



**The Field Operations Playbook:
Using Track and Trace to Solve
5 Key Challenges**

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What is the cost of inefficiency in an industry? On average, offshore oil platforms operate at only 77% of maximum production potential. This shortfall costs the industry an estimated **\$200 billion** annually.

The Challenges in Field Operations — and What it Costs Your Business

Across all industries, field operators and fleet managers suffer from five major challenges that cause them to operate at less than optimal efficiency and waste precious time. These are:

- 1 Inability to locate assets resulting in poor utilization
- 2 Lack of service verification creating billing disputes
- 3 Non-operational idling time and maintenance issues
- 4 Siloed information leading to delayed response times
- 5 Inability to track productivity resulting in missed targets

All of these hurdles put a severe dent in any project's budget, as well as the company's bottom line. In oil and gas for example, the performance gap is costing the industry an estimate of **\$200 billion in annual revenue**.

¹ "Why oil and gas companies must act on analytics." McKinsey.
<https://www.mckinsey.com/industries/oil-and-gas/our-insights/why-oil-and-gas-companies-must-act-on-analytics>

Track and trace investments have median ROI as high as 277%², yielding returns as high as **30 to 50 times investment** within a few months of implementation³.

Every second and every cent counts in field operations. Thus, it becomes imperative for field operations managers to solve these key challenges and gain control of their efficiency and cost.

The solution is (deceptively) simple: track and trace technology.

The challenges in field operations share a common theme—they stem from a lack of visibility into assets and processes. Track and trace technology addresses just that, helping field operations get a better picture of their processes.

Deploying track and trace technology provides much-needed visibility, but the differentiator is a way to turn that stream of data into **operational intelligence** via asset tracking software. Field managers can use these actionable insights to make informed and faster decisions, creating even greater business value.

In this playbook, we look at these five major challenges and how companies with field operations have adopted track and trace technology to solve them. Learn how to:



Accurately measure productivity by automating data collection and reporting



Optimize inefficient processes to realize cost savings



Speed up response times to deliver greater customer satisfaction and win more jobs

Components of a track and trace solution



Tracking devices

Purpose-built hardware that are installed on assets to gather data



Transmission technology

Satellite and cellular technology that transmits data from even remote locations to data centers, which then feeds software platforms



Track and trace platform

Software that analyzes data and presents it in the form of visuals and reports

² "ROI: How to evaluate your supply chain performance." Material Handling and Logistics. <https://www.mhlnews.com/global-supply-chain/article/22035359/roi-how-to-evaluate-your-supply-chain-performance>

³ "Why oil and gas companies must act on analytics." McKinsey.



Part 1: The 5 Key Challenges, Solved

Challenge #1: Inability to locate assets resulting in poor utilization



What's at stake:

Field managers have to be aware and up to date as to location and status of their assets at all times — *or risk missing out on revenue-generating opportunities.*

Tracking down assets often takes a string of phone calls and if missing equipment is involved, then more calls will have to be made. And if whiteboards, logbooks or spreadsheets are the main way of keeping records, then the entire process becomes even more time-consuming and frustrating for the field manager.

Even if everything's in order, there's always the possibility that on-site assets get moved around by crew members or third party partners, and these unplanned movements simply cannot be tracked manually.

Issues with site logistics impact productivity by 50% or more⁴



The track and trace solution:

Use GPS tracking to gain visibility of assets and increase utilization. A purpose-built device that tracks equipment or vehicles provides data with precise location, days on site, engine hours, trip history, driver behavior, and engine start/stop events.



In action:

Service company uses GPS equipment tracking to track and coordinate over 50 assets

An environmental service company installed GPS tracking devices on their roll-off bins, storage tanks, big rigs, and pickup trucks. These assets—along with reports on its location, last seen time, and owner—could be accessed from the track and trace platform.

Plus, the asset's geographic coordinates can be pinpointed on a map for greater accuracy. Coordinating these assets became much easier for field managers even with up to 50 sites to manage per day.

Equipped with this newfound visibility, the company immediately laid their longstanding dispatch problems to rest. When a specific equipment is requested by clients, field managers can quickly and conveniently locate the asset from their dashboard and mobilize it to the work site.

