WHITE PAPER: SPIREON - RICH DATA

Where Rich Data Becomes Real Intelligence: Best Practices for Driving ROI on Your Trailer Tracking System.

THE RICHER YOUR DATA, THE GREATER YOUR ROI

It's a fact: Better trailer management requires better visibility. To manage your trailers more effectively and efficiently, you need to see not only where your trailers are right at this moment, but also where they've been, where they're going, and any stops they've made along the way. Which means, your trailer tracking system should be doing much more than locating your trailers once or twice daily. Ideally, it should connect you to a continuous stream of rich data that supports faster, smarter, more profitable business decisions.

Seeing your trailers' location is good. Seeing a rapid return on your trailer tracking investment is even better. Solutions that provide instant access to an unprecedented level of real-time trailer intelligence, giving operations managers and dispatchers complete visibility into their fleet — that's what we define as rich data. Most trailer tracking solutions, however, provide only limited, outdated and inaccurate snapshots of trailer locations — often leading to decisions based on gut feelings or, even worse, bad information. We call these systems low data, and they typically result in unrealized bottom line improvements.

So how can you tell if your trailer tracking solutions is indeed connecting you to the real-time rich data you need to drive your fleet performance and your bottom line? In this paper, we take a close look at the critical questions to ask your provider before selecting a trailer tracking system.
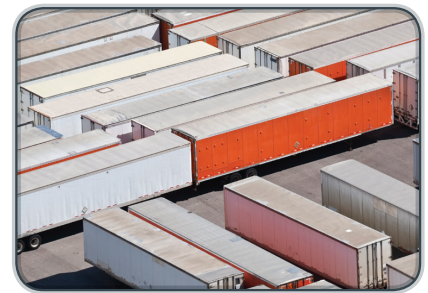
WHAT WILL YOU DO WITH YOUR RICH DATA?

Having access to rich data comes with a host of very real advantages. A trailer tracking solution that captures and delivers a wealth of real-time data allows you to:

