WITRAC

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LoRa®

▼ITRAC

WITRAC Enables Complete Cold Chain Monitoring

Transforming Asset Tracking for Maritime Transport

WITRAC, using Semtech's LoRa® technology, developed a cost-effective IoT solution for real-time tracking of temperature-sensitive goods across land and sea. Deployed by Boluda Shipping, the platform ensures cold chain integrity, reduces damage claims by 50% and improves efficiency on the Daily Canarias maritime route.

QUICKFACTS

Company
WITRAC
witrac.io

Customer Profile
WITRAC is a Valencian technology company specializing in wireless tracking and metering solutions for Industry 4.0, supply chains and smart cities. Founded with a focus on real-time asset visibility, WITRAC develops proprietary hardware and software that combine Internet of Things (IoT) sensors, Artificial Intelligence (AI)-driven analytics, and multi-protocol connectivity—including LoRaWAN®, Wi-Fi, BLE and cellular networks—to provide comprehensive tracking and monitoring capabilities. Their platform enables businesses to optimize operations, enhance safety and reduce environmental impact by offering end-to-end traceability and actionable insights. Trusted by global companies such as Ford, Volkswagen and Mercadona, WITRAC has expanded its presence across Europe and the U.S., positioning itself as a leader in industrial IoT innovation.

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

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

Products and Services
- 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.

INTRODUCTION

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.

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.

CHALLENGE

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.

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.

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 damage.

> " 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® technology 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

> " 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

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.

SOLUTION

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.

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.

LoRa Technology Used:

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

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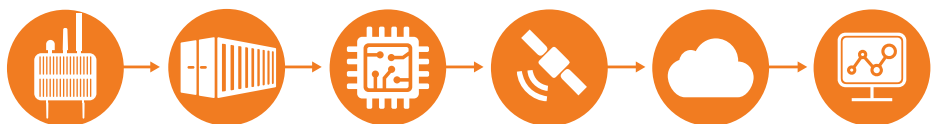
The step-by-step process of WITRAC's asset tracking solution using LoRa 2.4GHz and LoRaWAN®

" 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. "

" 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*

BOLUDA SHIPPING
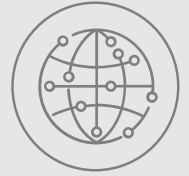
TYPICAL RESULTS FROM WITRAC SOLUTIONS

-3%
CO2 emission

-3%
fuel consumption

-30K€
damage from single reefer spoilage

-50%
in damage claims

BENEFITS

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.

Business Value:

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

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