AMASS AUTONOMOUS MARITIME SURVEILLANCE SYSTEM

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Illegal immigration by sea has become a major headache in recent years. In fact, EU member states detected more than 48,000 cases in 2007 alone (source: Frontex annual report). It is difficult to monitor – and is dangerous, often ending in tragedy. Other criminal activities, such as drug smuggling and terrorism, are also harder to police at sea. In short, controlling blue borders is a complex and costly challenge. Until now, border agencies have relied on ships, planes or helicopters to patrol and protect coastlines. But this approach is not completely reliable – and is a drain on vital resources such as money and manpower. That's why the EU is seeking a more effective response to the challenge.

Now, Carl Zeiss Optronics is leading the development of a new, groundbreaking solution for monitoring maritime borders: AMASS – the Autonomous Maritime Surveillance System. Commissioned in 2008, the initiative is partially funded by the EU, and has seen Carl Zeiss team up with nine technology specialists and border agencies from across Europe – including Instituto Canario de Ciencias Marinas (ICCM) from the Canarian government and the Armed Forces of Malta (AFM) as a final users of the system.

In a trailblazing project, the EU-backed consortium is creating an innovative system to enable the early detection and location of small and midsize vessels. The aim? To provide authorities with early warning of illegal activities at sea and improve overall protection of European shores.

The AMASS system comprises a network of unmanned platforms (moored buoys) located a considerable distance from shore. Each autonomous platform is fitted with cutting-edge sensors (optical and acoustic modules) and operates self-sufficiently (power system based on solar, wind and fuel-cells), i.e. without the need for manual intervention. Data captured by the sensors is transmitted to a central command centre, where an operator views it on screen. If a suspicious entity is detected, a crew can be dispatched to investigate or other action taken.

The leading-edge technology behind AMASS provides reliable, 24/7 surveillance – giving border agencies the early, accurate warnings they need. The optical sensors offer a 360-degree view of the area above water – significantly improving situational awareness for coast patrols. What's more, the platforms remain fully functional in all weather conditions. AMASS is also significantly more economical to operate than patrol ships, and frees up human resources for other tasks – providing an all-round more cost-efficient solution. But most importantly, AMASS helps border agencies protect their own personnel and save the lives of immigrants. The upshot? Safer, more secure European coastlines.