Real Time Rescue

SCI-TECH SYSTEMS

Personal GNSS Tracker

When considering safety at sea, rescuing boat crew members fallen overboard is fraught with difficulty. Handling a boat and returning to a position near enough to the casualty to get visual contact in bad weather conditions, while dealing with the stress of the emergency, is obviously a situation most seamen hope never to experience. Existing electronic systems that assist with this type of emergency raise an alarm on the boat, or focus on alerting shore-based or remote rescue services.

The POB (Person Overboard) System is different, in that after raising the alarm, it guides the remaining crew on board back to the casualty. It uses the boat's own familiar navigation equipment – there is nothing new to learn, no time-consuming hesitation and uncertainty. It enables localised rescue by the casualty's own boat, or by any boat nearby fitted with the system.

The system is comprised of two components: the Crew Unit and the Ship Unit. The casualty wears the Crew Unit, which can track position in real time, using a GNSS receiver. This is transmitted back to the Ship Unit, which feeds into the boat's navigation systems. The embedded software deals with cold start for the Crew Unit, loss of signals, and intelligently manages transmissions between the casualty and the boat, to ensure the position gets through, and to conserve power (in the case of the Crew Unit). It also handles multiple casualties.

The accuracy of both the boat and the casualty's position is critical, since rescue will usually be attempted in bad weather, possibly at night, with little or no visual contact to the casualty. Use of EGNOS is considered essential.

The system will be targeted at commercial fishing boats, merchant shipping, offshore exploration (oil rigs) and passenger vessels, and subsequently the leisure market.

Proof of concept with a basic prototype has been achieved, and the next step is to build a pre-production level prototype. This will enable extensive real-life tests to be carried out. We wish to involve organisations dedicated to safety in this process.

After realisation, we see this project evolving into mobile tracking, and land based rescue working with the Galileo Search and Rescue capability.