



Fleet Tracking

LoRa® APPLICATION BRIEF

DESCRIPTION

Vehicle fleets — of trucks, cars, ships, trains, planes, etc. — are the lifeline of many businesses that need to ship products or provide transportation services. With IoT fleet tracking, these businesses can reduce costs by keeping fleets in the field longer with better fuel economy, better safety, visibility into maintenance issues, and overall improvements to operational efficiency. Benefits of IoT-based fleet management include more data for better analytics, data driven decisions, driver coaching, real-time customer shipment updates, and lost or stolen vehicle tracking.

By implementing a fleet tracking solution comprised of sensors and gateways embedded with LoRa Technology and an intelligent low power wide area network based on the LoRaWAN™ protocol, organizations can help improve their logistics, thus reducing costs and improving transportation timeliness.

HOW A LoRaWAN-BASED FLEET TRACKING SYSTEM WORKS

Semtech LoRa Technology enables connectivity, real-time analytics, reporting, and additional functions such as geolocation.

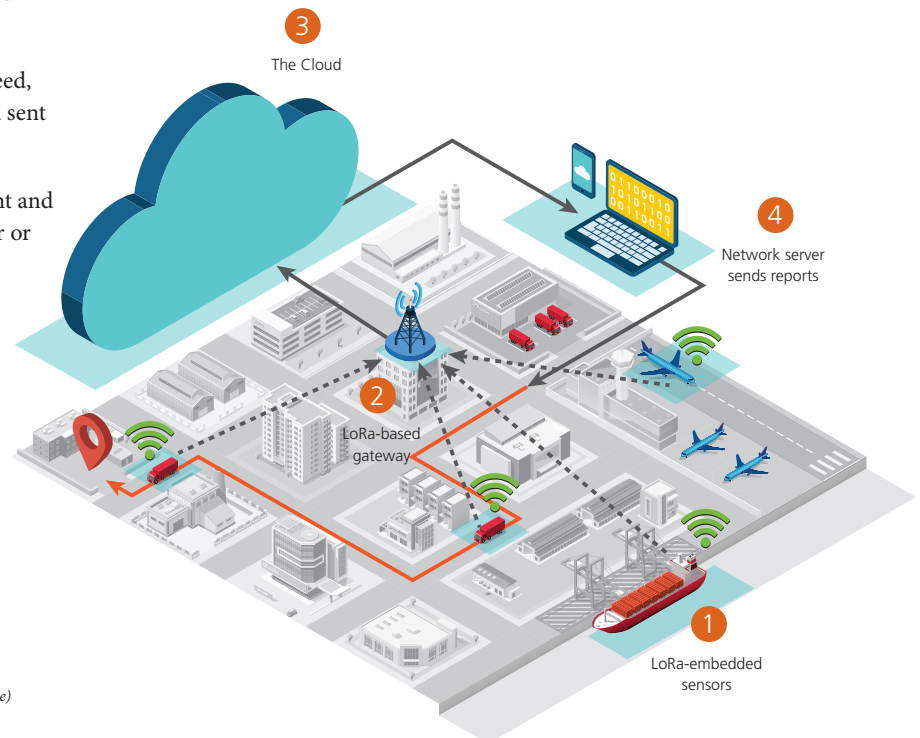
- 1 Location data collected by sensors embedded with LoRa Technology
- 2 Data from all sensors is periodically sent to a LoRa-based gateway as the vehicle moves
- 3 Gateway sends information to network server where speed, location, direction, and other variables are collected and sent to a specific application server in the Cloud
- 4 Application server sends reports and alerts on movement and safety of the vehicle to driver or supervisor via computer or mobile device

BENEFITS

- Improved fuel economy through route planning and driver coaching
- Predictive maintenance updates for planned repairs and reduced downtime
- Reduced accident rates and improved driver safety
- Identifies specific vehicle location in a parking lot such as a rental car lot
- Tracks lost and stolen vehicles
- Ensure vehicles do not cross certain restricted areas or geographies
- Easy to set up since sensors do not need to be connected to a power source — an entire fleet can be equipped in less than a day
- Reduced maintenance costs as low power operation ensures sensor batteries can last up to 20 years

APPLICATIONS

Track fleet vehicles to better manage their safe operation and improve profitability.



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.



FIND YOUR IoT SOLUTION FROM SEMTECH'S LoRa ECOSYSTEM

MODULES & MODEMS

SENSORS

BASE STATIONS

NETWORK SERVERS

SYSTEM INTEGRATORS

For a full list of LoRa Ecosystem partners and services, visit our LoRa Community www.semtech.com/LoRaCommunity

KEY FEATURES OF SEMTECH'S LoRa WIRELESS RF TECHNOLOGY

LONG RANGE Penetrates in dense urban and deep indoor environments, connecting to sensors 15-30 miles away in rural areas

LOW POWER Enables multi-year battery lifetime of up to 20 years or more

HIGH CAPACITY Supports millions of messages per base station

GEOLOCATION Enables tracking applications without GPS or additional power consumption

STANDARDIZED LoRaWAN specification ensures interoperability among applications, IoT solution providers and telecom operators

SECURE Embedded end-to-end AES-128 encryption of data ensuring optimal privacy and protection

LOW COST Reduces upfront infrastructure investments, as well as operating and end-node costs

JUMP-START YOUR IoT DEVELOPMENT TODAY

Semtech offers several training options to help you get started:



Learn about Semtech's LoRa Technology platform: visit www.semtech.com/IoT



Join the LoRa Community: www.semtech.com/LoRaCommunity



Become a member of the LoRa Alliance™: visit 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



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