They can also deploy the closest available resource to save on time and fuel. Better asset utilization means that the company has reduced the cost of underutilized equipment—a cost that quickly adds up the longer assets stay idle.

Leader insights:



By using the best and closest available resource, we can save on fuel and labor and service more clients and more projects.



⁴ Clarifying the Process of Selecting Labor Inefficiency Factors." MCAA. <https://www.mcaa.org/news/new-resource-clarifies-process-selecting-labor-factors/>

Challenge #2: Lack of service verification creating billing disputes



What's at stake:

Equipment rental companies have to be able to provide tangible proof that their assets were rented out for the duration stated—*or risk underbilling for their services.*

The standard procedure might be to launch an inquiry, but interviewing customers about their activity history is hardly an efficient or relationship-enhancing way to go about it, especially if the work dates back to months ago.

Considering that approximately 70% of job sites miss deadlines, assets tend to be rented out for longer than the initial estimate, incurring additional costs on the client's end. With no concrete way to verify service, rental companies find themselves at a disadvantage, where the options are either risking their client relationship with a prolonged dispute or losing money by underbilling.

The global average value of construction disputes is \$33 million⁵



The track and trace solution:

Use service verification to provide GPS-supported evidence and eliminate billing disputes. Track and trace software with features like rental statistics, location data, and days-on-site information enables accurate invoicing, better customer relationships, and faster collections.



In action:

Equipment company uses service verification to lower disputed invoices by over 95%

An equipment rental company relied on the data from their GPS-tracked assets to gain insights into their billing process.

Not only can reports like location data and asset movement be generated, more importantly, the company can see the exact number of days their equipment spent on various client sites as well as the entry and exit dates.

Now that billing processes run off of automated, indisputable and accurate GPS data, manual entry errors and invoice disputes that used to cost the business money and customer friction have been lowered by over 95%. Even if any arise, they can be quickly resolved to both parties' satisfaction.

The business has won their clients' trust by increasing transparency and established themselves as a reputable and trustworthy company in their industry, leading to greater opportunities to drive revenue generation.

Leader insights:

“ My challenging experiences managing roll-off containers in chaotic environments for most of my career triggered my quest to find a way to automate equipment location and status tracking and better run my operations. ”

⁵ “Global Construction Disputes Report 2019: Laying the Foundation for Success.” Arcadis.
<https://www.arcadis.com/en/united-states/our-perspectives/2019/global-construction-disputes-report-2019/>

Challenge #3: Non-operational idling time and maintenance issues



What's at stake:

Fleet managers have to be able to identify areas where costs can be optimized—*or risk setting the business back in terms of wasted expenditure.*

Fuel and maintenance are two of the biggest cost drivers for fleet operations, and vehicle idling is a big part of that equation. While fleet managers can put measures in place like guidelines for drivers to reduce their non-operational idling time, they wouldn't have visibility into whether those guidelines were adhered to.

The more vehicles that a company manages, the more difficult it is to ensure that drivers comply with company policy.

Vehicle idling can increase maintenance costs by \$2,000 per vehicle per year⁶



The track and trace solution:

Use telematics to track vehicle idling and save on fuel and maintenance. Access second-by-second data accuracy of data ignition on, trip distance and time, engine idling, and speed.



In action:

Infrastructure solutions company uses telematics to save up to \$70,000 per year on fuel and maintenance costs

An oilfield infrastructure company deployed an integrated GPS asset tracking and telematics solution on their fleet ranging from light-duty pickups to heavy-duty trucks. There was a stream of data coming in from over 350 vehicles, and fleet managers could generate reports from this data that provided actionable insights, like how many hours each vehicle idled for.

What they immediately noticed was that vehicles idled for longer than optimal. Diving deeper, fleet managers analyzed the idling reports—that could be broken down by days, weeks, or months—and by assigning a dollar amount for each vehicle class associated with fuel and maintenance, they could calculate the amount they were spending on fuel and repairs due to idling.

The team set a goal of reducing idling from 60% to 30% and was able to achieve \$70,000 cost savings based on just 40 vehicles.

