

Wrightbus

HOW PRESIDIO ENABLED WRIGHTBUS TO MIGRATE ITS MISSION-CRITICAL IOT AND TELEMATICS INFRASTRUCTURE TO AWS, DELIVERING REAL-TIME DATA PERFORMANCE FOR THE UK'S FASTEST GROWING BUS MANUFACTURER.

The Customer

Founded in 1946, Wrightbus is the fastest-growing bus manufacturer in the UK and Europe, building some of the world's most advanced passenger vehicles, including battery-electric and hydrogen-powered buses, with vehicles in service across the UK, Europe and the Far East.

The Relationship

Wrightbus needed a partner to design and build a cloud-based technology infrastructure to support the telematics and Internet of Things (IoT) systems across its vehicle fleet. Amazon Web Services (AWS) recommended Presidio as a partner with the capabilities and track record to deliver this project.

The Challenge

Wrightbus vehicles are fully connected, with telematics and IoT sensors playing a key role in their management, maintenance, and economic operation. Each vehicle generates data across three main pillars: live telematics data, including location and fuel or charge levels; engineering and management data, including emissions and fuel usage; and maintenance data, such as live fault reports and warnings.

This data comes from thousands of sensors and several networks aboard each vehicle, recorded as frequently as once every second. For operators to benefit from this data stream, it must be processed quickly and made available on dashboards and reporting tools in near real time.

Previously, this was handled by an on-premises technology suite at Wrightbus's headquarters; however, as more vehicles joined operators' fleets, the infrastructure could not effectively handle peak data volumes. Too much of the Wrightbus technology team's resources were being spent maintaining legacy hardware and code rather than developing new capabilities. As Wrightbus's growth accelerated, it became clear that the existing system could not scale to support the real-time performance that operators needed, nor provide the foundation for the advanced features Wrightbus planned to deliver in the future.

Business Challenges

- High data volumes from thousands of vehicle sensors
- Legacy on-premises infrastructure unable to scale at peak demand
- Excessive resource spent maintaining legacy hardware and code

Outcomes

- Data processing reduced to seconds
- Measurable reduction in vehicle off-road time
- Self-managing infrastructure: no maintenance contract required
- Scalable to support up to 1,400 vehicles per year

Services Used

- AWS cloud migration
- IoT data processing infrastructure on AWS
- Scalable cloud architecture



“Our customers are really pleased with the quality and reliability of data we can provide – now they just want more of it.”

Martin Murtagh,
Telematics Engineering Manager, Wrightbus

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The Solution

Wrightbus is at the forefront of advanced engineering in public transport, and Presidio invested considerable effort in understanding the business before designing the solution. This included visiting the Wrightbus factory to observe the physical manufacturing processes for electric, hydrogen, and other vehicles, and working with the business to analyse the different use cases for stakeholders within Wrightbus's customer organisations.

The Presidio team began by designing a modern cloud-based solution built for low maintenance, rapid scalability, and the flexibility to handle steep demand spikes. Rather than proceeding straight to build, Presidio developed a working proof of concept using a realistic dataset to test all key features. This identified minor, unforeseen issues with the initial design and enabled their resolution before the main build, saving time and resources during deployment.

The finished system processes data from thousands of vehicle sensors and delivers it to dashboards and digital reports that operators use to monitor location, trip data, energy usage, emissions, and maintenance across their fleets. These tools are used by engineers, operations managers, and operational staff, including those responsible for day-to-day vehicle allocation and monitoring. One important use case is managing electric vehicle charging at depots with limited space, where it may not be possible to charge all vehicles simultaneously.

The solution ensures the highest levels of data security, resilience, and integrity, all of which are increasingly important to transport operators worldwide. Over the next few years, Wrightbus expects to complete and commission up to 1,400 vehicles a year; the new system is built to support this growth without placing additional burden on the Wrightbus technology team.

Results / benefits

Following go-live, the time from data receipt to availability on live dashboards was reduced to seconds. Operators can now track vehicles, understand their performance and manage faults and maintenance in real time, fundamentally changing how Wrightbus's customers interact with their fleets.

The new system is expected to result in a measurable reduction in vehicle off-road time, with the accuracy and availability of data helping Wrightbus's parts team and mobile engineers to minimise the impact of any unexpected vehicle faults. The feedback from Wrightbus's customers has been extremely positive, with operators now requesting even more detailed data about their vehicles.

With fewer legacy systems to maintain, the Wrightbus technology team has been able to devote more resource to designing and building new features for the Wrightbus technology suite. This enables them to do more to support the business's strategic objectives, including enabling truly predictive maintenance and making zero-emission vehicles the right choice for as many operators and routes as possible. The cloud infrastructure is sufficiently automated and robust to require no maintenance contract, though Presidio remains on hand to offer advice and assistance as more Wrightbus vehicles leave the factory and enter service worldwide.



“This project has helped us, as a technology team, to do even more to support the company's pursuit of its strategic goals.”

Martin Murtagh,
Telematics Engineering Manager, Wrightbus

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