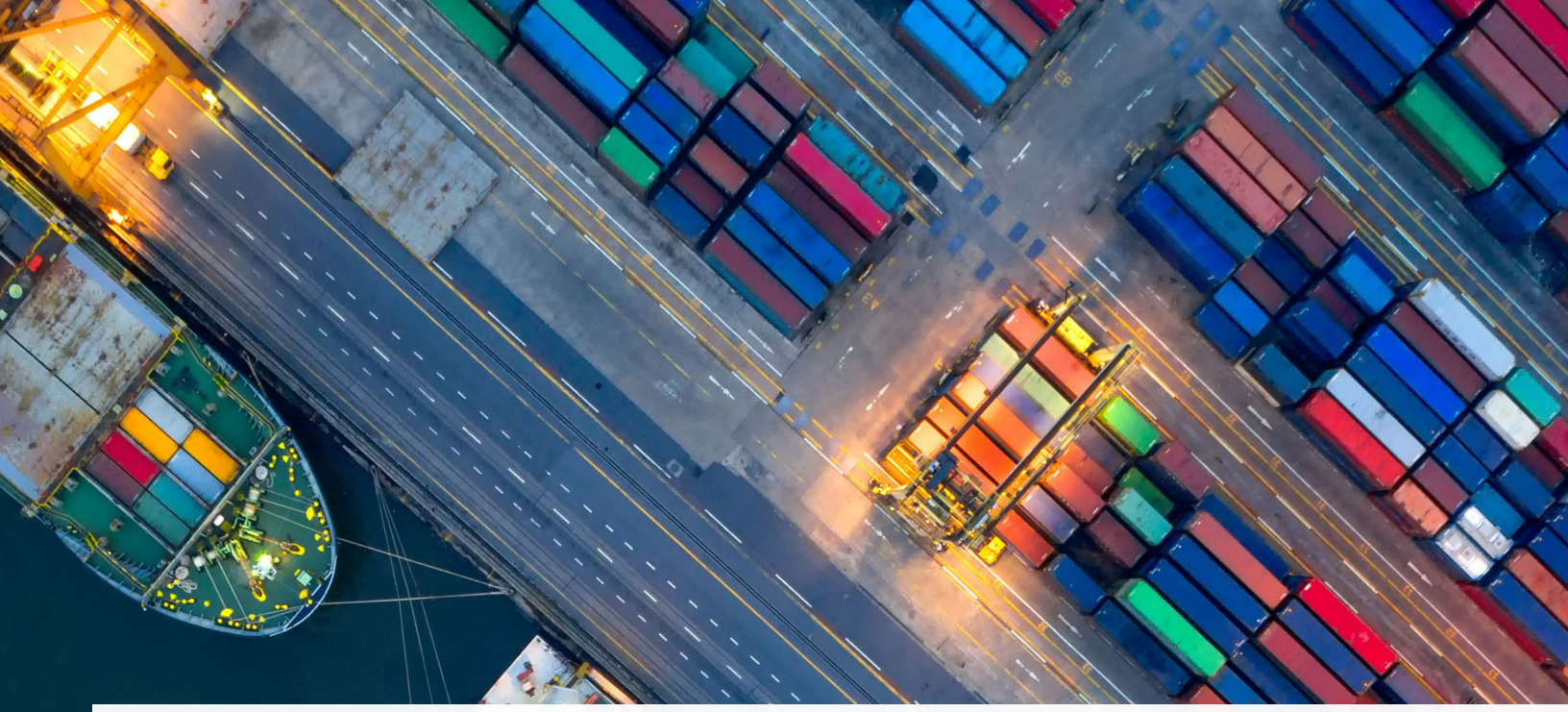
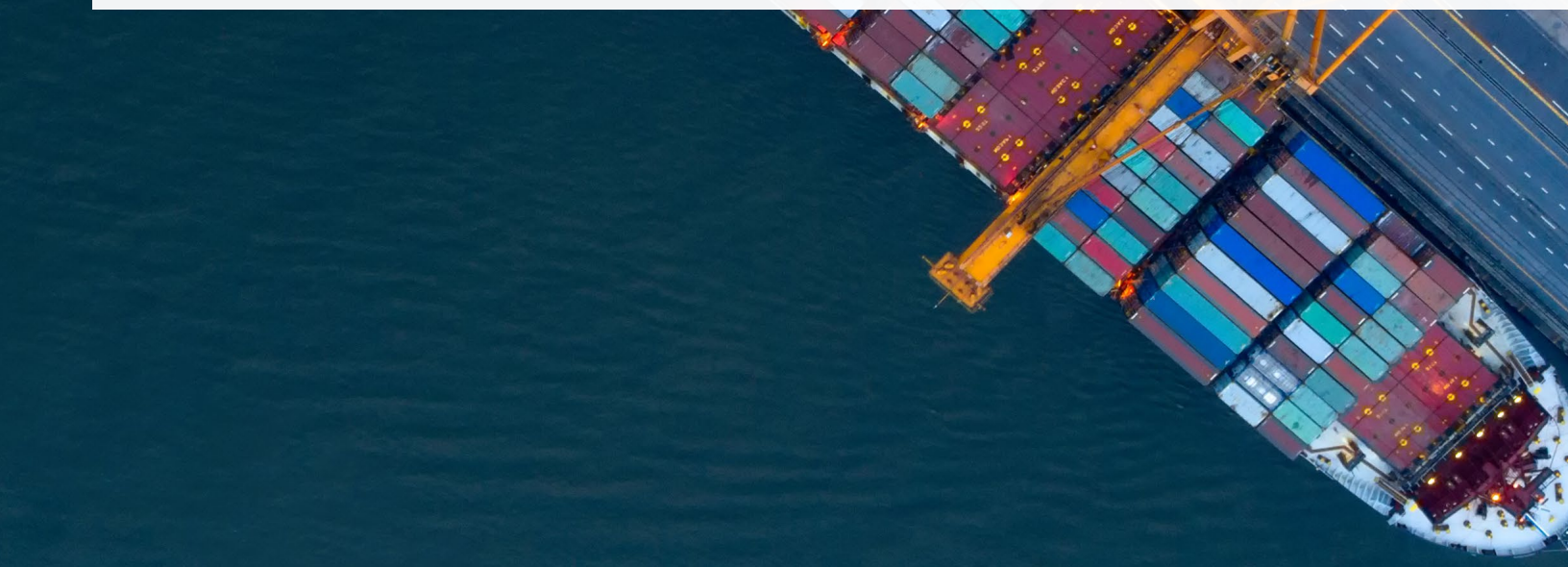