- Maximize your trailer utilization — allowing you to do more with fewer trailers
- Optimize trailer pools and refine contracts
- Increase turns per trailer
- Encourage customers to unload your trailers first
- Empower dispatch and maintenance to respond more quickly and efficiently
- Automate time-consuming manual tasks such as yard checks
- Eliminate route deviation and unauthorized trailer use
- Improve workflows, staff productivity and efficiencies
- Improve the accuracy and efficiency of billing
- Streamline maintenance based on trailer mileage
- Right-size and even reduce your trailer fleet in some instances
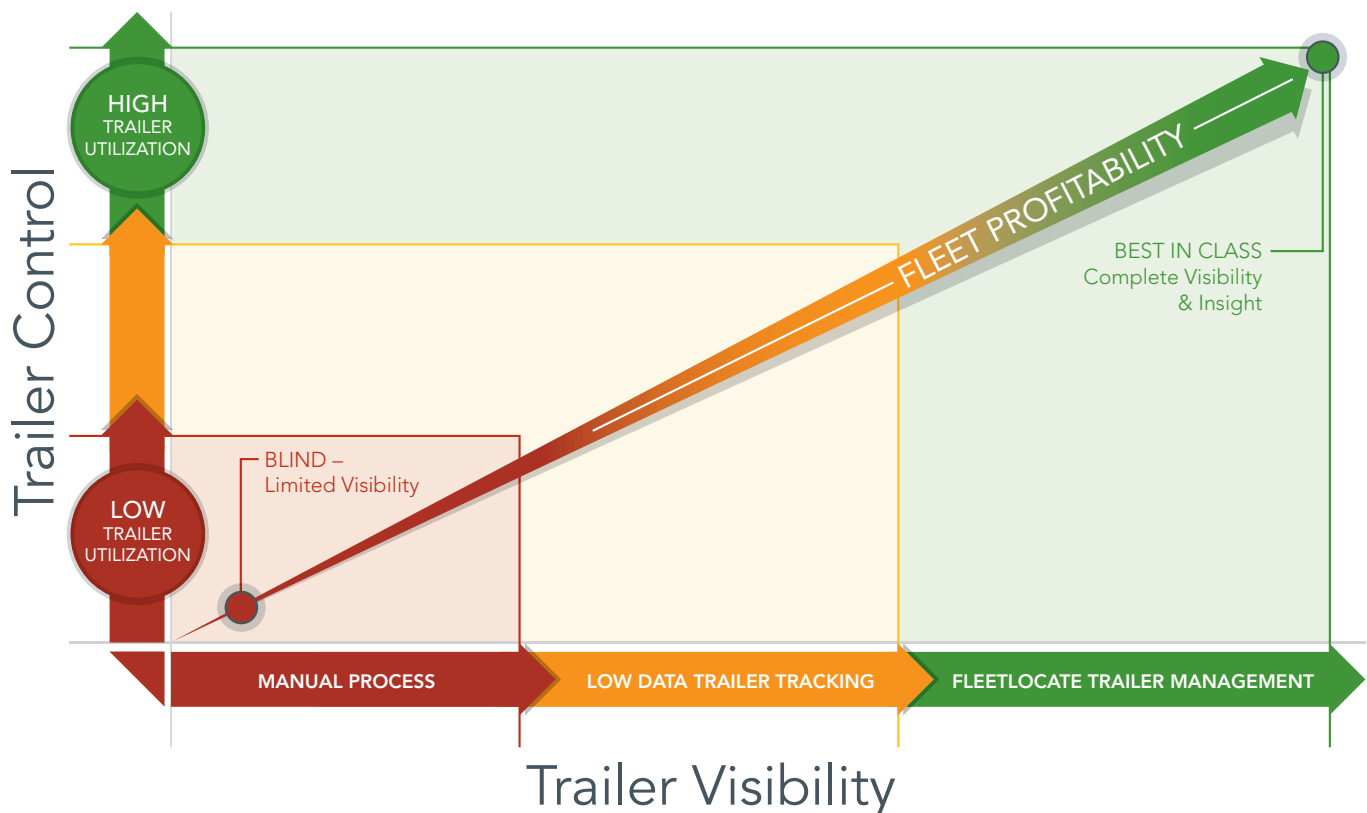
QUESTIONS TO ASK YOUR TRAILER TRACKING PROVIDER
Many solution providers will tell you that their solution delivers all the data you need. Don't be too sure. Performing due diligence when it comes to assessing the quality of data captured by your trailer tracking solution could end up saving you significant time, resources and money. So before you select your solution, ask the provider these ten questions to determine whether you'll be saddled with low-value low data or empowered with real-time rich data.

1. What type of real time visibility does your solution provide?

LOW DATA SYSTEMS MEANS LIMITED VISIBILITY
Low data systems typically give you one of two options:
1) Access to motion-based start and stop data; or
2) Access to time-based data rarely.

Either way, with motion- and time-based systems you wind up with limited visibility of your trailers while they're in motion — making these systems ineffective tools for managing your trailer pools and tracking trailer mileage.

RICH DATA SYSTEMS FOR REAL-TIME INTELLIGENCE
Your solution should capture and deliver both motion-and time-based data, resulting in more timely, accurate intelligence. For instance, if a trailer stops for less than an hour to unload a partial load, the rich data system will send you an alert to let you know. With a low data system, this stop would have gone undetected.