In an industry where there's constant pressure to save money, being able to control and limit the non-ROI generating activities of their fleet have been a major boon to the company in reducing their overhead costs.

Leader insights:

“ I was able to create a report that would tell me what trucks were idling for how long based off of the full engine use . . . And what I was able to do with that was get an overall dollar amount associated with how much money we're spending on idling and maintenance repairs from idling. ”

⁶ "News & Insights." American Trucking Associations. <https://www.trucking.org/news-insights>



Challenge #4: Siloed information leading to delayed response times



What's at stake:

Field operations teams have to be able to locate and access information quickly—*or risk wasting their productivity on low-value tasks.*

Unfortunately, the information that field managers need to make decisions and take action exists in siloes, which makes locating the information a challenge in itself and delays response times considerably. Asset location could be tracked in Excel sheets, paperwork orders kept in filing cabinets, and driving activity recorded in logbooks kept in the vehicle's glove compartment.

The time it takes to compile siloed information is eating into your team's productivity, which could be spent on other high-value or revenue-generating activities instead.

Productivity growth from 2000-04 to 2010-14 has dropped as much as 80%⁷



The track and trace solution:

Use a track and trace software that provides all the information you need in a single location. Consider if the platform solves unique business needs like managing rentals, compliance, advanced vehicle tracking, and hours of service.



In action:

Service company uses track and trace platform to reduce invoice processing time by 99%

An environmental service company turned to GPS asset tracking coupled with track and trace software to help them consolidate all process-critical information into one platform. Instead of having to consult spreadsheets, paper documents, and field personnel whenever information was needed, field managers could access all this from one dashboard.

With visibility into data that they never had before, the company began to see quicker response times, particularly in invoice processing. Field managers used to make trips to the site and check the equipment in person because this data wasn't readily available. This would eat into their productive hours.

But now, with reports that take only five minutes to generate and a platform that can be accessed from the web or mobile devices, field managers save precious time and speed up invoice processing. Providing the team with operational intelligence tools frees them from the burden of time-consuming tasks, empowering them to focus on delivering great service and strengthening customer relationships.

Leader insights:

“ It took hours and even days to track these assets. Now, we achieve the same result with a report that takes five minutes to generate. ”

⁷ “Solving the productivity puzzle.” McKinsey. <https://www.mckinsey.com/featured-insights/regions-in-focus/solving-the-productivity-puzzle>

Challenge #5: Inability to track productivity resulting in missed targets



What's at stake:

Field managers have to be able to track productivity even in challenging environments—*or risk falling behind on their targets.*

As field managers, it's important to know for certain if everything is running as planned. The conventional way to do this would be through phone calls but with staff numbering in the hundreds, there's bound to be delays and inefficiencies in conveying information, impacting productivity as a whole.

While detailed plans can be carefully laid out for work outputs, delivery schedules, and best routes, all that comes to naught if the results have to be measured manually or with guesswork.

The biggest drivers of productivity decline are escalating capital expenditure and operating costs⁸



The track and trace solution:

Use telematics to stay connected and access real-time data. A reliable device with LTE cellular connection increases fleet and driver productivity through real-time tracking, detailed and accurate trip recording, and custom rules and reports.



In action:

Operations company uses fleet tracking solutions to help employees hit productivity targets

A mining operations company leveraged a telematics solution to manage their large fleet of over-the-road trucks to earth-moving equipment, which allowed them to stay connected within a 60-mile area thanks to strong, reliable cellular connections—a feat that couldn't be achieved before by previous vendors.

With communications and information connectivity established, the company was able to automate once manual processes, like monitoring productivity of employees and fleet.

Each employee operator has clearly defined productivity goals, which are used to calculate raises and bonuses. Automated data collection and reporting enabled the company to accurately measure loading, drop off, and dumping times and compare them to targets.

Fleet managers can provide employees with a timely accounting of their productivity targets, so employees know exactly where they stand at the end of their shift. Displaying performance trends encourages operators to strive towards hitting their performance targets.

Now, the leadership team has a full picture of the mining operation's daily productivity. The ability to accurately and automatically track productivity translates directly to the bottom line, as management can see exactly where improvements are needed and take immediate action.

