SEMTECH

LoRa®

ineo·sense
BRINGING SENSE TO WIRELESS

Connecting Assets to the Cloud in the Aviation Sector

INEO-SENSE'S 'CLOVER-CORE' SENSOR SOLUTIONS CUT PRODUCTION LEAD TIMES UP TO 20 PERCENT

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

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).

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.

"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

LoRa®
Use Case

IoT Challenge

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

LoRa Devices Used

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

Business Value

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

For More Information

About Semtech's LoRa devices for supply chain and logistics applications, visit
semtech.com/LoRa

About Ineo-Sense
ineo-sense.com

About Lauak
groupe-lauak.com/en

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. 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 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. 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).

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.

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.

Lauak Results With Ineo-Sense Sensors

14,000
asset tracking
solutions used by
Lauak Group

20%
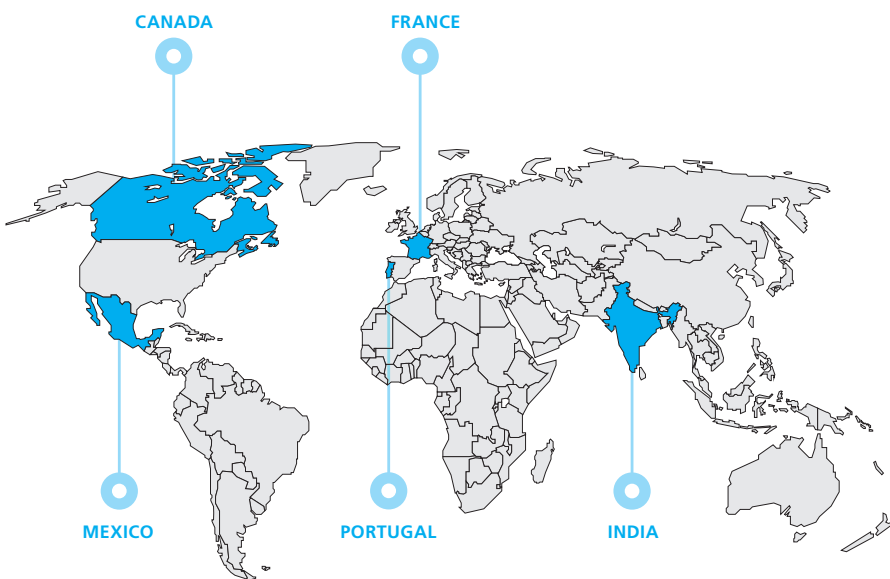reduction in
production lead
times at Lauak

10%
drop in
downtime
at Lauak

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

CANADA   FRANCE

MEXICO   PORTUGAL   INDIA

For more information on Ineo-Sense visit ineo-sense.com

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Semtech's LoRa devices and wireless radio frequency technology is a widely adopted long-range, low-power solution for IoT that gives telecom companies, IoT application makers and system integrators the feature set necessary to deploy interoperable IoT networks, gateways, sensors, module products, and IoT services worldwide. IoT networks based on the LoRaWAN® specification have been deployed in over 100 countries and Semtech is a founding member of the LoRa Alliance®, the fastest growing IoT Alliance for LPWAN applications.

Semtech Corporation is a leading supplier of high performance analog, mixed-signal semiconductors and advanced algorithms for high-end consumer, enterprise computing, communications, and industrial equipment. Semtech, publicly traded since 1967, is listed on the Global Select Market under the symbol SMTC and has more than 32 sales and application support offices in 14 countries as well as representatives and distribution support locations in more than 30 countries. Semtech is dedicated to providing proprietary platforms, differentiated by innovation, size, efficiency, performance, and reach.

The LoRa Alliance is 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 experiences to promote the LoRaWAN protocol as the leading open global standard for secure, carrier-grade IoT LPWAN connectivity. With the technical flexibility to address a broad range of IoT applications, both static and mobile, and a certification program to guarantee interoperability, the LoRaWAN protocol has already been deployed by major mobile network operators globally and connectivity is available in over 100 countries, with continuing expansion ongoing.