

**BOSCH**

Invented for life

# Asset Tracking: How to get started with your tracking project

## Five key points to consider, from the right choice of technology to the degree of tracking accuracy

Tracking up-to-date information on the position and load status of shipping assets such as load carriers, truck trailers/ semi-trailers, locomotives, railroad engines and cars, and ocean freight containers throughout the supply chain is a multifaceted task. Before any tracking project can get off the ground, companies have to first determine exactly what their requirements are and pinpoint potential obstacles. This is the key to finding the right solution – that is, the combination of devices, technology, architecture, and functions that fits the use case best. Once businesses know what they need, they can opt for the tracking solution that will pay off over the long haul.

But what questions should companies be asking themselves to find that perfect solution? With many Track and Trace projects for load carriers to our credit, we have had ample opportunity to identify the five key questions that companies need to address.



### Where are you going to use the solution?

Companies have to define where they want to deploy the tracking solution. That could be anything from local to global. This way, they can narrow down their options to the tracking technologies available in the target regions. Radio coverage is certainly a factor. Sigfox, for example, is widely available in western Europe, but coverage is often spotty in eastern European countries such as Poland, Romania, and Bulgaria.

Businesses also have to comply with different regulations when tracking across national borders. The licensing rules for tracking software and hardware can vary from country to country. Enterprises also have to deal with issues such as waste disposal, local digital taxes, and customs procedures.

A tracking solution that also covers air cargo has to comply with certain security specifications. It has to be approved for air traffic by aviation safety agencies and its deployment coordinated with airlines.

Then there are safety rules for dangerous goods to consider. In Europe, companies have to comply with ATEX guidelines, among other regulations. For example, a company that wants to monitor gas shipments needs properly protected tracking devices that have been approved for use on tank containers.



To date, Lineas has connected 2,600 freight cars with Track and Trace and equipped them with gateways.



## What type of tracking do you need?

Businesses have to consider how often they want to receive data on the whereabouts of their cargo carriers such as trucks, semitrailers, locomotives, rail cars, and sea freight containers. The same goes for construction machinery and tools. Generally speaking, there are three ways of obtaining information:

- One is real-time tracking. This option provides detailed insights by delivering data to the user almost continuously – for example, every three minutes (20 times an hour). This can be done with all-in-one devices or a combination of sensors and gateways.
- Another approach is to have tracking devices send information at certain intervals, for example, one to five times a day, or to have certain events trigger transmissions.
- The third option is to have the tracking device simply log rather than send data, for it to be retrieved at some later point.

Companies can narrow down their choice of tracking technologies by defining the transmission intervals that will best serve their purposes. For example, LoRaWAN wireless technology can send no more than six packages an hour. Every ten minutes is just not frequent enough for real-time tracking, so this rules out that option. The frequency of data transmissions can also affect tracking devices' lifetime.

” Since the beginning of the cooperation we were able to increase capacity utilization of our fleet by more than 40 percent. “

Suzu Verachten, Project Manager Asset Management at Lineas



## What other parameters play a role?

Tracking solutions can do more than merely pinpoint load carriers' locations. They can also take temperature readings, monitor humidity levels, log shock events, and the like. Companies have to consider if any of these variables need tracking. In some cases, they may be compelled to do so. If either is the case, the next question concerns tracking accuracy and tolerance: How precise do the tracking tools have to be and what is the margin for error?

These specifications have to be very well-defined when there are regulations to follow. For example, retailers have to meet temperature specifications when transporting refrigerated goods. They have to opt for a solution that takes these readings exactly as stipulated.



nox NachtExpress has already equipped 8,500 load carriers with sensors and is planning to extend this cooperation.



## How long is the tracking device going to be in use and how high are the up-front costs?

The battery life of the tracking devices can be a limiting factor in tracking projects. Companies should be thinking about the projected service life from the outset. They also need to bear in mind the cost of load carriers. Planning errors made at this stage will result in considerable overhead and drive up costs.

Automakers, for example, buy millions of load carriers for one generation of vehicles, and then use them for around seven years. Tracking devices need to last just as long.



## How precise should the tracking solution be?

Some applications, particularly indoors, require locational information to be accurate to a centimeter. Indoor solutions use different technologies to provide that kind of precision. In contrast, end-to-end tracking solutions cover the entire supply chain, but are not as accurate as systems made specifically for indoor applications – at least not without add-ons.

Companies should factor accuracy into the equation when weighing their options: Does precision matter to your use case, and if so, to what degree? Will an expensive indoor solution pay dividends for your company or are you better off with the less detailed but far more comprehensive view provided by an end-to-end tracking system?

” While our employees previously had to keep records of the number of load carriers and search for missing containers, they now have a clear overview at a mouse-click. “

Henry Kussatz, Business Development Manager at the logistics service provider nox NachtExpress

© noxNachtexpress

## Start your tracking project with Bosch.IO

The answers to these questions will put you on the right track to the approach that serves your organization well within the confines of your budget. Of course, a number of other factors can play a role in your decision. We will be happy to advise you. Let's work together to find the tracking solution that works for you.

## Learn more about the asset tracking solutions from Bosch.IO



Track and Trace: [Our solution](#)



Learn more about asset tracking



Follow [Bosch\\_IO](#) on Twitter



Get in touch



Follow [Bosch.IO](#) on LinkedIn