SEMTECH CASE STUDY

Ineo-Sense

ineo-sense
BRINGING SENSE TO WIRELESS

Connecting Assets to the Cloud in the Aviation Sector

Discover how Ineo-Sense's LoRa-based Clover-Core sensors enabled leading aerospace manufacturer Lauak Group to streamline asset tracking and reduce production lead times by up to 20%. This case study explores the deployment of IoT solutions in complex manufacturing environments to enhance visibility, efficiency and operational performance.

QUICKFACTS

Company

Ineo-Sense
ineo-sense.com

Customer Profile

Founded in Nîmes, France, Ineo-Sense is a pioneering provider of intelligent and autonomous wireless sensor solutions for industrial IoT applications. With a mission to "Bring Sense to Wireless," the company focuses on developing low-power, high-performance devices that enhance operational visibility and efficiency across manufacturing, logistics and infrastructure sectors. Ineo-Sense's flagship Clover-Core platform leverages LoRa® technology to enable real-time tracking, monitoring and automation, helping organizations streamline complex workflows and reduce costs. With thousands of sensors deployed globally, Ineo-Sense continues to drive innovation in connected industrial systems.

Objectives

- Improve productivity by minimizing manual intervention.
- Provide efficient asset identification.
- Offer customers a ready-to-use product for industrial logistics.

Results

- Cut production lead times by up to 20% and reduce downtime at least 10%.
- Optimize workflow using value-added services.
- Provide reliable data about items in real time.

Products and Services

- Sensors featuring the LoRa® wireless RF transceiver, SX1276.
- Wirelessly connected sensors communicate data to the Cloud.
- LoRaWAN®.

> Semtech's LoRa devices allow production managers and engineers to remotely monitor the use, status, functionality and location of expensive manufacturing assets in real time. Previously, there was no way to do this effectively in a manufacturing setting, leaving companies to track assets themselves at facilities which can often be over 100,000 sq. ft. in area.

Olivier Guilbaud,
Founder and CEO, Ineo-Sense

INTRODUCTION

The Rise of IoT for Smart Asset Management

The Internet of Things' (IoT) economic impact on factories, retail settings, work sites, offices and homes could total as much as $6.3 trillion by 2025, according to McKinsey Global. Much of this impact will be from the direct deployment of sensors and hardware in commercial, retail and industrial buildings. Among a plethora of uses, IoT solutions enable the efficient and reliable monitoring of assets as they move through the production cycle and often throughout large warehouses and campuses. This reliable location data is invaluable to production managers, reducing the likelihood that valuable assets may be misplaced or lost entirely during their route through production.

CHALLENGE

Often these assets are expensive to replace and difficult to find in a large warehouse, especially when they are out of the process flow or in the wrong part of a building. The group counts some of the world's largest airplane manufacturers among its customers, including Airbus, Dassault Aviation, Embraer and IAI. Additional clients include industry leaders in aerostructure (Daher, Latecoere, Stelia and Spirit).

"Semtech's LoRa devices allow production managers and engineers to remotely monitor the use, status, functionality and location of expensive manufacturing assets in real time. Previously, there was no way to do this effectively in a manufacturing setting, leaving companies to track assets themselves at facilities which can often be over 100,000 sq. ft. in area." – Olivier Guilbaud, Founder and CEO of Ineo-Sense.

SOLUTION

A LoRa®-Based Application

For nearly a decade, Ineo-Sense, based in Nimes, France, has pioneered the development of intelligent and autonomous sensors for IoT applications. With its slogan "Bringing Sense to Wireless," the company has worked with Semtech for many years, creating a range of innovative products based on Semtech's LoRa devices and the LoRaWAN® open protocol. The solutions, named 'Clover-Core,' are developed by Ineo-Sense and leverage embedded LoRa-based chipsets for the realization of high added-value industrial connected objects, combined with the LoRaWAN protocol's recognized expertise in low power wide area networks (LPWANs).

LAUAK RESULTS WITH INEO-SENSE SENSORS

14,000

asset tracking solutions used by Lauak Group

20%

reduction in production lead times at Lauak

10%

drop in downtime at Lauak

To date, Ineo-Sense has deployed around 70,000 sensors in France and abroad. Its experience in the sensor market led the company to develop a new series of LoRaWAN-based sensor products for industrial asset tracking, automated inventory and logistics based on its Clover-Core product line. Ideal for asset management, online inventories, incident detection and many other end-uses, the Clover-Core product includes geolocation services designed for both indoor and outdoor deployment, making the technology suitable for large buildings, warehouses and factories, as well as airports, hospitals and railway stations. High-level security is provided through authentication and AES-128 encryption.

Although the Clover-Core solution, available for EU, U.S. and Asian frequency bands, is intended for smart asset tracking in industrial plants, it is particularly suited for use in manufacturing settings – including the aviation and automotive sectors – due to manufacturing's similar asset management needs.

