

With Chris Insall, Head of Maritime BD at ST Engineering iDirect

Advanced Mobility and the Future of Maritime VSAT

As providers of satellite hub and modem infrastructure, ST Engineering iDirect is moving aggressively to lower costs and improve the quality of mobile connectivity. We're working with GEO, MEO, and LEO satellite operators and integrators to develop the innovative mobility technology to advance the state of maritime connectivity.

The maritime sector is a very diverse market, requiring different access technology types. Some users, such as cruise lines, need dedicated high-speed SCPC data links. Others, like commercial maritime, are better served by a variety of waveforms and the ability to flexibly share capacity.

The Future of Advanced Mobility

Truly advanced mobility requires innovation beyond basic connectivity to overcome obstacles, deliver greater bandwidth, and minimize costs.



Almost every major satellite operator is considering a multi-orbit strategy.

Simultaneously, there is a revolution in virtualization and migration to the Cloud. ST Engineering iDirect is leading product development to support the evolution of VSAT technologies.

A Closer Look at Advanced Mobility Technologies

ST Engineering iDirect has developed multiple technologies to achieve advanced mobility. Our advanced mobility technologies yield the scale, performance, efficiency and, flexibility to solve the challenges of VSAT networks for maritime.

Different waveforms are a central aspect to engineering VSAT solutions. To achieve high efficiency and performance, we have developed Mx-DMA MRC. Our new waveform combines the strengths of existing technologies

and overcomes old constraints to create something that has never been achieved - to harness the scalability of MF-TDMA and the efficiency of single channel per carrier (SCPC), in a dynamic, single return technology. Users no longer need to choose between them. Maritime's top service providers are adopting Dialog's Mx-DMA MRC and a cadre of modems equipped to yield the most from the platform.

Service provider, Marlink, is utilizing ST Engineering iDirect's advanced mobility technology to accelerate digitalization at MSC Mediterranean Shipping, one of the world's largest container lines.

In a project with two distinct components, Marlink has added a 4G component to previously installed VSAT and L-band technology, enabling MSC to access future LEO systems when they come to market. MSC also benefits from a Dialog-enabled Marlink IT link that allows MSC to access any IoT device remotely. With it, their IT staff can log in

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from the shore and upgrade all computers on all vessels simultaneously, avoiding the cost and inconvenience of sending engineers.

Speedcast has embraced the fastest modem in the ST Engineering iDirect set, the MDM5010, running on its Dialog-based

network to enable it to maximize bandwidth efficiencies by mixing very high speeds with large-scale modem deployments in the same bandwidth pool. That enables it to support higher throughput and meet passenger and operational demands while operating effectively across a multi-beam, multi-band satellite network.

The flexibility to meet many customer needs with shared capacity is central to providers pursuing a multi-path, multi-orbit, technology-agnostic strategy. Speedcast relies on the Dialog platform to power its Unified Global Platform (UGP). This SD-WAN-like system can automatically switch between beams and multi-orbit networks, reducing network



Your operations are complex enough. Let us handle the skies.

Maritime and offshore operations are a complex game. Managing everything safely and efficiently leaves no room for chances or downtime.

That's why you need a network that lets you operate uninterrupted, with all your connectivity options on board for 100% uptime.

Keep your connections on course with SIGMA, a cloud-enabled network management platform that removes complexities and guarantees multi-path, multi-orbit service.

LEARN MORE:

speedcast.com/nocompromise

A large, illuminated offshore oil rig is shown at night, with its complex steel structure and various platforms glowing against a dark sky. The rig is positioned diagonally across the frame, from the bottom left towards the top right.

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management costs and optimizing the quality of the end-user experience.

New flexibility for mobility network operators also comes from Dialog's Mobility Manager, which provides a centralized beam switch decision logic. This business logic can be optimized for different customer types and use various input parameters to make the switching decision. It is even possible to define the azimuth and elevation ranges for the vessel superstructure where blocking occurs. Then, based on the ship position, it can calculate heading and satellite position, the relative azimuth and elevation angles, and if they fall into the blocking ranges, the Mobility Manager will trigger a beam switching to an alternative beam.

The Eutelsat ADVANCE global network solution is partnered with ST Engineering iDirect and relies on all these Dialog platform features to enable greater two-way communications links and higher throughput. This is vital for bandwidth-hungry markets such as offshore, where reliable ship-to-shore communication is essential to run video conferencing, voice calls, IoT applications, and more. As technology

evolves, ST Engineering iDirect continues to deliver more features today while protecting its customers' future investments.

The MDM3315 is our newest high-performance modem to suit the mid-sector maritime market. When the multi-personality MDM3315 is made available on Evolution, it will function on all three ST Engineering iDirect VSAT platforms and be journey-enabled for future platform innovation.

Our Global Bandwidth Management (GBWM) is another important innovation. The largest HTS operators can use it to orchestrate their capacity effectively. From today's managed services to global networks for the world's largest shipping companies, GBWM sits behind the scenes to ensure SLAs are met.

The Intelsat FlexMaritime network, announced in 2015, harnesses the full capabilities of the GBWM technology on the Velocity platform. With a broad mix of wide and HTS beams, the Flex service offering has now grown to address more than 10,000 vessels via Service Providers such as KVH, APSatcom, and

World Link and a broad range of antenna systems from 37cm to 2.4m in diameter. The platform delivers services to a broad range of maritime sectors, from fishing vessels to ocean-going Merchant ships.



VSAT For Every Vessel

ST Engineering iDirect focuses on more than large vessel fleets – commercial shipping and cruise. We also address smaller vessels and improved VSAT to serve them better.

A new generation of low-cost sub-60cm antennas brings high-quality broadband performance in a smaller, lighter package. Designed to be carried on-board by crew and with simplified connectivity innovations, they can be installed without additional technical support.

For example, Intellian's v45c compact and lightweight Ku-band VSAT antenna illustrates just how far the design of maritime antennas for smaller vessels has evolved. It is

ideally suited to smaller boats and vessels, including fishing, leisure, commercial and government and assures that smaller vessels are just as connected as their larger cousins.

By combining the latest antenna technology with our Dialog platform, ship owners and managers can accelerate their ROI.

Always Onboard

ST Engineering iDirect has been in the maritime market for decades, and as the global leader in mobility solutions for the Maritime sector, Service Providers can leverage our experience to develop new and more certain revenue streams. Today, ST Engineering manufactures more than half of all VSAT remotes deployed on vessels, and nine of the 10 largest maritime VSAT Service Providers rely on our platform to run their networks.



Today, this is an evolving market that holds exciting future developments. We realize, as our

customers, that it's not just about where we are today. It's where we are heading in the future. We are committed to meeting the requirements at every level of the maritime industry.



About Chris Insall:

Chris Insall is Head of Maritime Market Development at ST Engineering iDirect – based in London, UK.

Chris joined iDirect from satellite operator Intelsat in 2022, where his primary responsibilities included VSAT product management for the maritime vertical markets,

With over 25 years' experience in the sector, Chris worked previously for industry providers