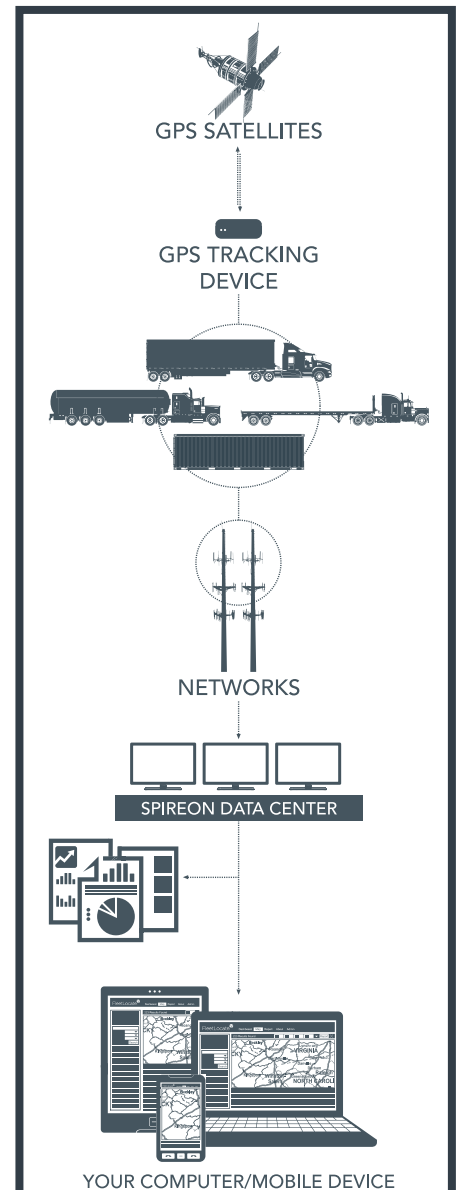The key difference here is that rich data systems provide continual

real-time visibility. Ideally, these systems collect and transmit GPS positioning — latitude, longitude, state, city, and even the street name — for every trailer in your fleet, every ten minutes. At no extra cost to you. Should you need to see the location of a trailer with even greater frequency, be sure to look for a system that also allows you to view positioning data on demand. This requires a system with high-sensitivity GPS that tracks trailer activity continually. Only then can you be sure you have the most current, up-to-date and accurate location of your trailers as well as an accurate count of miles traveled.

Your system should also provide you with the location of trailers that are not only in motion, but also sitting idle. Look for a solution that captures and delivers a 24-hour heartbeat when trailers are inactive, thus saving battery life while keeping you informed of the trailer's location.

Beyond trailer location, a rich data solution will provide turn-by-turn mileage for each trailer, enabling you to schedule preventative maintenance based on actual miles traveled. This additionally enables you to provide accurate mileage billing to leasing customers, eliminating billing disputes and hub odometers. You should also be able to track and monitor each trailer's heading and speed, data that will allow you to conserve fuel consumption as well as reduce driver speeding, insurance premiums and risk.

In addition to real-time visibility, your trailer tracking solution should also allow you to access a wealth of historical data. This will enable to you accurately measure your trailer fleet performance — and thus your ROI — across time as well as a broad range of metrics. Rich data systems will provide historical breadcrumbs, as well, enabling you to easily recreate a trailer's actual route and load for insurance and litigation purposes, or to remedy a dispute.

Last but not least, it's important to make sure your trailer tracking system provides the latest cellular technology. This will ensure reliable coverage even in rural areas, a higher capacity for data communications, while accommodating your particular geographical needs.

GPS SATELLITES

GPS TRACKING DEVICE

NETWORKS

SPIREON DATA CENTER

YOUR COMPUTER/MOBILE DEVICE

Rich data systems collect and transmit GPS positioning — latitude, longitude, state, city, and even the street name — for every trailer in your fleet, every ten minutes. Your rich data system should allow you to see which trailers are in motion, which are stopped, which are being powered by the tractor, and when ones have their doors open. Plus they provide real-time events like door status, cargo status and tractor power on/off. That's fleet visibility.

2. What is your power management strategy?

LOW DATA SYSTEMS — LONG ON BATTERY LIFE,SHORT ON INTELLIGENCE

Low data systems will tell you they don't need a power management strategy to deliver your data. That's because these systems only deliver limited snapshots of your trailer location, often a few times a day.

