it is expandable and we feel that we have the right engine to move forward with the future growth plans when they do arise."

Omicast has also helped with after-the-fact investigations when a theft claim has been made by one of the Port's clients.

The benefits

Other than monitoring the expansive grounds and incoming vessels at the port, operators at Port Freeport are also using the Omnicast system for so many more applications, and the benefits have been endless.

Although the port is monitored around the clock, the archiving feature of Omnicast has also helped with after-the-fact investigations after a theft claim has been made by one of the Port's clients.

"In comparison to the older system, the clarity of images, the intuitiveness, ease of use of Omnicast's Archive Player have been the most tangible benefits for us," claims Mr. Benavidez.

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The remote access feature has also come in handy for system maintenance, as LANAIR is able to remotely tap into the Omnicast system and do any type of maintenance that is deemed necessary. This provides Port Freeport with ultimate peace of mind, knowing that their system will be running smoothly at all times, and that the support they need is just a click of a mouse button away. Various other municipal partners such as the water district have also been able to use Omnicast's Webclient, allowing for all partners to benefit from shared information in case of emergencies.

Finally, with the vessel-radar system in place, Port Freeport has plans to continue pushing the bar in terms of technological advancements for security at the port. For added security and underwater monitoring, they are looking to incorporate sonar technology into the entire solution. This means that Omnicast will be fully integrated with a radar system and sonar system for full physical and water-perimeter security.

Thanks to Omnicast and with all these new technologies in place, Port Freeport is truly living by its motto: "The Coast is Clear."

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