

The essential role of IoT connectivity for asset tracking

CONNECTIVITY

POSTED ON 06.30.22

In order to fully understand the importance of IoT connectivity in asset tracking, one must first understand the magnitude of this industry. An asset can be just about anything—from a piece of medical equipment in a hospital, to a gold bar in an armored vehicle, a cow roaming the fields or even a single toothbrush sailing across the ocean aboard a container ship. Now tracking that asset, especially in our hyper-connected and globalized world, requires on-demand, real-time location updates, whether that asset is sitting inside of a warehouse in the middle of a city, rumbling through a mine on a remote site or traveling cross country on a freight train.

IoT asset tracking digitally connects these assets so that they can be remotely traceable at any given moment. The benefits of this data are substantial: zero time wasted searching for assets, real-time monitoring and increased security to prevent theft, to name a few. Because of its highly diverse applications across a number of industries, IoT asset tracking is burgeoning. In fact, experts anticipate that 267 million active asset trackers will be in use worldwide by 2027¹.

An asset tracker is only as reliable as its network

Tracking an object anywhere and everywhere requires reliable global cellular network **connectivity**. In order to access networks, asset trackers must first be equipped with SIM technology. This starts with the streamlined and secure **distribution of SIM credentials over the air**. In addition, considering the value of tracked assets, it is also vitally important to integrate IoT SAFE standards to protect asset tracking applications and **guarantee that the data sent is secure and accurate**.

IoT connectivity is different from what you would need to stream a movie or send a video to a friend. IoT asset tracking generally requires **sending small amounts of data intermittently**, just enough to indicate the object's location. Low power wide area networks such as Narrowband and LTE-M are particularly suited for tracking assets in movement—ensuring that the asset tracker is able to send location data even when network connection is unstable or spotty. These robust and resilient networks also **consume very little energy**, which is ideal for assets on the move without an embedded power source.

Lastly, in order to **prevent fraud and theft and resist harsh conditions** such as extreme temperatures and humidity, security and robustness of the SIM technology are crucial elements to ensure the continued connectivity of tracked assets.

What industries can benefit from asset tracking?

The ability to use and/or circulate assets touches just about every industry on the planet — meaning they all stand to gain from tracking their assets in real time. The sheer number of applications for IoT asset tracking is considerable—but here are just a couple of examples:

In **mining**, asset tracking technology can monitor the whereabouts of large and expensive vehicles, thus reducing risks in terms of theft and accidents. As mining operations are generally remote, open air facilities, deploying **private cellular networks** is a good way of guaranteeing the coverage and reliability needed for IoT asset tracking to function efficiently.

One of the most common asset tracking applications is in **supply chain and logistics**. Truck tracking is already widely deployed, as it improves the operations of logistics companies in terms of efficiency, maintenance and merchandise security, and therefore their bottom line—not to mention their reputation, as losing goods becomes a thing of the past.

The benefits are also clear for cargo ships. As **containers** can be at sea for weeks with no embedded energy source, reliable tracking requires low energy devices that remain activated until the opportunity to communicate their position presents itself, typically at every port by connecting to the cellular network.

How will 5G boost asset tracking

As the deployment of 5G networks continues to expand and bolster cellular network coverage, the efficiency of asset tracking will follow suit. Access to 5G networks means **better coverage, network security and reliability**—all of which, in turn, requires less energy to send data to the network. As 5G evolves, so too will asset tracking capabilities and use cases.

¹ <https://www.prnewswire.com/news-releases/industrial-iot-asset-tracking-2019-by-2027-there-will-be-267-million-active-rfidasset-trackers-in-use-worldwide-300851946.html>