RICH DATA SYSTEMS — POWERING FASTER, SMARTER DECISIONS

Any trailer tracking solution that truly captures and delivers rich data must have an effective power management strategy in place. This strategy should maximize and extend battery life so that you can continue to access your rich data in real time, without disruption. Before you select your system, find out how many days of stand-alone power the system provides when unhooked from the tractor. A rich data solution with a power management strategy in place should provide between 60 and 90 days of stand-alone power.

Look for a system that comes equipped with a rechargeable battery with extended battery back-up. So if a trailer is sitting in a yard unpowered for an extended period, the system can continue to provide you with that trailer's location data. And make sure that no data is lost when the battery does deplete.

Given that rich data trailer tracking uses the J560 7-pin and the stringent regulations surrounding ABS malfunctions, it's also important to know when a trailer is moving without power and when the battery voltage becomes low. Look for a system that alerts you to both these issues, while also employing strategies to recharge internal batteries. And finally, find out how the

Your Rich Data Checklist	
To realize the maximum ROI on your trailer tracking system, look for a solution that provides the following rich data for better business intelligence.	
☑	*Both motion- and time-based data*
☑	*Continual real-time visibility*
☑	*Turn-by-turn of miles traveled per trailer*
☑	*Location of trailers not in motion*
☑	*Notifications when tractors are powered on and powered off*
☑	*Alerts when doors are open or closed*
☑	*Trailer heading and speed*
☑	*Documented arrival and departure times*
☑	*Historical data and breadcrumbs that allow you to recreate actual routes*
☑	*CDMA — enabled cellular network capabilities*
☑	*Trailer load status — is it loaded or empty*
☑	*FSMA compliance through temperature monitoring*

solutions provider ships the battery. Is it shipped in, fully charged and in hibernation mode to ensure it's ready to use, right out of box? Bottom line: Choose a trailer tracking system that provides the ample power you need to take full advantage of your rich data.

3. How will your solution provide the service availability, scalability and security I need for the future?

LOW DATA SYSTEMS CAN LACK ROBUST PLATFORMS
Beware of the solution providers whose system relies on a single server stashed somewhere in a closet. Low data systems typically have no robust platform in place to support the level of service and data availabilty you need to make faster, smarter, more profitable business decisions. These systems will often get bogged down and bottlenecked during periods of peak demand, resulting in delayed access to the data you want and need to see.

TRAILER COST:	
1 Trailer =	$25,000
400 Trailers =	$1 Million
Do you really want to guess on location and status of $1 Million?	
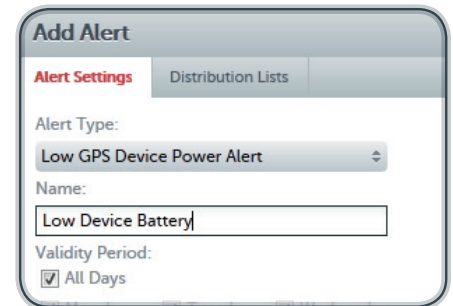
Rich data systems will provide historical ten minute breadcrumbs… enabling you to easily recreate a trailer's actual route and load.

"Two of Covenant Transports key objectives are DRIVER SATISFACTION and EXCELLENT CUSTOMER SERVICE. FleetLocate supports us in both of these areas by making better use of our drivers' time with no wasted trips looking for trailers.**"**

