

Let's get practical about IoT in **logistics & transportation**

Is it really about self-driving vehicles and robots directing traffic? Maybe someday. Right now, it's about gaining higher performance and profit from your fleet.

Globalstar 



You know the problems.

The economy moves on the bed of trucks and trailers. On an average day, more than 3 million drivers haul over 70% of the goods that households buy.

That adds up to 3 million opportunities to save time, save money and boost business performance – just by solving the longstanding problems that trucking companies face every day.



Challenges in transportation



Wasting time **walking the yard**

It's an old and unloved tradition: wasting time and money walking the yard to find available trailers. The records show they are out there somewhere, but where exactly? Nobody knows.



Tracking down **trailer detentions**

Detentions by customers waste as much as 40 percent of an average trucker's day, according to MIT research. That's money out of their pocket: \$1.2 million a year for America's truckers, according to the Department of Transportation. Detention fees are supposed to help, but these can be tough to collect if customers dispute the additional time.



Keeping **trucks and trailers moving**

The time that trucks and trailers spend in maintenance is time they are not making money. Are you scheduling maintenance often enough? Too often? How can you tell? And how can reduce breakdowns on the road that cost more and delay deliveries?



Keeping **drivers safe**

It can be lonely out on the road – especially through the long stretches where cellular coverage fades away. That translates into danger for drivers, from risky driving, accidents and breakdowns – and from driving too many hours and resting too few, which also puts the company at risk.



/ What can IoT do about it?

Smarter trailers

An integrator working with Globalstar deploys the company's GPS satellite data transmitters on the trailers of its logistics customers. Powered by solar energy, the transmitters ping the location of each trailer, and the resulting location data is displayed on a detailed digital map. Software simplifies the job of assigning trailers to drivers and drivers use a mobile app to navigate to their trailer. For drivers, the application saves time, fuel and wear and tear on vehicles. One company estimates that it avoids \$100,000 in costs per year by eliminating yard checks in just six locations.

Those savings may just be the start. When you know where every trailer is and what condition it is in, the need to rent or purchase extra trailers goes out the window. One company using this technology avoided a \$1 million purchase of trailers because it could confirm it already had all the trailers it needed. Companies also put a big dent in theft, because truck or trailer thieves leave a digital trail behind them thanks to geofencing technology that triggers alerts to unexpected movement.



What can IoT do about it?



Smarter Detentions

Dwell time – when trailers stay at a customer location past their deadline – is billable. But customers can dispute the amount of time the trailer was at their location, and in a highly competitive business, arguing with the customer is not a winning proposition. An integrator uses the same time-stamped GPS location data transmitted by Globalstar devices to feed an application that tracks detentions and automatically generates invoices providing complete detail on dwell time. Using the application, a major North American carrier generated an extra \$80,000 per month in dwell time revenue from its 1,000-truck fleet.



Smarter Maintenance

An integrator of Globalstar technology installs sensors in trucks to monitor engine run-time, temperature, oil pressure, tire pressure, speed and other critical factors. Other sensors integrated into trailers precisely measure start and stop motion, location and utilization. The stream of data transmitted from the assets through the Globalstar Satellite Network enables software to predict the real maintenance needs of both trucks and trailers – which can be different, given the average of 2.5 trailers per truck. Compared with time or mileage-base maintenance, the system keeps trucks on the road longer but runs them at lower total cost of ownership.



Smarter driver safety

The same sensors that help predict maintenance needs can also identify harsh braking, speeding and taking sharp turns. Alerts to dangerous driver behavior can trigger corrective action, from warning to retraining, to keep trucker drivers and others on the road safer. The data can also track how long drivers work and how often they take breaks, which eliminates a lot of manual record-keeping to comply with regulations.

Safety on the road is also personal. Cellular service is not available everywhere, and drivers value having a satellite GPS Messenger that lets them exchange messages and report their location wherever the road takes them.



Globalstar IoT, Asset Tracking and Messaging

Globalstar provides end-to-end IoT data solutions as well as dedicated asset tracking technology. Both offer what we call Smart Data: just the GPS and/or sensor data you need, provided reliably and securely at an affordable cost over most of the world.

Realm Enablement Suite for IoT

The Realm Enablement Suite is Globalstar's edge-to-endpoint, AI-enabling solution for IoT, built on edge hardware, an ultra-reliable network and the Realm Cloud. Realm slashes development time while supporting your most advanced applications at the edge.

AT THE EDGE

- Integrity 150 is a next-generation, solar-powered data transmitter that interfaces with industry-standard sensors over Bluetooth and has the processing power to run applications at the edge to speed performance and responsiveness. For Integrators, the ST150 provides the same features in a modem module version to incorporate into their products.
- Edge Applications Platform. A low-code platform unlocks the power of these devices, providing access to device firmware, hardware and sensor apps that slash hundreds of hours of development time.

