

Riding the Wave of Rapid Digital Transformation

The maritime industry is embracing connectivity. Today 'being connected' is an expectation and fundamental to how ships operate. Increasing amounts of data are now being recorded and transferred to shore to meet stringent environmental regulations and improve operational efficiencies, while crew communications are crucial to the recruitment, retention and wellbeing of seafarers.

The satcom industry is reacting fast to this rising demand and IEC Telecom Group is at the forefront of delivering communications solutions to businesses operating at sea within a range of budgets.

Hybrid solution

Daria Boiko, Director - Distribution Channel, IEC Telecom Group, explains: "The satellite communications sector is undergoing a period of rapid transformation with the introduction of new low earth orbit (LEO) constellations such as Starlink and

OneWeb, and our customers' demands and expectations are evolving accordingly.

"What seemed almost impossible or costly a few years ago is now achievable even for mid-range or smaller ships. Meanwhile crew communications, including internet access, have become an expectation, particularly following the pandemic, and are set to become mandatory in the near future."

As 'smart' ships are becoming increasingly reliant on digital solutions the focus is now

on maintaining the satcom connection regardless of location, weather conditions, or volume of usage. Daria Boiko commented: "Once digital, forever digital. Embracing digitalization aboard extends beyond technology; it reshapes operational procedures.

"For success, a vessel must stay connected at all times. Maintaining business continuity is essential these days, and the best way to achieve this is by having a hybrid solution operating over multiple networks."

Typically, back-up link is delivered via MSS (Mobile Satellite Services) terminals operating over L-band. Among the popular options are Iridium's Vessel Link 700, Inmarsat's FBB 500, and the Thuraya Orion IP. The utilization of backup systems has transformed from its traditional role as an emergency kit to now serving as a comprehensive operational connectivity toolkit essential for supporting critical onboard operations. However, with a lower bandwidth of up to 700 kbps, L-band is not suitable for most of the digital applications that we use ashore.

Services like video-conferencing and CCTV, due to their high data consumption, were previously exclusively accessible via VSAT (Very Small Aperture Terminal) channel. To resolve these technical issues and ensure business continuity even in low-bandwidth environments, IEC Telecom has developed



a set of optimized applications which can enable a suite of services even under 100 kbps. These include ONETeam video conferencing, ONEMonitor video surveillance, ONEAssist remote maintenance, and ONEHealth telemedicine.

Cyber security policy

However, while LEO is gaining momentum, it will take some time before the new networks are licensed by all seafarer nations. As such it can be expected that, based on area of operation, some vessels will continue using VSAT as a prime line.

With an average speed of 1.5Mbps, this type of connectivity can support a wide range of corporate applications although, to ensure the best user experience, it is essential to control the number of digital processes running in parallel to avoid a bottleneck effect. OneGate by IEC Telecom addresses this by enabling advanced filtration with different levels of access.

Today's seafarers bring their smart devices onboard and anticipate being connected with their families throughout their period at sea, wherever in the world they are sailing. While enabling connectivity for crew has proven to

boost morale and increase overall operational efficiency on board, it also increases cyber threats. Most of the threats, related to crew browsing, result from unintended connection of infected devices. These challenges can be resolved by means of advanced network management, such as: a) segregation of corporate and crew networks to avoid cross-contamination; b) establishment of different access levels for the corporate network to ensure that critical operations are managed by qualified professionals.

"The greater the level of connectivity within the maritime sector, the more intricate the approach to cybersecurity becomes. There is no one-size-fits-all solution," advises Daria. "When taking on a new project, we initiate the process by scrutinizing the chain of command and exploring all potential use cases on board. Our in-house engineering team then tailors a bespoke solution architecture to precisely align with each customer's needs.

With LEO enabling advanced connectivity, having a cyber security policy on board has become 'a new normal' and we are committed to assisting our customers in this essential transition."