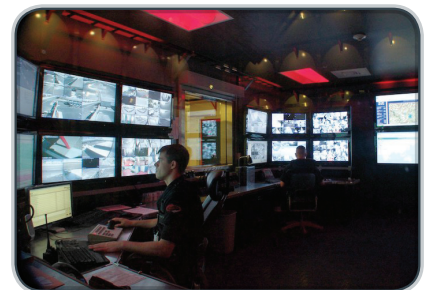– **Scott Flerl**, Director of Asset Management, Covenant Transport
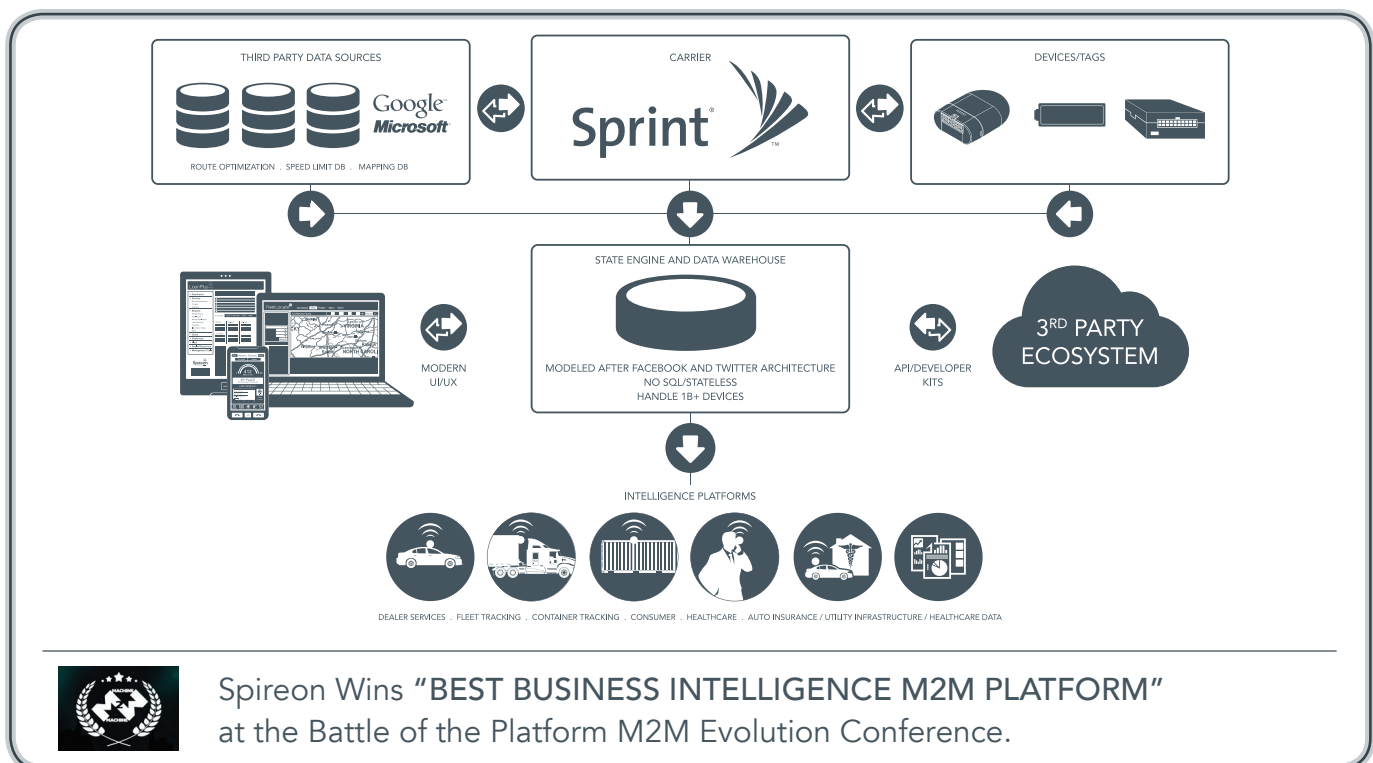
RICH DATA SYSTEMS DELIVER THE PROMISE OF M2M

Rich data systems deliver the power of machine-to-machine (M2M) technologies to connect fleet managers and operators to a wealth of valuable data captured at the trailer level, delivered directly to the customers' desktop, laptop or mobile device. When comparing trailer tracking systems, be sure to ask about the platform that supports the system's features and functionality. The most effective rich data solutions will be built on an M2M platform that provides superior service availability and reliability, scalability and security to keep you connected to your critical data whenever you need it.

