



## Fleet Management

LoRa® APPLICATION BRIEF



### Semtech's LoRa Technology Enables Affordable Fleet Management

#### DESCRIPTION

LoRa® devices and wireless RF technology (LoRa Technology) is making it easy and economical for smart supply chain and logistics to track valuable assets including vehicle fleets at a construction site. With Internet of Things (IoT) tracking for fleets, businesses can reduce cost by keeping fleets in the field longer with better visibility for maintenance issues and close monitoring of real-time location.

LoRa Technology gives managers an affordable window into all the information they require from the assets at work. High throughput to Cloud-based software platforms ensures easier management of fleets and equipment, tracking of maintenance history and real-time location. LoRa-based devices, sensors and gateways are an affordable way to capture, track and manage all the information generated by multiple movable assets in-motion.

#### BENEFITS

Tracking devices placed on company assets, such as tractors, trolleys, cranes, forklifts, and other essential in-motion assets enable real-time location and status sharing with a central manager.

When monitoring engine temperature, velocity, oil pressure or battery charge status, essential information can be gathered and tracked over time in the Cloud, removing on-site IT from the duty of on-going management of tracking platforms and desktop software. Employees can immediately find what they are looking for using a smartphone or other mobile devices.

In addition, long-term maintenance tracking of assets allows for better buying decisions when it comes time to repair or replace. Managers are able to use the data to make better informed decisions about company assets.

#### APPLICATION

A major U.S. construction equipment manufacturer needs to track the stages of components for final assembly to complete a customer order.

## SEMTECH'S LoRa TECHNOLOGY FOR SMART FLEET MANAGEMENT

### HOW IT WORKS

Semtech's LoRa Technology enables real-time connectivity, monitoring, cost savings, and analytics.

- 1 A fleet manager decides to track all in-use assets in real-time, across a large factory site. The company purchases LoRa-based sensors and gateways.
- 2 LoRa-based gateways are installed on site, typically within a 5 to 10 mile range in open areas. Gateways gather information from the sensors and can be provided by a private or public LoRaWAN™ network provider.
- 3 Fleet assets and individual components for the assembly process can be tracked, ensuring they are staged properly and in a timely fashion.
- 4 Cloud-based software is configured to collect all asset data and track it permanently. This information is stored long-term, handled by a Cloud-based software provider, and accessed via the web, mobile devices, desktops, and tablets.
- 5 Over time, data can be analyzed to track most commonly used assets and to reduce operation costs by improving fleet management.

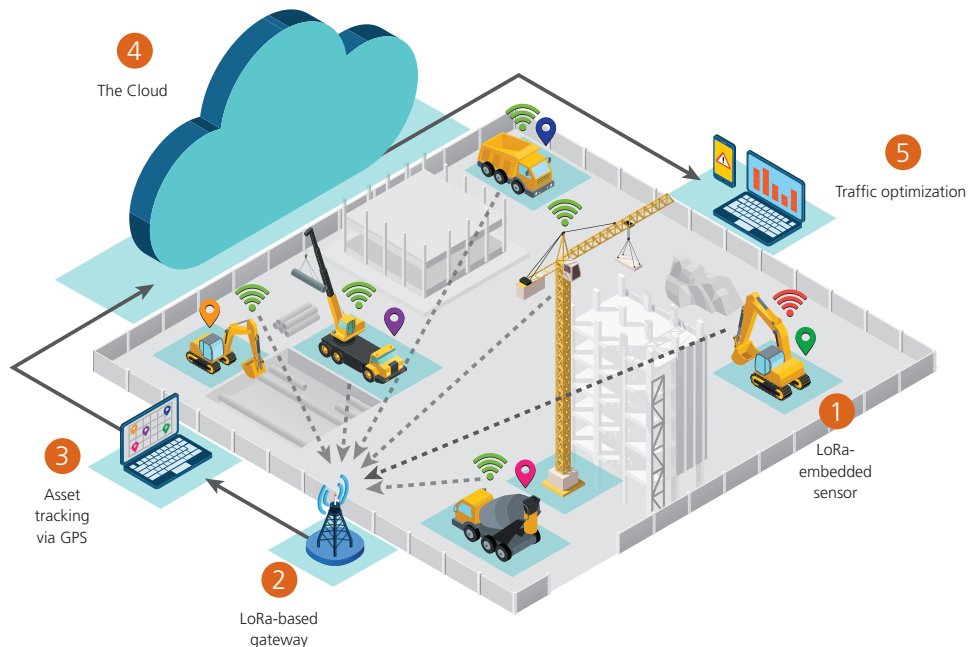
### REAL USE CASE SOLUTION

GlobalSat Worldcom is a major supplier of GPS and other location-aware electronic and communication solutions. In the past decade, GlobalSat has delivered a GPS tracking system, wearable and bike mount GPS personal training devices, GPS engine boards/modules, and a GPS receiver. The company has expanded its product line into healthcare and the IoT market.

GlobalSat provides customization services of electronic design, system integration and software development to meet customer-specific needs. Part of GlobalSat's expansion into IoT is its use of LoRa Technology and is partnering with other LoRa Alliance™ members to offer customized integrations that are targeting, among other applications, supply chain and logistics.

### LOW PER-UNIT DATA COST

Traditionally, per sensor data costs have been too high due to the usage of commercial cellular networks for the transmission of data and over-the-air updates. In a cellular network, single sensor devices could cost as much as \$8 to \$10 USD per month, but LoRa Technology can cost as little as \$20 USD per month for an entire fleet of hundreds of vehicles.



Semtech Products used in this application:

- |                |          |
|----------------|----------|
| Sensors        | Gateway  |
| • SX1272/3     | • SX1301 |
| • SX1276/7/8/9 |          |

All application elements (sensing modules, gateways, servers, software) are available through LoRa Alliance™ partners.

## REAL USE CASE SOLUTION CONTINUED

### STANDARDS-BASED

LoRaWAN™, a Low-power Wide-Area Network (LPWAN) specification, is an open standard and supported by the LoRa Alliance™. GlobalSat can sell products that have assured global interoperability and benefit from the economies of scale that reduce unit costs and further accelerate its adoption.

### SECURE

Multiple layers of security ensure devices are tracked safely. Central management of all devices ensures every piece of hardware on a network is up to date.

### LOW POWER

LoRa-based sensors can have very long battery lives. Some devices can last over 10 years on a single charge, with more heavily used devices lasting up to five years.

### HIGH CAPACITY

A single LoRa base station can handle millions of messages per day, ensuring GlobalSat's fleet tracking solution is able to support large, active customer bases.

### LOW PER-UNIT COST

LoRa Technology was designed to be affordable to hardware manufacturers and to enable developers to build quickly, reliably and within budget constraints. Additionally, LoRa Technology is easily available to manufacturers, ensuring there will not be shortages of supplies that can drive up costs.

## JUMP-START YOUR IOT DEVELOPMENT TODAY

### TRAINING OPTIONS TO GET STARTED



Learn about Semtech's LoRa Technology platform  
[www.semtech.com/iot](http://www.semtech.com/iot)



Join the LoRa Community  
[www.semtech.com/LoRaCommunity](http://www.semtech.com/LoRaCommunity)



Become a member of the LoRa Alliance™  
[www.lora-alliance.org](http://www.lora-alliance.org)



Attend a LoRa Boot Camp for a full-day of training featuring LoRa Technology and real world applications  
[www.semtech.com/iot](http://www.semtech.com/iot)



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