ON THE NETWORK

- Data is transmitted reliably and securely over the Globalstar Satellite Network for delivery to your designated endpoint. It may be Realm Cloud, servers on your premises or one of many third-party IoT platforms on the market.
- The Network consists of nearly 50 satellites in low Earth orbit covering 120 countries, served by 24 ground stations around the world that connect to Globalstar's data center.

IN THE CLOUD

- Realm Cloud enables you to manage devices, configurations and subscriptions, as well as translate and manage data delivered by the network to produce analytics and dashboard visualizations.
- A multi-tenant environment with an elastic infrastructure that grows with you, Realm Cloud delivers a rich array of features that lets your team focus on creating IoT applications and integrations, while leveraging our platform features for all the rest.



Why the “edge” matters

Processing on devices at the edge of the network has become one of the biggest trends in information technology and IoT. The tech research company Gartner predicts that, by 2025, more than half of all enterprise data will be created or processed outside the data center.

Why? Because a new generation of small, low-cost devices are now capable of doing some serious processing of their own – and Realm edge devices and modules are among them.

When asked why they are driving processing to the edge, customers cite –

32% Faster Data Processing

23% Faster & more responsive customer service

22% Reduced computing resources

18% Lower data transmission costs



Taking Action

Dedicated Asset Trackers on the Globalstar Satellite Network

Applications running in edge devices can respond to conditions and take action immediately. Detection of an open door, low tire pressure or temperature problem can do more than send data to the trucking company – it can trigger an audible alarm or send messages to the driver on the spot. As an added benefit, these applications show drivers that the system helps them succeed instead of just giving managers another way to monitor their every move.



INTEGRITY 150

Integrity 150 delivers zero-maintenance ownership with the longest-lasting battery (10+ years) and shelf life available. With its low-power design built for the world's most challenging environments, the Integrity 150 reliably delivers secure location reporting and sensor data transmission to monitor critical functions.



SMARTONE SOLAR

SmartOne Solar is the only solar asset tracker certified as Intrinsically Safe with ATEX Zone 0 standards as well as HERO (Hazard of Electromagnetic Radiation to Ordinance) for use in hazardous environments. Virtually maintenance-free with up to 10 years of usable service, it's easy to install - requiring no harnesses, external power, or external antennas.



SMARTONE C

The market's most affordable and feature-rich tracker for locating fixed and mobile assets and transmitting sensor data. Line or battery-powered, it is a small, easy-to-mount unit that is ideal for sending GPS coordinates at long intervals and configurable for various frequency rates.



SPOT TRACE

SPOT Trace is a small, discrete tracker that tracks mobile assets by providing location pings as often as every 2.5 minutes for display on a customizable user dashboard. This easy-to-use turnkey device offers simplified tracking at the lowest cost.



/ Taking **Action**

Dedicated Asset Trackers on the Globalstar Satellite Network



/ **DIGITAL MAPPING**

Digital mapping that turns GPS location and data from the field into actionable visual intelligence. It provides high visibility of all in-field resources, geofencing that can trigger alerts to atypical changes, and advanced reporting capabilities.

GPS Satellite Messengers



/ **SPOT X 2-WAY SATELLITE MESSENGER**

SPOT X GPS Messengers connect to your smart phone via Bluetooth wireless technology through the SPOT X app to access your contacts and communicate easily with colleagues.



/ **SPOT GEN4 SATELLITE GPS MESSENGER**

SPOT Gen4 GPS Messengers provide an inexpensive, reliable way to report locations, use pre-set messaging for check-in and have access to an SOS button to signal the need for emergency assistance.



Getting practical about IoT

Maybe someday the trucks will drive themselves and robots will wave them through the intersections. But today, IoT, asset tracking and messaging are just rugged, hard-working technologies that can deliver big value – if you take a practical approach to meeting your needs in the most cost-effective way. That's what Globalstar has delivered since its first satellite began operating in 2000, and what we will keep delivering in the future.



Why Globalstar?

Globalstar helps people connect, communicate, and transmit data in smarter ways.

As a telecom infrastructure provider, we offer reliable satellite and terrestrial connectivity that's simple, fast, secure and affordable. With our low-earth orbit (LEO) satellite network, we connect and protect assets, transmit key operational data and save lives — from any location — for consumers, businesses and government agencies in over 120 countries.

Globalstar's terrestrial spectrum, Band 53, offers carriers, cable companies and system integrators a "borderless" fully-licensed channel with a growing ecosystem to help our partners improve wireless connectivity. We also leverage our excess satellite capacity to develop IoT and other deployments for wholesale customers.

In addition to our SPOT GPS messengers that connect people in remote environments, Globalstar offers next-generation IoT hardware and software products that efficiently track and monitor assets, process smart data at the edge with AI-enabled applications and manage analytics with cloud-based telematics solutions — all of which drive safety, productivity, and profitability.

We transform smart ideas into smarter solutions.

*To learn more about how
Globalstar can benefit
your business, contact us at
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/ Logistics and Transportation

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