

Axis & Elecom camera system tested at sea.

Surveillance solution ideal for the toughest marine environments.



Organization:

Polish Navy

Location:

Gdańsk, Poland

Industry segment:

Transportation

Application:

Safety and security

Axis partner:

Elecom

Mission

Marine vessels need complex surveillance systems that not only meet the highest quality requirements, but also work seamlessly with other systems, including safety and fire systems. The solutions used must be resistant to water mist with high salinity and all impacts and vibrations. An additional difficulty is to adapt the equipment to high temperature amplitudes. Their task is to provide the ship-owner with a reliable image in real time as foundation for advanced surveillance systems on passenger, merchant and offshore ships as well as warships.

Solution

Elecom installed on a special vessel (cable layer) a CCTV camera surveillance system, which at the same time integrated various security systems. Its specificity is a large number of viewing points and high control capabilities. A hybrid solution combining both analogue cameras from other vendors and Axis IP cameras.

Elecom also used stainless steel housings for cameras with built-in illuminators, which additionally protected the devices against weather conditions.

Result

The applied solutions enabled the ship-owner to observe the ship's operation in real time from land, regardless of the weather conditions prevailing at sea. For video analysis, the company uses internal software of Axis cameras. In addition, the system is used to help in navigation of large vessels.

“When it comes to vessel monitoring systems in the naval fleet, we take into consideration Axis IP-cameras in particular. Unlike their cheaper counterparts, they guarantee image transmission in the most difficult weather conditions.”

Wojciech Brutel, Production Manager at Elecom Sp. z o.o.

A branch of extreme requirements

The requirements that must be met by equipment used in the marine industry are among the highest. The often extreme conditions at sea require surveillance systems to withstand many factors. One of these is extreme temperatures. The same vessel can operate in both the Arctic and tropical seas. The specifications specify a temperature range from -50°C to $+60^{\circ}$. The equipment must also resist salt water and all impacts and vibrations. In addition to the weather requirements, there are also the requirements of the advanced technological systems used today in fleets of all types. Surveillance systems must be integrated with other systems, including satellite navigation, security, fire, video analysis and other systems.

Special purpose vessels

Elecom, a producer of surveillance systems for military, merchant and passenger ships, provides solutions for special purpose vessels, among others. It provided the surveillance system to a cable layer that laid the cable on the seabed. The ship-owner required real-time monitoring, so that the progress of work on the vessels could be assessed on an ongoing basis. A hybrid system was used, combining mainly Axis IP cameras, analogue cameras from another manufacturer and Axis decoders, which enabled efficient transmission of image to the network and storage. It would be possible to use just Axis IP cameras itself for real time monitoring, however, the ship-owner provides independent servers dedicated for the surveillance system. The cable layer has been equipped with AXIS P39 Network Cameras, which are particularly resistant to harsh conditions. AXIS P3915 models are especially suitable for the toughest weather conditions and are resistant to all types of vibrations and impacts. They perform well even under low light conditions. In the case of the cable layer, the cameras were also equipped with an Elecom white light illuminator, which allowed clear image to be read from a distance of up to 100 meters. AXIS P3915 also features an input and output port, giving you the added ability to turn other devices on and off under certain conditions.

Each camera in the system is housed in a weather-resistant S316L stainless steel housing. In addition, to ensure sharp images, the housings are also equipped with wipers.

Warships

CCTV systems based on Axis & Elecom products are also used on military units. In such cases, they must be made in a manner that ensures the security of military property, people and missions. The Elecom Polish Eagle WB 4.0 military CCTV systems have been successfully used on ships for many years. They have been installed, among others, on the most modern newly-built mine destroyers: ORP Kormoran, ORP Albatros, ORP Mewa; six new Navy tug vessels: ORP Bolko, ORP Gniewko, ORP Mieszko, ORP Semko, ORP Leszko, ORP Przemko, as well as on many repaired ships of the Navy. Such systems have been tested not only for high maritime requirements, but also for military class, including increased requirements for impact and vibration and compliance with Polish defence standards. They are prepared for extreme combat conditions and must be integrated with other systems (e.g. alarm burglary system or ship's monitoring and automation system).

Safety first and foremost

According to Wojciech Brutel from Elecom, sea conditions quickly verify the quality of the technological solutions applied. The use of inappropriate cameras in conditions such as saltwater, rain or mist can damage the whole surveillance system. The system has to be absolutely faultless. Axis & Elecom solutions have already been tested in many marine projects. Although they are not among the cheapest per unit, the total system costs are lower in final result. The video streams transmitted by Axis devices has low bit rate, which is of great importance to lower the storage capacity leading into reducing the costs for data transitions over satellite, confirms Wojciech Brutel. The smooth application also reduces the installation costs. The wide range of Axis cameras combined with Elecom solutions guarantee success in CCTV system projects in demanding maritime conditions.



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