Leader insights:



If you don't track the information, then you can't do anything to really improve your performance.



⁸ "Productivity in mining operations: Reversing the downward trend." McKinsey.
<https://www.mckinsey.com/industries/metals-and-mining/our-insights/productivity-in-mining-operations-reversing-the-downward-trend>



Part 2: Advanced Applications of Track and Trace

While the main benefit of track and trace technology lies in its ability to track asset location in near real-time, the operational intelligence that it provides has advanced applications that enables field operations professionals to overcome additional challenges in optimizing efficiency and lowering operating expenses.



1. Eliminating invoice disputes with evidence

Put an end to disputes over rental equipment. Companies can manage all of their rental assets through a centralized application and eliminate invoice disputes. Customers can rest assured that every rental ticket is supported by GPS tracking data and companies can verify that every invoice is both complete and accurate before it is sent.

- ✓ View rental statistics and location information
- ✓ Integrate rental location with in-house or third-party rental systems
- ✓ Quickly verify rental invoices for customer/supplier transparency with indisputable location data
- ✓ Locate assets on rent and audit billing based on GPS location
- ✓ View days on site for all assets



2. Keeping equipment certifications updated

Identify equipment certification and maintenance issues proactively. Fleet managers can be alerted to the certification and maintenance status of their entire fleet. With the added context of current locations, managers can also take immediate action to ensure their fleet stays compliant and maintained.

✓	Manage maintenance proactively to prevent unexpected vehicle breakdown and downtime, with context of asset location
✓	Reduce downtime waiting for equipment certification
✓	Share data with suppliers, reducing risk of out of compliance equipment
✓	Audit equipment locations for inventory and liability management
✓	Create an audit trail that documents correct certification and maintenance



3. Enhancing fleet and driver safety and productivity

Fleet operators commonly report a 50-90% reduction in preventable accidents and significant improvements in operational efficiency after installing feedback-based telematics. This transparency creates accountability for both fleet operators and drivers to identify areas of improvement so drivers can adjust their driving habits for a safer experience.

✓	View real-time data on vehicle location, health, and idling
✓	Receive alerts and notifications of engine faults, fast acceleration, hard cornering, and harsh braking
✓	Monitor driving records via smartphone-compatible apps for hours of service, DVIR, and messaging
✓	Manage driver scorecard, available for each individual driver in the fleet
✓	Generate reports, including felt alerts, action items, serious violations, training reports, and incident graphs



Track and trace application in various industries

Across many industries, field operators and fleet managers can apply track and trace technology to achieve more efficiency and cost savings.



Oil and Gas

- ✓ Maximize equipment utilization
- ✓ Increase asset velocity
- ✓ Efficiently retrieve equipment



Construction

- ✓ Understand inventory needs
- ✓ Reduce unauthorized usage and reduce insurance costs
- ✓ Keep equipment running longer



Agriculture

- ✓ Recover lost equipment
- ✓ Better manage labor costs
- ✓ Reduce fuel consumption



Transportation and logistics

- ✓ Maximize equipment utilization
- ✓ Efficiently retrieve equipment
- ✓ Keep materials and drivers safe



Mining

- ✓ Better control costs
- ✓ Boost production rates
- ✓ Enhance safety and minimize downtime



Other industries

- ✓ Eliminate invoice discrepancies
- ✓ Track private road activity
- ✓ Understand asset location in remote locations

Conclusion: Gain Control of Field Operations

The industrial sector is becoming increasingly data-driven, and field operations is no different. Field operations leaders must leverage this data to optimize their business, or risk falling behind competitors who already do. A robust track and trace platform turns this data into operational intelligence and actionable insights that help increase efficiency and productivity, and ultimately, lower operating costs.

If you'd like to see how a track and trace platform can give you the advantage in field operations, contact www.geoforce.com/contact.





About Geoforce

Founded in 2007, Geoforce's award-winning industrial IoT platform brings order to chaotic field operations in industries as diverse as oil and gas, agriculture, construction, mining, transportation, logistics, government and defense, and rail. The company is an end-to-end solutions provider with over 1,300 customers tracking approximately 160,000 assets across 90 countries, with more than 2.3 million readings daily.



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