A robust M2M business intelligence platform will ensure that you have rapid, continual and reliable access to your data regardless of the number of system subscribers or the demand on the system's computing resources. The platform should incorporate multiple levels of redundancy and data back-up to ensure none of your data gets lost or is temporarily unavailable in the event of system component failure or other disruptive event.

Can Your Battery Communicate With You?

An asset and trailer intelligence solution should include an intelligent battery system as well — one that communications critical information about battery, trailer and tractor performance directly to you.

THIRD PARTY DATA SOURCES

ROUTE OPTIMIZATION . SPEED LIMIT DB . MAPPING DB

CARRIER

DEVICES/TAGS

STATE ENGINE AND DATA WAREHOUSE

MODERN UI/UX

MODELED AFTER FACEBOOK AND TWITTER ARCHITECTURE
NO SQL/STATELESS
HANDLE 1B+ DEVICES

API/DEVELOPER KITS

3RD PARTY ECOSYSTEM

INTELLIGENCE PLATFORMS

DEALER SERVICES . FLEET TRACKING . CONTAINER TRACKING . CONSUMER . HEALTHCARE . AUTO INSURANCE / UTILITY INFRASTRUCTURE / HEALTHCARE DATA

Spireon Wins **"BEST BUSINESS INTELLIGENCE M2M PLATFORM"** at the Battle of the Platform M2M Evolution Conference.
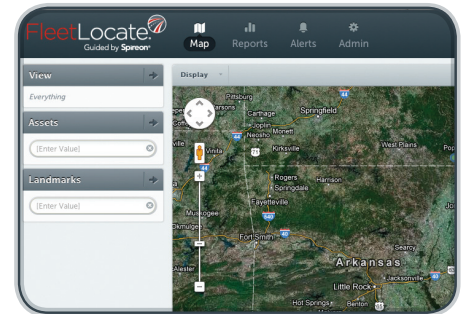
With the right M2M platform in place, your rich data trailer tracking system will also provide supreme scalability, expanding seamlessly to accommodate your fleet whether you're sizing it up or down. Also look for a rich data system that provides unlimited data with no extra charges, regardless how large your fleet. So if you add more trailers or even more sensors to capture data on your existing trailers, your bill will continue to look the same.

The best M2M platforms will deliver not only your data, but a superior level of security. Look for a system whose environment is comprised of top-tier data centers that enforce stringent security protocols. Your provider should also take extraordinary measure to encrypt your data as well as provide a private environment that prevents your data from being exposed or vulnerable.

In addition to standard reports, your rich data solution should allow you to easily generate and customize reports on the fly, revealing specific information most relevant to whoever is reading the report.

4. What type of actionable business intelligence does your solution provide?

LOW DATA SYSTEMS WITH DELAYED REACTIONS
With limited access to often outdated data, low data systems actually lower your business intelligence. By the time low data systems transmit the captured data to you reports, that information is often several hours old. Reporting intervals in low data systems are slow, so the information you get is not only outdated, but also infrequent. You don't want to make critical decisions based on limited information that's no longer accurate or relevant.

While other M2M providers purge historical data from their systems to keep them from impacting performance, we continue to store all data captured by your devices where it's readily accessible.

RICH DATA SYSTEMS INCREASE YOUR TRAILER IQ

In addition to capturing a rich level of accurate and timely data, your trailer tracking system should quickly serve up this data as actionable business intelligence. Look for a system that translates raw rich data into useable, understandable information via user-friendly interfaces, reports and alerts that are easy to understand and customizable to reflect your requirements and environment.

For instant intelligence, the system should come with automated reports that highlight key performance indicators that let you measure your fleet across multiple specific areas, including miles traveled per state/day/month, trip/route history, state line crossing, maintenance schedules, and more. Sentence fragment. Also, I'd take out the hyphen in "real-time" in this instance, or at least close up the apparent space after the hyphen. With access to this instant information, you'll be able to optimize your trailer utilization, increase turn rates and reduce maintenance costs.