SMART SUPPLY CHAIN & LOGISTICS USE CASE

WITRAC

Transforming Asset Tracking for Maritime Transport

WITRAC Enables Complete Cold Chain Monitoring



LoRa®

SEMTECH

COLD CHAIN BLIND SPOTS

Maintaining the required temperature of perishable goods throughout the entire supply chain is one of the biggest and most common cold chain challenges. Any temperature variance that is higher than the set temperature can affect product quality, leading to waste or a failure to adhere to standardized regulations.

Replacing antiquated manual processes with cold chain Internet of Things (IoT) asset tracking solutions is a cost-effective way to automatically monitor fresh food and pharmaceutical products in temperature-controlled refrigeration and freezer units.

To ensure the safety of goods, the continuous monitoring of location and temperature must occur during the entire chain of custody, from processing and production to storage and delivery. This has been a technical challenge for intermodal transport – until now.

WITRAC LEVERAGES SEMTECH'S LoRa® DEVICES FOR CONTAINER TRACK AND TRACE

Since its founding in 2015, Valencia-based WITRAC has helped companies be more efficient and competitive with innovative technology solutions that connect and give visibility to the value chain. WITRAC fabricates its own hardware and software based on the IoT and artificial intelligence (AI) technology to allow customers to identify, locate, measure and wirelessly control assets in real time.

WITRAC's Total Track & Trace Intelligent Platform has been successful tracking assets from the start of the value chain, inside warehouses and distribution centers, and during land transport, using a combination of LoRaWAN®, Wi-Fi, BLE and cellular connectivity options in the same hardware device. However, once assets arrived at a seaport, the company could no longer provide real-time visibility of the assets' condition and location due to the lack of a feasible offshore communications system.

WITRAC set out to overcome this industry challenge by providing complete traceability and temperature visibility for international maritime transport with a cost-effective solution. The company developed a tracking solution that can communicate critical data leveraging either the long range and low power capabilities of LoRaWAN or the global reach of LoRa 2.4GHz when traveling across multiple continents. The data is then replicated in real time to a Cloud server using satellite communications.

LoRa®

Use Case

IoT Challenge

- Replace labor-intensive manual temperature monitoring
- Remotely monitor location and temperature of assets during entire cold chain
- Send notification alarms when anomalies occur offshore

LoRa Technology Used

- Semtech's LoRa devices deliver long range, low power sensing capabilities
- Wirelessly connected sensor communicate data to the Cloud via satellite
- LoRaWAN networks and networks using LoRa 2.4GHz

Business Value

- Real-time temperature monitoring of perishable goods
- Reduce damage claims by 50%
- Visibility and control of offshore operations improve quality of service

For More Information

About Semtech's LoRa devices for utility applications, go to

semtech.com/LoRa

About WITRAC

witrac.io

"A satellite communication point normally costs around 100€ per month. Ships move thousands of containers, so if we install a satellite modem in each container the expense would make this type of solution economically non-viable. With LoRa® integration, we can place our WITracker devices in every container and communicate data to a single satellite modem using LoRa, which has no monthly cost. This technology combination provides real-time offshore and onshore visibility to thousands of containers with a cost of only 100€ per month per ship, which means less than 10 cents per container."

-Jose Pons Ballester, Co-Founder and CTO of WITRAC

WITRAC's innovative platform provides real-time visibility and control of offshore operations. In addition to temperature monitoring, the route control and monitoring solution geolocates the fleet's vessels. It allows alerts to be set for deviations in fuel consumption, speed, routes or miles traveled, allowing shippers to take corrective measures en route.

