



# Flying Eye

Does Air Surveillance continue to be a helicopters domain? Toni Ganzmann is convinced that TrixyEye is a serious competitor.

## **The mission:**

Surveillance of an assigned area, detection and documentation of land and ship traffic as well as oil pollution. The realisation: the tasked aircraft covers systematically a grid square at 60 knots velocity and 3000 feet altitude - even above cloud cover and at night.

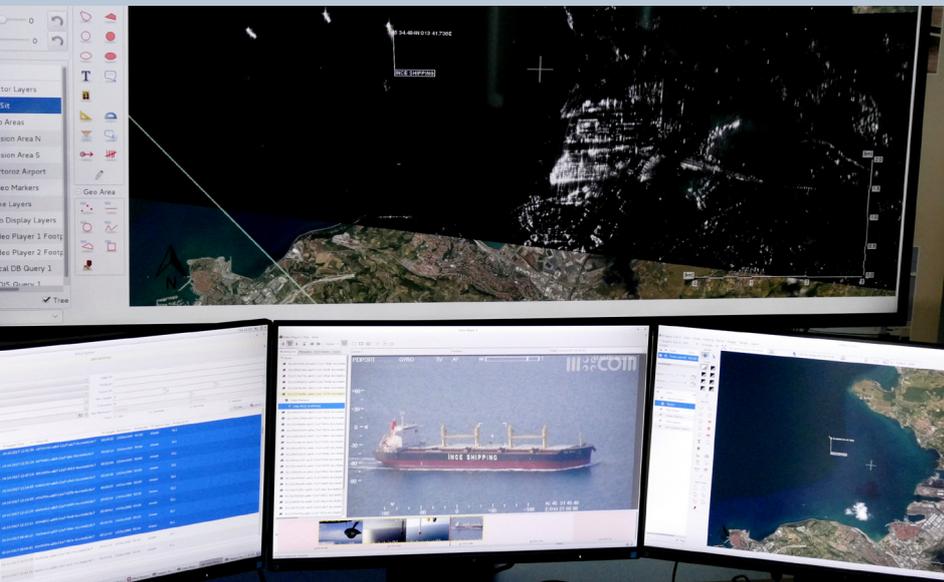
On request, the operator at the ground station instructs a new course in order to perform an interleaved detection/identification task. Usually such missions are helicopter domains - but now they face serious competition with availability of TrixyEye. The gyrocopter of the Slovenian manufacturer Trixy Aviation has a maximum take-off weight of 560 kg and has been reinforced in order to withstand. The Gyro is powered by an engine based on the rotaxmotor 912 ULS which produces 150 hp continues power after modification. This achieved by a special crank shaft, ceramic coated pistons, a Garrett-turbocharger with intercooler and an electronic injection system. At a cruising speed of 125 km/h TrixyEye only 18,5 l fuel per hour and can perform a mission of five hours fully equipped. An infrared based night flight avionic system ensures the operation even under restricted visibility.



An all-weather radar, which can detect oil spills and a high resolution video camera with two controllable axes are part of the surveillance sensors



The sensors are controlled from a ground station so that the pilot in his cockpit can concentrate on flying/operating the aircraft



Continuous datalink connection between Gyrocopter and command center allows immediate reaction on incoming information from the sensors



The concept has already convinced institutional and military consumers

## Convincing overall system

The gyro is equipped with a newly developed image radar system from RST Radar Systemtechnik GmbH located in Salem at Lake Constance. It works without moving antennas at a resolution of five metres and is able to scan up to 40 km on both sides without loss of sensitivity at far range. At a speed of 100 km/h above ground, 4000 square kilometres can be monitored per hour. In addition, technology of this all-weather radar is able to detect oil spills.

The high resolution pictures which are required for a detailed target interpretation are generated by a four-axes stabilised video camera of Peiport Industries, also features an infrared sensor and laser target tracking. Via remote control it can be rotated 360 degrees horizontally and 120 degrees vertically. For a close range reconnaissance in sensitive areas up to four drones can be released during flight and be controlled remotely from the aircraft by an operator. Therefore during this process a constant radio data connection between aircraft and ground station is maintained. Up to a distance of 200 kilometres, the ground station can control the sensors and process, visualise and evaluate simultaneously all radar- and video data in duplex mode. The components for uplink and downlink, the evaluation of the multi sensor data and true mapping image, radar and video presentation is provided by M4Com System also located in Salem at Lake Constance.

Manned Airborne Real-time Surveillance and Observation, abbreviated to MARSO, is the official name for the overall system that sets new technological standards due to its size, weight and reconnaissance capabilities.

With this innovation, Trixy Aviation demonstrates that gyrocopters, which up to now are mainly perceived as only air sport equipment, can carry out sovereign surveillance tasks if modified professionally in close collaboration with specialists. In Comparison to helicopters, its outstanding price performance quality ratio - with a factor 10 difference - has already convinced official and military consumers.