Rich data systems deliver the power of M2M (machine-to-machine) technologies to connect fleet managers and operators to a wealth of valuable data captured at the trailer level, delivered directly to the customers' desktop, laptop or mobile device. Rich data is about giving you exactly the information you need, in exactly the format you need to see it.

5. What is involved in deploying and using your system?

Rich data solutions built on a Software-as-a-Service or cloud-based model simplify deployment, with no complex hardware or software to implement, manage and train on. Look for a trailer tracking system that provides web-based access to easy-to-use intuitive interfaces. Reports should also be easy to set-up, read and interpret, with at-a-glance views of actionable business intelligence. The system should require minimal training to use, but look for a solutions provider that offers onsite as well as field training for your team and staff.

Rich data solutions built on a Software-as-a-Service or cloud-based model simplify deployment, with no complex hardware or software to implement, manage and train on.

6. What do you offer in terms of installation, training and ongoing support?

LOW DATA SYSTEMS CAN LEAVE YOU STRANDED

With the majority of low data systems, you're on your own once the system has been purchased. Low data systems often come with GPS devices that are difficult and complex to install, and involve significant wiring on the part of the installer. Many low data solution providers do not provide turnkey services, including installation or training. And reaching a customer support rep when issues arise can be a significant challenge.

**RICH DATA SYSTEMS SUPPORT YOUR LONG-TERM SUCCESS**

Rich data systems should come with world-class customer service — from installation to training to ongoing support. Start by looking for a trailer tracking system with simple-to-install devices that requirement minimal wiring, as well as options for under trailer or covert installations. If you prefer to outsource the installation, choose a solutions provider that offers this service for you. During the installation process, your solutions provider should also keep you in the loop via on-going communications. Ask your provider if it provides an application that allows you to check the install status using a smartphone or other mobile device.

Ask the solutions provider about its implementation services and plans. Does it provide professional installation services performed by certified trainer installers? Does it assist in training your team to use the system and all its features and functionality? And does it provide ongoing support to ensure the maximize performance of your system? Look for a provider that offers 24/7 customer support to answer your questions, troubleshoot issues, and ensure the proper operation of your devices.
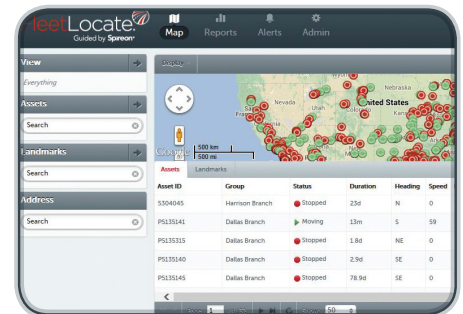
Choose a trailer tracking system that provides the ample power you need to take full advantage of your rich data.

Look for a system that translates raw rich data into useable, understandable intelligence via user-friendly customizable interfaces and dashboards.
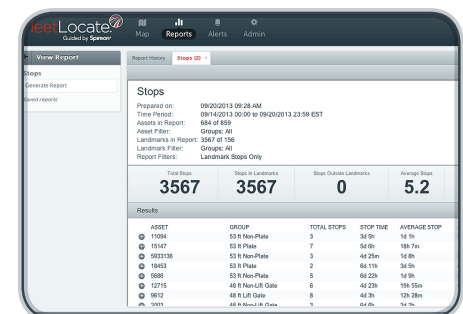
Your trailer tracking system should do much more than locate your trailers once or twice a day. Ideally, it should connect you to a continuous stream of rich data that supports faster, smarter, more profitable business decisions.

7. How do you demonstrate ROI?

LOW DATA SYSTEMS MEANS QUESTIONABLE ROI
A low data system is limited in the information it can capture and deliver. Most will not be able to provide any sort of meaningful metrics that allow you to measure the performance of your fleet across multiple areas, nor across time.

