

Tropical surveillance across Hawaii's archipelago.

Setting a foundation with Axis cameras to secure the complex shores of Hawaii.



Organization:

State of Hawaii

Location:

Hawaii, USA

Industry segment:

Government

Application:

Harbor surveillance, remote monitoring, emergency response

Axis partner:

Genetec, Milestone

Mission

Needing a surveillance solution over the countless harbors and critical sites in Hawaii, Hawaiya Technologies, Inc. was awarded a Homeland Security grant to build a system providing maritime coverage across its six main inhabited islands. Before this time, there was no coordinated or inter-island surveillance available to any government or privately licensed entities. Hawaiya set out to coordinate a large system that could provide important monitoring and management capabilities for a vast amount of safety-first environments across the state.

Solution

Hawaiya established two key components to their system that oversee a selection of harbors and critical infrastructure sites, all with Axis cameras. Their first step was to synchronize the installation of the proper hardware in each location, including all cameras and radios.

From there, wireless networking was set up to loop the individual harbors into an overarching and easily accessible network. Finally, each harbor was customized from a technical perspective, as the engineers mapped out the spaces with each camera to determine the best and most efficient overall security solution.

Result

With the initial goal to invest in the long-term infrastructure of a comprehensive security and surveillance system, Hawaiya has continued to incorporate new technologies and upgrade the system's architecture as time and conditions have permitted. The functional capabilities of such a thorough system were built to be scalable and expandable with hopes of incorporating statewide surveillance down the road. As a unique island territory dealing with rare environment and situational dilemmas not seen among any of the other 49 states, Hawaiya has specified unprecedented observation measures that will bring the state of Hawaii streamlined success for the foreseeable future.



Securing and protecting the State of Hawaii

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An initial simple system of a basic radar, camera and AIS VHF radio was set in place at the small harbor of Kewalo, the port of entry for all foreign flag fishing vessels, to provide surveillance of vessels when no workers or border control staff were on site. Dealing with further issues at additional harbors across the state, it was noted that a larger system could provide important monitoring and management capabilities. Harbors dealt with boats running aground and damaging reefs, illegal dumping of hazardous waste and vessels coming in during off-peak weekend hours without paying docking fees.

Broken down into two main facets, Hawaiya has established an overarching surveillance system found in all commercial harbors on the five principal islands as well as an arrangement that provides protection to critical infrastructure across the state.

Keeping eyes on the islands

Honolulu Harbor, the largest of the harbors across Hawaii and the home to the primary command center at Pier 2, started with 10 cameras onsite covering the port area along with two radars. That space includes the Capitol and the financial district in Honolulu, as the distinct value of this location is evident with practically all supplies coming through this harbor that are needed across the state to survive. The Aloha Tower originally housed watchmen with binoculars but now is home to an additional mobile command center. Cameras make the transitions much smoother with a multiform system in place of rotating vessels at high turnover rates.

The command center at Pier 2 consists of nine 42-inch big screen monitors, with three more to be added, and comfortably holds 15-20 people. It is monitored 24/7 by a security guard company working for the harbor police and cultivates communication with all of the harbors and harbor police units. This hub has access to all of the cameras in the system and keeps in touch with all harbor operations. With the heavy influx of information, the center works through both the state's internet and intranet networks. The center's computers run on Milestone XProtect Corporate, important for the diverse locations across the ocean dealing with unpredictable connections and varying system needs and conditions.

As some of the individual harbors are only serviced during working hours, additional surveillance units were needed to keep an eye on sites during off-peak hours. Hawaiya built mobile command centers, each consisting of two monitors and a server, to solve this issue.

Reliability in video surveillance

With 215 cameras across 18 harbors and critical infrastructure sites along with a selection of public properties, the distribution of the Axis network cameras varies from just a couple up to 15 at any individual location. Using point-to-point C band Proxim radios, the entirely IP-based system works to distribute surveillance to all locations on the islands, while stored centrally at Pier 2 in the Honolulu Harbor.

"The end goal is having all these very remote locations and so many areas able to be networked in the end and be deployed in so many different locations," Chang added. "And it could not be done with the analog cameras."





“Axis has been the most responsive and has provided the most user-friendly training that we’ve ever gotten. The training that Axis brings is making a huge difference. We invited a number of outside participants to join and we were getting calls right after that for products, and Axis is very responsive in providing for them.”

Paul Schultz, President and CEO of Hawaiya Technologies, Inc.



Hawaiya specified AXIS Q6044-E PTZ Dome Network Cameras for their HD-quality recording capabilities along with a few AXIS Q6000-E PTZ Dome Network Cameras for 360-degree views. With multiple government entities requesting and using footage from the cameras, the HD-quality video is important in transferring the highest-caliber quality files without any resolution changes. The PTZ functionalities allow them to have effective surveillance without hundreds of fixed cameras. They are being set up anywhere from 20 to 120 feet in the air, giving a widespread field of view. Many are set to perform guard tours as well, functioning as scheduled scans of specific areas periodically.

To map out the selection of these cameras, Hawaiya utilized Axis system design tools to select the proper products for each unique environment. “We have begun using the really outstanding tools that Axis has developed for planning and identifying the appropriate cameras to be used in any given area,” noted Paul Schultz, President and CEO of Hawaiya Technologies, Inc. “It has been a significant help in planning some of our more complex installations.”

AXIS P3364-LVE Network Cameras were installed at many of the critical infrastructure sites to deliver effective footage in low light. The AXIS P3364-LVEs also contain Axis’ Lightfinder technology that allows the video to maintain consistent color in poor lighting conditions.

“These are critical infrastructure sites that we don’t necessarily want to advertise how important they are,” Schultz shared. “As soon as you put a high power

illumination up, you’ve got this facility that’s lit up like a stadium out in the middle of nowhere and that would draw attention right away.”

With all of the weather and environment-related difficulties that arise being near heavy-trafficked ocean, such as powerful hurricanes and flash flooding, Hawaiya has seen significant durability in all of these cameras over long periods of time. “We have not had a single failure of an Axis camera that was caused by the marine environment, not a single failure,” Schultz declared.

Projecting the future

Hawaiya is planning out the final steps to integrate all of these moving parts across the state. “We’ll have real time information on damage to the ports from hurricanes and storms,” noted Dolores Cook, Head of the Grants Management Office, Hawaii State DOD. “We’ll be able to tell you right away to move your ships and boats out of the way of the harbor. When we had the tsunami in 2011, we knew exactly where it was going to hit and how much the water was going to rise.”

The functional capabilities of such a thorough system were built to be scalable and expandable with hopes of incorporating statewide surveillance down the road. As a unique island territory dealing with rare environment and situational dilemmas not seen among any of the other 49 states, Hawaiya has defined unprecedented observation measures that will bring the state of Hawaii streamlined success for the foreseeable future.

“I think everybody is excited to have it in place,” Dr. Delaney said. “The improved security provides a real peace of mind.”



About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the global market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform - delivering high value to customers through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 2,000 dedicated employees in more than 40 countries around the world, supported by a network of over 75,000 partners across 179 countries. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ Stockholm under the ticker AXIS.

For more information about Axis, please visit our website www.axis.com.