The tracking and monitoring of goods continue uninterrupted while unloading reefer containers from ships to rail or truck transport. Again, IoT controllers automatically keep food and medicine within a pre-determined temperature range when traveling to food retailers and pharmacies.

"The role of Semtech was fundamental to the success of WITRAC in building a future-proof product. Semtech supported us on the selection of communication connectivity, our technology stack and architecture from the very beginning. With its help, we reduced our time to market to months instead of years, which is amazing considering the magnitude of this use case."

-Jose Pons Ballester, Co-Founder and CTO of WITRAC

WITracker

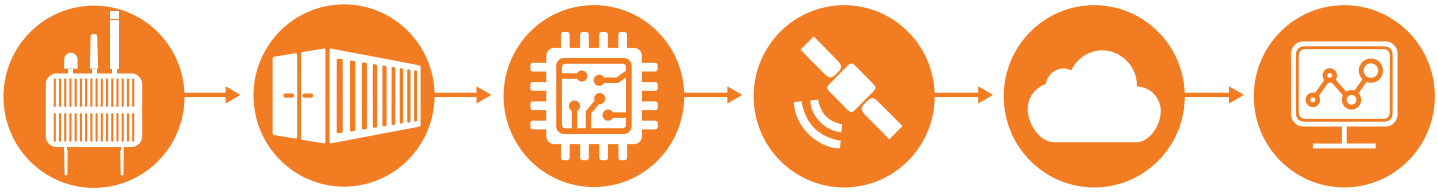
PROTECTING PERISHABLE GOODS DURING DAILY CANARY ISLAND SERVICE

Boluda Corporación Marítima, a leading global maritime services provider, selected WITRAC's platform to monitor and ensure quality of cold chain transport for Boluda's new Daily Canarias line, providing citizens of the Canary Islands with the first daily transportation of cargo from the peninsula. Location and temperature status of fresh food and medicine are tracked on seven container vessels traveling 700 miles from the Spanish mainland on the maritime corridor linking the Port of Cádiz to the island ports of Las Palmas and Tenerife.

"WITRAC is part of our family, and it is part of the success of this daily service. For the first time, customers such as supermarkets, pharmacies, hotels and resorts are receiving a daily supply of fresh foods and medicine. This has completely transformed trade logistics for the Canary Islands."

-Gorka Carrillo Fernández, CEO of Boluda Shipping

HOW IT WORKS:



The step-by-step process of WITRAC's asset tracking solution using LoRa 2.4GHz and LoRaWAN®

Previously, Boluda would be forced to wait until the 38-hour voyage was completed and refrigerated reefer containers were discharged at their land destination to discover any temperature or power anomalies had occurred and caused damaged. Now, with WITRAC's tracking technology inside all the containers on the vessel, Boluda can monitor power supply and regulate the temperature of each metal container stacked onboard its ships – even in the middle of the ocean – and pass that information along to its customers.

"It's clear that an equivalent solution based on control command would have taken about 20 years to deploy and would have cost us 10 times more."

- Gorka Carrillo Fernández, CEO of Boluda Shipping

Typical Results From WITRAC Solutions

-3%
CO2 emission

-3%
fuel consumption

-30K€
damage from single reefer spoilage

-50%
in damage claims

Semtech's LoRa® Platform

Semtech's LoRa device-to-Cloud platform is a globally adopted long range, low power solution for IoT applications, enabling the rapid development and deployment of ultra-low power, cost efficient and long range IoT networks, gateways, sensors, module products, and IoT services worldwide. Semtech's LoRa technology provides the communication layer for the LoRaWAN® standard, which is maintained by the LoRa Alliance®, an open IoT alliance for Low Power Wide Area Network (LPWAN) applications that has been used to deploy IoT networks in over 170 countries. With the proliferation of LoRa devices and the LoRaWAN standard, the LoRa Developer Portal is a place to learn, connect, collaborate, and find resources to help accelerate your LoRa development process. Semtech is a founding member of the LoRa Alliance.

To learn more about how LoRa enables IoT, visit
semtech.com/LoRa

Semtech Corporation

A leading global supplier of high performance analog and mixed-signal semiconductors and advanced algorithms for infrastructure, high-end consumer and industrial equipment. Products are designed to benefit the engineering community as well as the global community. The Company is dedicated to reducing the impact it, and its products, have on the environment. Internal green programs seek to reduce waste through material and manufacturing control, use of green technology and designing for resource reduction. Publicly traded since 1967, Semtech is listed on the NASDAQ Global Select Market under the symbol SMTC.

For more information, visit
semtech.com

LoRa Alliance®

An open, nonprofit association that has become one of the largest and fastest-growing alliances in the technology sector since its inception in 2015. Its members closely collaborate and share expertise to develop and promote the LoRaWAN® standard, which is the de facto global standard for secure, carrier-grade IoT LPWAN connectivity. LoRaWAN has the technical flexibility to address a broad range of IoT applications, both fixed and mobile, and a robust LoRaWAN Certification program to guarantee that devices perform as specified. The LoRaWAN standard has been deployed by more than 165 major mobile network operators globally, with connectivity available worldwide.

For more information, visit
LoRa-Alliance.org

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