

No excuse for connectivity blind spots on today's ships

HEALTH AND SAFETY

Embracing digital and data to improve crew safety

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The maritime industry is a vital contributor to global trade, carrying approximately 90% of traded goods around the world today, with freight demand forecasted to triple by 2050. Yet the industry continues to lag in digital innovation to enhance safety, health and productivity on board merchant vessels.

One particularly frustrating challenge is that vessels' steel walls prevent connectivity between the bridge and crewmembers. Between 2014 and 2019, 19,418 incidents were recorded on board ships, and 496 lives were lost, of which 88% were crewmembers. A total of 70% of all accidents occur in areas where there is no connectivity or other means to contact crewmembers.

With crewmembers working across 20 to 30 different levels on a standard merchant vessel, improving connectivity at all times is crucial to enhance the safety and wellbeing of the crew, and improve vessel performance.

Sealution's answer is the creation of the Crew Safety System (CSS), a network of IoT devices that collect and process data on the vessel's crew and environment, and feed it to a central database to gain an accurate overview of processes, performances and irregularities on board. The system comprises three key elements: a smart bracelet, room modules and a central module.



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Bright as a button

Comparable to a smartwatch, the smart bracelet allows crewmembers to alert the bridge of an incident by clicking a single button to send out a distress signal. Similar to the BNWAS system on the bridge, an 'unresponsive alarm' is triggered when wearers fail to send a safety confirmation every 15 minutes, notifying the bridge about a crewmember's possible unconscious state.

Furthermore, by tracking crewmembers' real-time location, the time between incident and assistance can be significantly reduced from an average of eight hours to just 15 minutes. Captains are also able to muster a specific crewmember or full crew to the muster station for training or emergency purposes, where those present will be automatically counted by the system.

To enable this data generation, the smart bracelet is wirelessly

connected with room modules. The room module functions as a signal transmitter and receiver that enables the exchange of data between the IoT devices – in this case, the smart bracelet and central module.

The central module is the brain of CSS. Similar to the room module, it is a transmitter and receiver, but differs in that it is required to receive and process signals from multiple room modules simultaneously.

The module analyses and ranks the data by relevance and passes it to a server for visual representation on the bridge. It allows the captain to understand what's going on with their crew and ship at all times.

Effectively adopting IoT solutions is a crucial step for the maritime industry towards improving its digital and data capabilities to ensure the wellbeing and safety of crewmembers and enhance on-board productivity.

Systems such as CSS are easily installed by on-board crew, and enable the maritime industry to transform traditional ships into smart ships, introducing much-needed digital innovation to the industry – simply by wearing a bracelet. ■