IoT SOLUTIONS FOR MARITIME

ST Engineering

IoT Within Reach

The internet of things (IoT) is a steadily growing billion-dollar market largely driven by companies undergoing digitization for greater efficiency and transparency, as well as by 5G and emerging applications like smart cities. Satellite's inherent capabilities — such as its ability to reach remote areas, its ability to scale, to extend coverage for other providers — make it an essential part of a hybrid network needed to support an interoperable IoT system.

IoT and the Maritime Market

The maritime market includes vessels traveling overseas, along coastal waters, or through shipping channels. Maritime demand is generally powered by cargo tracking, asset monitoring, telematics, fleet management, border control, safety, scientific research, and ocean monitoring services. The use of IoT in maritime can be further subdivided into three sub-verticals:

Cargo: Maritime's primary use for IoT is asset tracking and monitoring for shipping containers and other large items being transported along shipping routes. Additionally, IoT for fleet management can help automate and increase fleet efficiency for logistics, supply, maintenance and operations.

Market Snapshot

Transportation by land, air, and sea is by far the largest IoT market with more than $400 million in revenue annually expected by 2028 and with about 3 million in-service units. *[Government Fleet's 2019 annual benchmarking survey]*

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Cruise/ferry: While satellite is already in use on many large vessels in the fishing, cruise and ferry, and leisure markets, it is expected to grow as vessels add dedicated equipment for IoT sensor data and IoT connectivity.

Fishing: Vessel Monitoring Systems (VMS) have greatly increased the efficiency of monitoring, control, and surveillance of fishing vessels. In the last few years, several countries have mandated the use of VMS to monitor fishing vessel activity and to ensure these vessels actively report on catches to the fisheries management authority.

IoT Application Summary

**Telematics:** Vessel engine performance and health, fuel consumption, and cargo integrity monitoring

Cargo tracking: Cargo transportation tracking and monitoring for logistics and supply

Safety: Includes alarms, tracking, border security monitoring

Maritime: Illegal Unregulated Unreported (IUU) Fishing with IoT

IUU fishing is a global issue that threatens the sustainability of the industry and environment. With IoT, however, organizations can better monitor fishing operations and combat IUU fishing activities.

- **VMS compliance:** With satellite services integrated with VMS systems, fishery agencies can collect information relating to the position, speed, course, and identification of connected vessels on a regular basis. The VMS can generate alerts for operations in non-authorized areas.

- **Electronic logbooks:** Fishing vessels are replacing traditional paper logbooks with electronic logbooks. Crew use their Wi-Fi enabled phones or tablets to record catches, transshipments, landings, and sales, and they transmit this information over satellite to the appropriate authorities based on policy.

- **Safety and distress alerts:** Provision basic safety services to fishing crew, connecting them with rescue services in case of an emergency at sea. This also enables the fisheries to send weather alerts, environmental conditions, and maritime traffic information to crew.
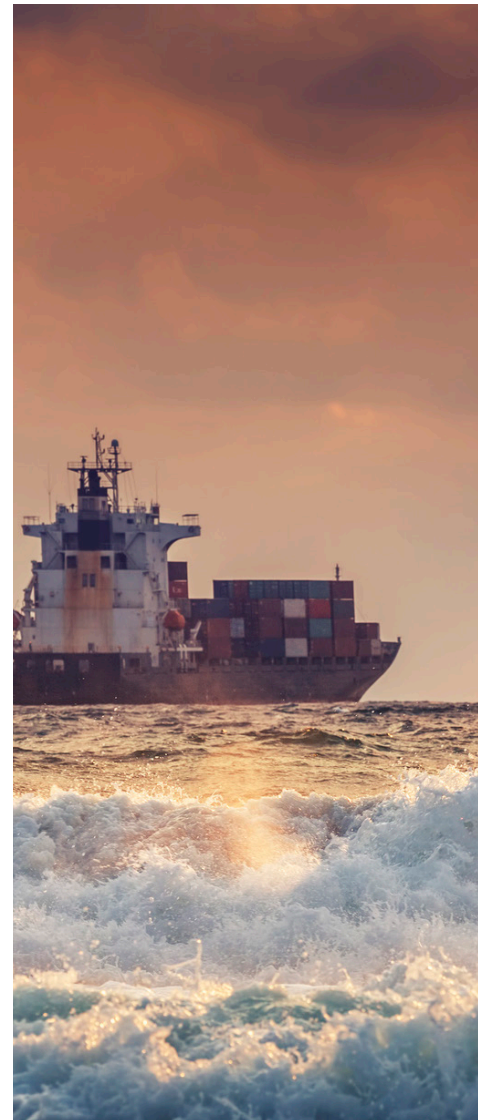
IoT Within Reach With ST Engineering iDirect

At ST Engineering iDirect, our IoT Solutions serve all of these data requirement use cases. Our Evolution, Velocity and Dialog multi-service platforms are ideal for fixed and mobility applications that range from high to very high data rates (HDR) and that require highly reliable and complex network configurations.

However, we recognize that IoT requirements also exist in the low data rate (LDR) and medium data rate (MDR) market segments. Service providers that want to build a new IoT service offering for these markets, or that are new entrants into the IoT market in general, require a highly efficient, cost-effective solution and flexible business model.

That's why ST Engineering iDirect has launched our flexible IoT Services to supplement our highly successful platforms and to ease the entry of service providers into the IoT market. This new LDR and MDR offering provides customers with a complete connectivity solution that's built on a flexible service enablement platform paired with IoT-as-a-service options. With our scalable Evolution, Velocity, and Dialog platforms and our small form-factor IoT terminal, powered by hiSky, we can support flexible business models for immediate market access of fixed and mobile IoT environments while reducing the upfront capital investments and operational complexity usually required to launch an IoT platform and service.

At ST Engineering iDirect, our IoT Services are ideal for LDR (small data bursts of 30 Kbps or 1–2 MB per month usage) and MDR (continuous, on-demand throughput of 10–500 Kbps) applications. Our solutions utilize a family of compact, lightweight IoT terminals that feature a tightly integrated satellite modem and flat-panel antenna design in Ka-band or Ku-band variants.

Need more data than that? Our iQ and MDM series modems on our Evolution, Velocity, and Dialog multi-service platforms are ideal for fixed and mobility HDR IoT applications.