ST Engineering

A MARITIME TECHNOLOGY PARTNER FOR GROWTH AND INNOVATION

Waves of Connectivity

The question is no longer whether VSAT is the right choice for onboard connectivity—VSAT networks rule the seas—but how will maritime operators get the most value from their connectivity investment, especially as they manage larger deployments and support a growing range of applications.

Today commercial vessels send diagnostic data back to shore, cruise ships connect floating communities, yachts stream live TV for passengers, fishing boats provide crew with needed connection to home, and oil rigs support video surveillance to keep operations safe. And across these sectors, the demand is a fully connected vessel that satisfies all kinds of passenger, crew and business operations requirements.

Managing a global wireless network across the ocean is increasingly complex with more vessels to manage, more applications to support and more types of connectivity becoming available. That makes it ever more difficult to ensure reliable service and manage costs. New waves of technology innovation can help maritime service providers with high-speed capacity, expanded coverage areas, and lower-cost connectivity.

To deliver high-speed bandwidth, including higher data rates and more power, the industry has seen the rise of High Throughput Satellites (HTS). Another game-changer on the heels of HTS are new constellations intending to operate at low and medium earth orbits (LEO/MEO). These are projected to add exponentially more high-speed bandwidth to the skies and accelerate the need for better interoperability. These "space segment" innovations require equally capable ground segment technology to make the most of these major advances.

According to Analysts

NSR forecasts that 173,000 vessels will be added to the addressable maritime market over the next 10 years.

VSAT maritime services have grown at a rate of 40% or more annually over the past five years and market growth of fishing and yachts will top 100,000 by 2026 according to COMSYS.

Connectivity Costs in Perspective

Assume a merchant shipping vessel consumes around $10 million of bunker fuel per year. If en-route information such as weather updates and engines telemetry could save 1 percent of that cost and, considering a $4,000 monthly connectivity price, the shipping company could save 2x that cost on connectivity.

The ST Engineering iDirect Solution

ST Engineering iDirect is the leader in satellite ground infrastructure and solutions with over 20 years of experience in mobility. Our diverse range of terminals spans across the entire maritime market, covering segments as varied as superyachts, cruise ships, merchant shipping and oil & gas. Over half of all VSAT terminals installed on maritime vessels are made by ST Engineering iDirect, according to Comsys. And eight of the top nine maritime satellite service providers, according to NSR, rely on our platform to deliver the services needed for the "fully connected vessel."

Our multiservice platforms are relied upon by leading satellite operators and service providers around the world to deliver exceptional performance, efficiency and service capabilities with the scale and flexibility necessary to meet global connectivity requirements. These platforms are designed to provide the highest quality of service (QoS) across a full spectrum of network sizes and bandwidth requirements while minimizing capital expenditures. Maritime service providers require a VSAT platform that can handle maritime business demands for scale, and for seamless integration in hybrid networks and with future technologies.

Trusted Maritime Technology Partner

- 20+ Years Experience in Mobility
- #1 Installed Maritime Base
- Top 3 HTS Operators Served
- 350+ Global Partners

Enabling high performance and efficiency, global coverage and QoE management to service providers serving commercial shipping, fisheries, yacht and ferry, cruise, and offshore oil and gas sectors.

Our primary offerings for the maritime market are Newtec Dialog®, iDirect Evolution® and iDirect Velocity® :

Flexibility, Efficiency & Scalability

Dialog features high-efficiency waveforms, such as DVB-S2X and award-winning Mx-DMA technology; SCPC technology for high-efficiency links; and MF-TDMA for very scalable networks. Mx-DMA provides the highest QoS while enabling the highest spectral efficiency possible based on real-time traffic and fading conditions. Our latest innovation is Mx-DMA MRC, a new technology that combines MF-TDMA's benefits and Mx-DMA's spectrum efficiency into a single return technology suited to a greatly expanded set of applications to minimize operational complexity and maximize statistical multiplexing.

Award-winning & Proven

Evolution is a native IP platform that features efficient DVB-S2X and Adaptive TDMA return waveform technologies in a bandwidth-sharing environment to operate large-scale maritime networks. This award-winning, proven platform delivers a high Quality of Experience, enabling countless possibilities for QoS levels, bandwidth management and traffic prioritization. Its modular design and flexibility allow customers to offer multiple service types, such as starting with small networks that scale with a business over time.

Advanced Bandwidth Management

Velocity is specifically designed for HTS operators deploying managed services that require massive scale, mobility and advanced bandwidth management capabilities addressing a multitude of market applications. Velocity's mobility features are optimized around very fast beam switching across multi-spot beams. Today, leading satellite operators such as Inmarsat, Intelsat and SES have adopted Velocity to serve more than 400 beams of HTS coverage worldwide for its ultra high availability and redundancy.

