

# CASE STUDY

## MEGA YACHT SECURITY

### > Overview

**Customer:** Mega Yacht owners anywhere in the world

**Challenge:** Protect a mega yacht against a myriad of unknown threats including small crafts, RIBs, jet skis, swimmers, divers, unmanned aerial vehicles and more – Provide a 24/7 imagery and long-range surveillance up to the horizon – Easy integration with other security and facility systems including a Video Management System (VMS), a Pan Tilt Zoom (PTZ) camera and a long-range acoustic device (LRAD)

**Solution:** HGH Spynel thermal camera provides a cost-effective and preventive surveillance solution, with limited infrastructure to ensure accurate security of the mega yacht.

**Results:** Detect, Track & Classify in real-time multiple threats ranging over several kilometers on a full 360-degree panorama

**Conclusion:** HGH Spynel thermal cameras are the solution of choice for maritime wide area surveillance.

### > Customer

HGH Infrared Systems equipped a mega yacht with a SPYNEL thermal camera, which was part of a complete security system of the boat.

For the mega yacht owner, it has become crucial to **upgrade its yacht with the latest maritime security technologies** to turn it as a self-contained safe house. Whilst the choice is large in terms of maritime security solutions, the SPYNEL thermal cameras meets the client's requirements in terms of **preventive detection and identification of any types of threats, at long-range distance.**

*"We need not only the best situational awareness of the sea, but we need to detect, identify and evaluate any threat or obstacle, providing the captain with the time to make a potentially lifesaving decision", said the client.*



Cyclope GUI for long range panoramic surveillance

### > Challenge

Private mega yacht owners with luxury floating assets have become soft targets for piracy and international terrorism. **Modern threats come in all shapes and sizes, including divers, swimmers, RIBs, UAVs**, which are currently not detectable by conventional security equipments such as radars.

Early detection is the key to preventing successful attacks on mega yachts. True security means stopping a threat by detecting pirates or terrorists as early as possible, before they are too close to the mega yacht as well as being effective 24/7, night and day, even in adverse weather conditions.

Part of the complete surveillance equipment of the mega yacht, the thermal imaging sensor should provide an easy integration with the other security and facility systems installed on board.

Traditional security devices commonly employed for maritime surveillance (such as CCTV cameras, electronic intrusion detection or radars) are effective solutions for specific usages. **The SPYNEL thermal cameras come with a bundle of advantages within one single sensor providing early panoramic detection, real-time tracking & classification and video recording of any threats or objects.** It can be used at sea during navigation but also at port or near the coast, night and day.

## > Solution

A Spynel-S was installed on top of the mega yacht's mast. Spynel-S provides a long-range distance surveillance up to 12km far for RIB and 6km for a human. The SPYNEL technology provides a full panoramic wide area surveillance that makes it a preventive solution to support proactive security decisions. With its real-time visualization, **Spynel-S is able to detect and track multiple threats at the same time. Mounted onto an autonomous gyro-stabilized platform**, Spynel successfully operates at sea state level 5/6 coming with a sea-specific image processing stabilization.

Spynel is part of a complete surveillance equipment including a PTZ camera and a LRAD device. All these devices were driven by the Cyclope's software, featuring a global monitoring and supervision of the security system. When a threat is detected by the Spynel-S, Cyclope is used to steer the PTZ allowing a precise identification and then orient the LRAD in the direction of the threat to send warning messages.

The new deep learning Artificial Intelligence module integrated in Cyclope enables automatic classification of any approaching threat.

In addition, **the alarm management module** of Cyclope software provides new advanced capabilities to distinguish abnormal behavior of a target and trigger appropriate alarms.

Ultimately, **thermal imaging on a yacht provides increased range at night** without the need of lighting. SPYNEL is also used as an assistance device for night navigation by the captain. The complete solution including HGH Spynel sensor and Cyclope software has been designed for a **quick and easy handling by the security crew**.

## > Results

The customer chose the HGH Spynel thermal security camera as their mega yacht's surveillance solution for real-time detection and tracking of any threats even very small, **undetectable by any other security devices**.

## > Conclusion

SPYNEL has become part of the **must-have security equipment of mega yachts**. With its 24/7 and large area surveillance capabilities, SPYNEL thermal camera can detect, track and record an unlimited number of threats or objects up to the horizon.



Maritime target classification with CYCLOPE Artificial Intelligence module

Robust, compact and fully passive, the HGH SPYNEL cameras can be used both as a standalone surveillance system or be part of a complete surveillance solution.

The SPYNEL thermal sensor is the **ultimate solution to face increased piracy threats around the world**, including many popular ports in the Caribbean, off the coast of Florida, the Mediterranean, Mexico, South Pacific, Singapore, Maldives, Africa, Gulf of Suez, Oman, Aden or the Arabic Sea.



RHIB detected and tracked by Cyclope software



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