RICH DATA SYSTEMS LEAD TO DEMONSTRABLE ROI
As part of their complete solution, rich data providers should have a proven methodology in place for modeling, predicting and demonstrating measurable ROI. Partner with a provider that will work closely with you to develop a compelling case for implementing a rich data trailer tracking system backed by a convincing proof of concept. Look for a provider that will identify those key business and process areas you need to improve as well as the challenges you need to resolve.

Rich data providers have access to the analytics required to create a predictive ROI model for your solution. The provider should also be able to develop and launch a pilot program based around your specific challenges, requirements, and fleet that allow you to test not only the system in action, but also the ROI model and its projections. Based on the outcomes of this pilot launch, the provider should be able to tweak the solution to achieve the desired returns and roll the solution out across a larger fleet sampling or an entire fleet. With access to rich data, you'll be able to monitor and measure your ROI.

Convenant Transport Realizes Returns From Rich Data

A trucking company specializing in expedited coast-to-coast deliveries, Covenant Transport had struggled with the limitations of its low data trailer tracking system which, allowed it to ping the system only once a day. The company was waiting up to two hours to see trailer locations.

"Two of our company's key objectives are driver satisfaction and excellent customer service," explains Scott Flerl, CTG's Director of Asset Management.

After switching from its low data tracking system to a rich data asset and trailer intelligence solution, Covenant Transport saw an immediate improvement in visibility and utilization.

- Quickly pinpoint the exact location of trailers in real-time
- Save substantial driver hours spent locating and retrieving trailers
- Eliminate driver frustration related to wasted trips to retrieve trailers
- Optimize trailer pools, improve costumer communications and increase customer satisfaction
- Save significant costs by recovering misplaced trailer assets
- Increase trailer utilization and reduce the need to purchase additional trailers to meet demand
- Perform more accurate preventative maintenance based on actual miles driven
- Support the company's focus on driver satisfaction, fleet safety, and customer service
- Do more with the trailers it has, adding to its bottom line

# 8. How stable, reputable and experienced is your partner?

LOW DATA SYSTEM PROVIDERS — OUTDATED TECHNOLOGY OF THE PAST

Beware of fly-by-night GPS providers who may leave you stranded with devices that can no longer be supported. Many of these providers do not hold the proper licenses and certifications for their GPS technologies, and do not employ adequate measures to comply with stringent data privacy and security requirements.

RICH DATA SYSTEM PROVIDERS — INNOVATION FOR THE FUTURE

While evaluating a rich data trailer tracking system, it's also important to evaluate the company providing that solution. Here are some of the best practices to look for in a rich data solution provider.

- A proven M2M platform that delivers a high level of service availability, speed, scalability and security
- A robust, highly scalable infrastructure and network powered by the latest cellular technology
- Road-tested patented GPS technology that meets all licensing and certification requirements
- Financial stability and demonstrable growth
- A large base of customers and subscribers
- Significant investment in ongoing research and development for continuously current solutions
- Proven methodology for predicting and demonstrating ROI
- World-class customer support and a dedicated customer account manager
- Full scope of support services including installation, training, education and technical support
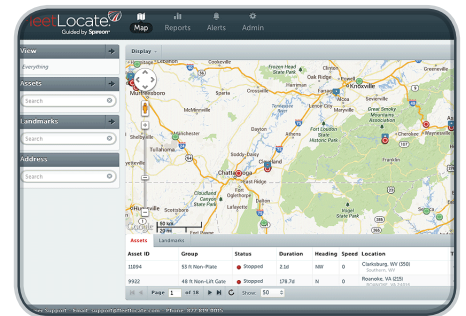
Where Rich Data Become Real Intelligence

Make sure the trailer tracking system you select serves up rich data as actionable, meaningful business intelligence.

For more information please visit **spireon.com/trailer-management** or call **1-800-557-1449**