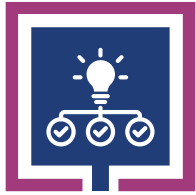


# Paradigm Insight



Proven | Trusted | Transformative



# Paradigm Insight: Turning data into information

If we can read data generated by our assets, we can capture value. That value is a unique insight into operational performance. It can help us reduce operating costs, prevent revenue leakage, gain a competitive edge and inform us in other untold ways.

Without accurate data and the ability to understand it, decisions are really nothing more than guesses. Intelligent guesses born of experience and patterns perhaps, but still guesses. Operating costs still rise and revenue still leaks.

## Complete traceability throughout the supply chain

Actionable data is critical to getting it right – all the more so when the assets being monitored are in extreme or difficult-to-access environments.






This is what makes Paradigm Insight so invaluable. Its strength is in its combination of real world and advanced analytics.

Designed by Instrumentel, a Unipart majority-owned company, Paradigm Insight is a web portal that uses sensors, a diagnostic hub and live visualisation of asset performance. The insight allows you to understand the performance of your critical assets. It also enables you to trace those assets and their constituent parts throughout their journey in the supply chain.

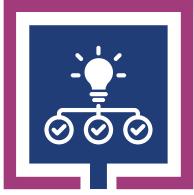


# How it works

You manage your assets through the web portal from any device with an internet connection.

-  **1** Sensors and a diagnostic hub are affixed to assets
-  **2** Data is streamed for automated analysis and presented on the Paradigm Insight web portal
-  **3** Information is available in visual forms designed specifically for you
-  **4** You're alerted to any exceptions or faults
-  **5** You gain insight into asset performance in mere seconds with a detailed analysis





# Paradigm Insight at work

Without data – let's use trains as an example – maintenance is typically scheduled according to mileage or how long that train has been running. That train might not need maintenance or it might actually be long overdue.

Either way, money is being lost:

## Scenario 1

The train is taken out of service for **needless maintenance**

## Scenario 2

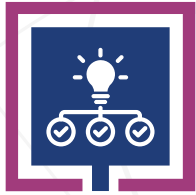
A fault which could have been predicted means **the train has to be stopped**

## The value:

By capturing data from various assets on the train, you can pinpoint exactly where and what on the train is not performing at peak level – and just as importantly, why. This is condition-based maintenance. You can then address the fault and the circumstances causing it before it becomes a serious, expensive problem.







# Benefits



## Reduces operating costs

Enables you to minimise operational costs, such as maintenance spend. By capturing an asset's data, you can ensure it's performing at optimum level and only take action when it's called for.



## Gives precise intelligence

Points you to exact location of fault, highlighting why the problem is about to occur – even if the reason is environmental. Paradigm Insight is so precise in the information it provides that you'll know if the weather is the problem.



## Improves customer service

Mitigating risks and downtime enables you to deliver for your customers. Knowledge through data analytics improves your performance, which increases customers' trust and reliance on you.



## Improves ability to compete

With insight into your assets, you can make better-informed decisions on next steps. Knowing your capabilities, you have insight that can inform strategies. Reducing operating costs also improves cash flow, which in turn improves your agility. You can compete from a position of strength.

# Paradigm Insight's technologies

Here's a glance at where and how the technologies designed by Instrumentel are bringing value to organisations



## Automotive

Motorsport and commercial engine manufacturers use Instrumentel's Engine Telemetry for testing and diagnostics of moving parts in engines. The technology acquires data in real time, such as temperature, pressure and strain data from pistons, valves and turbos.



## Rail

Real-time information on key systems such as engines, doors, braking and safety systems for passenger and freight operating companies enables condition-based maintenance.



## Defence

The Explosion Telemetry System has been developed in collaboration with the Defense Threat Reduction Agency, which is part of the U.S. Department of Defense. The purpose is to measure the surrounding environment and epicenter of an explosive blast.



## Industrial

Technologies that enable condition-based maintenance and also collect critical operating data in areas not typically available for data logging and telemetry systems. Examples include nuclear-waste monitoring, steel-foundry asset tracking and gas-turbine telemetry.

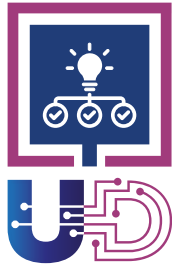
# Paradigm Insight in action

Follow these two real-world examples to see how data insights have made the difference in Rail

	On-Train Monitoring	Wheel-Slip Monitoring
The problem	ScotRail previously relied on an OTMR (On-Train Monitoring Recorder) for a range of safety and service data. The problem was that ScotRail staff had to manually download the data to perform any kind of analysis – making it hard to work together to solve any issues.	This leading train operator needed to know the vehicles and areas of track with the most WSP (Wheel-Slip Prevention) events. Without clearly formatted insights, it couldn't prove the efficacy of a new sanding unit and improve the operation of trains across its network.
The solution	Instrumentel designed a remote monitoring solution. Data extraction takes place multiple times per second. It's encrypted and correlated with GPS data for a richer, real-time view of vehicle performance. Instrumentel's new Diagnostic Hub was also fitted to the fleet in instalments to minimise disruption across the fleet – a testament to Instrumentel's 'design for install' approach.	Instrumentel created a monitoring solution that's capable of keeping tabs on 32 signals continuously. The data is captured and transferred via a Remote Download Module so users can process and analyse the information. Commissioning and testing was carried out alongside the operator's maintenance team for a smooth installation. And all data is now available from any device with an internet connection.
The impact	ScotRail now has access to more data than ever before. It's displayed on Instrumentel's Paradigm Insight portal, which is available on any device. This means dispersed teams can collaborate to identify key events which might impact passengers, drivers or maintenance teams. The new data is being used as an early warning system for failures as well as for health checks of key assets, such as the engine, battery and brake systems.	The information now available from Instrumentel provides usable insights that allow targeted maintenance of vehicles and track, resulting in: <ul style="list-style-type: none"> <li>• Better vehicle reliability</li> <li>• Improved vehicle availability</li> <li>• Reduced long-term damage</li> <li>• Faster maintenance completion</li> </ul>

“ Instrumentel delivered an effective solution, which met challenging project constraints and timescales. ”

Alasdair Thom, Senior Engineering Project Manager at ScotRail



# Paradigm Insight

## Need to improve?

### Can you afford to stay the same?

By engaging with Instrumentel's team of experts, you can quickly understand what your problems are and how condition monitoring can be used to predict and prevent failures. Combining experience from multiple industries with machine learning gives unparalleled insight, which can be acted upon.

If you want to optimise the efficiency of your assets and reduce running costs, we can help. We can collaborate with you to develop a solution that fits you and your business.

Join our satisfied customers, who are benefiting from our solutions and improving their productivity through expert insight.



## Get started today

Get in touch today to learn more about Paradigm Insight and how it can help your business.

Contact:

**Jen Hunt, Digital & Innovation - Unipart Logistics**

+44(0)7584 556760

✉ [jennifer.hunt@unipart.com](mailto:jennifer.hunt@unipart.com)

**Sam Bussey, Sales & Business Development Manager - Instrumentel**

+44(0)7824 547281

✉ [samuel.bussey@instrumentel.com](mailto:samuel.bussey@instrumentel.com)