VELOCITY
EVOLUTION
DIALOG

powered by
Newtec iDirect

At ST Engineering iDirect, our platforms are designed to facilitate the integration of satellite networks with telecom core networks. Our platforms' feature sets mirror the quality and reliability of terrestrial services for an enterprise-class user experience. In addition, all can operate seamlessly as part of an integrated global IP network. With Layer 2 over Satellite (L2oS), our platforms can implement a variety of modern, converged network architectures; pass any Layer 3 protocols; and more easily integrate with hybrid network scenarios. Our versatile modem portfolio can address maritime requirements from all sectors, including commercial shipping, fisheries, oil and gas, and passenger from yachts to cruises.

Setting the Standard of Excellence in Mobility

ST Engineering iDirect platforms are distinguished by a comprehensive range of advanced mobility technologies and related features that have set a standard of excellence in ground system architecture.

- Bandwidth efficiency and higher throughput to optimize HTS with powerful outbound waveform technology
- Optimized return link capacity to increase network availability, adjust to dynamic conditions and lower operating costs
- Automatic beam switching to enable a vessel to automatically connect to satellite beams as it travels across multiple footprints with no manual intervention
- Fast beam switching for constant connectivity
- 'Network Management System (NMS) and tracking that configure and manage onboard remotes and monitor status to ensure high-quality connection
- Advanced QoS for efficient bandwidth allocation and traffic prioritization
- Spread spectrum waveform technology to support very small antennas on maritime vessels
- Hub flexibility and scalability for lower risk and affordable entry to new markets or expanding demand
- Seamless integration with telco networks through L2oS
- Global coverage for mobility applications by leveraging cost-effective, standards-based antenna technology
- Security features with 256-bit AES link encryption

Assess Your Maritime Network

In today's maritime environment, understanding the most important factors when choosing a platform for connectivity is essential to satisfying specific operational and business requirements. These are the key elements:

Throughput
How will your platform address the constant need for higher efficiency and throughput?

Scalability
Will your ground infrastructure be intelligent enough to grow in lockstep with future capabilities?

Security
Do you have security and resiliency built in from the ground up to protect content and equipment?

Mobility
Can you offer a seamless experience as satellite solutions are becoming more complex and multi-dimensional?

Access
Will your terminal have an ecosystem surrounding it, ensuring that all components work in harmony together?

An Eye on the Horizon

At ST Engineering iDirect, we have all the maritime solutions that service providers need to pursue the broadest market opportunities and choose the right technology for their business model and expansion strategy. Our high-performance portfolio of modems – the high-powered Evolution and Velocity iQ series and Dialog MDM series – provide a wide variety of choices to match application requirements to capabilities.

And as we look to the future we are advancing an open, converged platform to support multi-orbit capacity and multi-waveform terminals to enable our partners to deliver the right capacity for the right application at the right cost model to ensure a high-quality and seamless user experience.

We are driving the industry forward, delivering the best technology for maritime service providers to capture today's existing demands and capture new opportunities no matter which route they choose.

The Power of Maritime Partnerships for the 5G Future

The future of 5G — effectively a network of networks — will deliver a wider range of services and applications. 5G standards will be key to the successful integration of different access networks, including cellular, satellite, Wi-Fi, or others into a seamless operating environment, making standards adoption critical. We will work together to create hybrid connectivity. A maritime 5G environment will require satellite to successfully maximize coverage, optimize network performance, and improve the user experience. At ST Engineering iDirect, we are transforming our technology to align with 5G standards.

The telecom industry as a whole is building upon technologies such as network programmability, function virtualization, and service orchestration. Through satellite 5G, service providers will be able to exchange inflexible, hardware-based networks for reconfigurable, software-based networks. These foundational principles are the basis of our vision for a 5G future:

- Software Defined Networking (SDN) – separates the data plane from the control plane, so control plane decision-making is centralized through a programmable interface.
- Network Function Virtualization (NFV) – pulls network functions out of boxes and turns them into pieces of software that operate as needed within the cloud.
- Service Orchestration – automates the provisioning workflow using service chaining to reduce the time for implementing network changes from weeks to minutes.
- Evolved Packet Core (EPC) – manages the complexities of an ever-changing mobile network, making sure the user can access from anywhere and maintain the expected services.

Maritime business can expect to experience reduced OPEX, easier compliance, greater visibility, and quicker decision-making.

Newtec iDirect