Enabling Asset Tracking in Aerospace Manufacturing

Based on Semtech's SX1276 low power wireless RF transceiver, Clover-Core sensors in manufacturing help deliver real-time, zone-based inventory by locating and tracking tooling racks and packages. The sensors' functions include point-to-point communication, allowing pick-to-light (identification by LED) as a value-added service.

Ineo-Sense's Clover-Core sensors have already been selected by Lauak Group, a leading French manufacturer and supplier of primary components, sub-assemblies and assemblies for the aeronautics industry.

Embedding LoRa devices into each Clover-Core sensor, Ineo-Sense has supplied more than 14,000 asset tracking solutions to Lauak for use in an assembly site in southwest France consisting of several buildings and warehouses. The solutions are integrated into Lauak's manufacturing containers for the accurate monitoring of items in transit throughout the company's extensive facilities.

BENEFITS

Following implementation of the LoRa-based Clover-Core sensors, Lauak has seen a reduction in production lead times by up to 20 percent and a drop in downtime by at least 10 percent. Use of the sensors replaces an asset tracking system based on bar code scanning and radio-frequency identification (RFID). Part of the problem with this system was that it required a significant amount of manual intervention, bringing an additional risk of human error and forgetfulness. With the new LoRaWAN-based system, major savings in time are achieved through an automated inventory and geolocation system that allows data to be collected remotely across long distances and enhances process efficiency.

Other savings come from reductions in operational expenditure (opex) by minimizing replacement costs, especially for assets that move from site to site. With automated inventory and synchronization between sites, divisions and even countries, savings add up substantially.

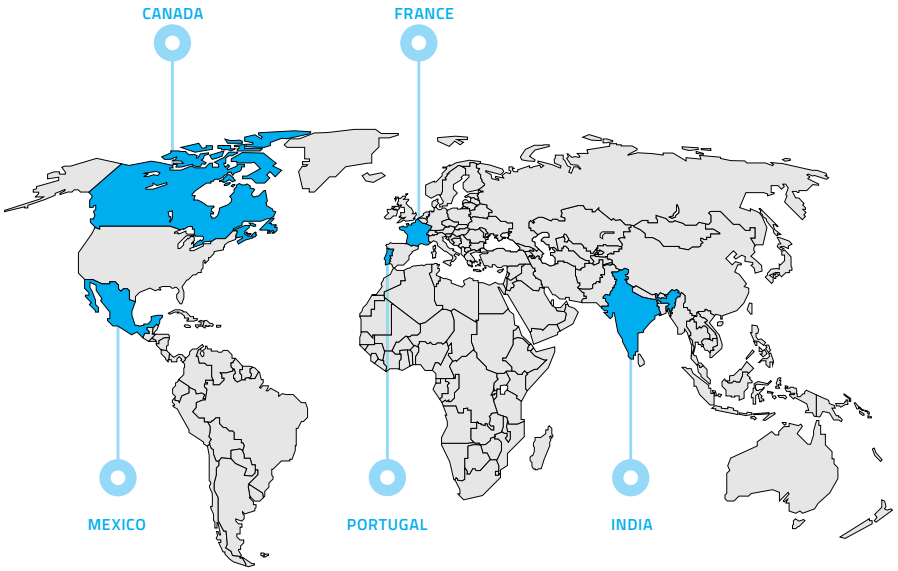
Due to Clover-Core sensor infrastructure, Lauak is able to optimize its workflow by having access to reliable data on its items and equipment, allowing it to act quickly on any inventory issues and be able to check the data for bottleneck analysis, leading to continuous improvements on the shop floor.

Indoor localization by zone immediately flags misplaced items and on-demand tracking instantly locates a piece of equipment, in both large buildings and outdoors. A key benefit of having a LoRaWAN network is that it delivers a cost-effective infrastructure when compared to indoor short-range networking technologies while also enabling both indoor and outdoor tracking.

Planning for the Future

Following Clover-Core's successful deployment in France, Ineo-Sense and Lauak plan to expand the solution to Portugal, where Lauak has another 100,000 sq. ft. plant. The LoRaWAN-based solution is also expected to deploy to many of Lauak's other sites across France, as well as those in Canada, India and Mexico. Additionally, Ineo-Sense and Semtech are continuing their collaboration with several projects currently in development.

LAUAK PLANS TO EXPAND ITS SOLUTION TO PORTUGAL



About Semtech

Semtech Corporation (Nasdaq: SMTC) is a high-performance semiconductor, IoT systems and cloud connectivity service provider dedicated to delivering high-quality technology solutions that enable a smarter, more connected and sustainable planet. Our global teams are committed to empowering solution architects and application developers to develop breakthrough products for the infrastructure, industrial and consumer markets.

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