

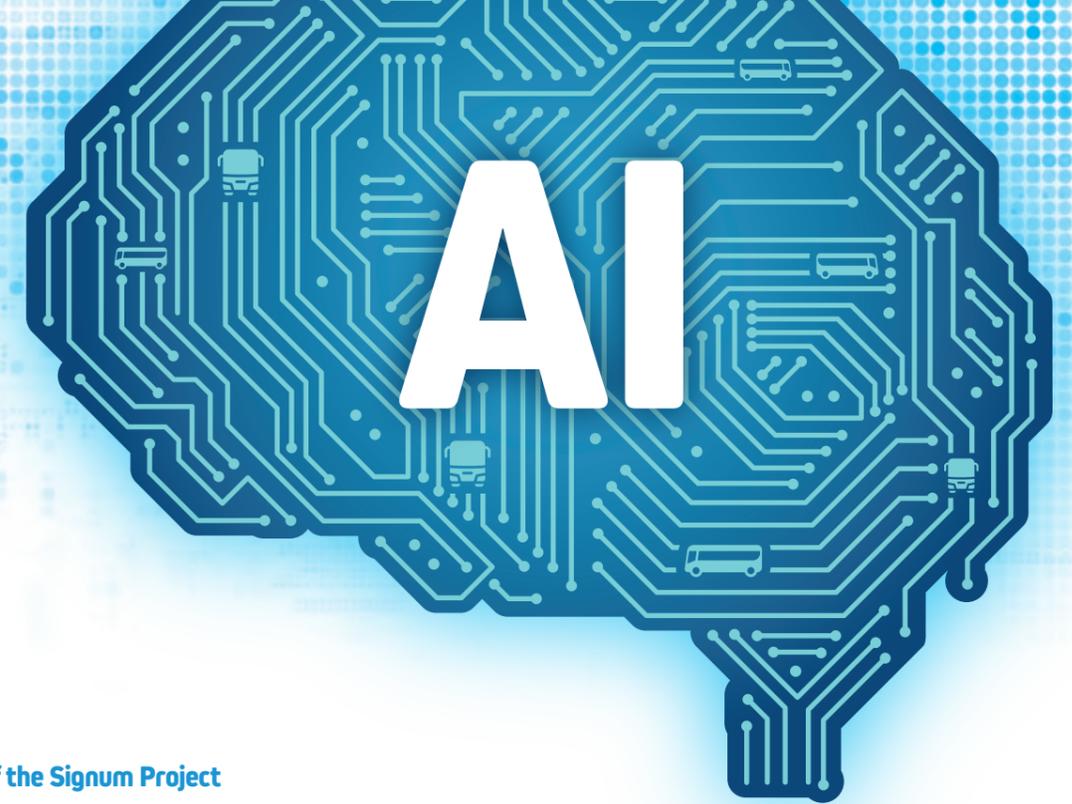
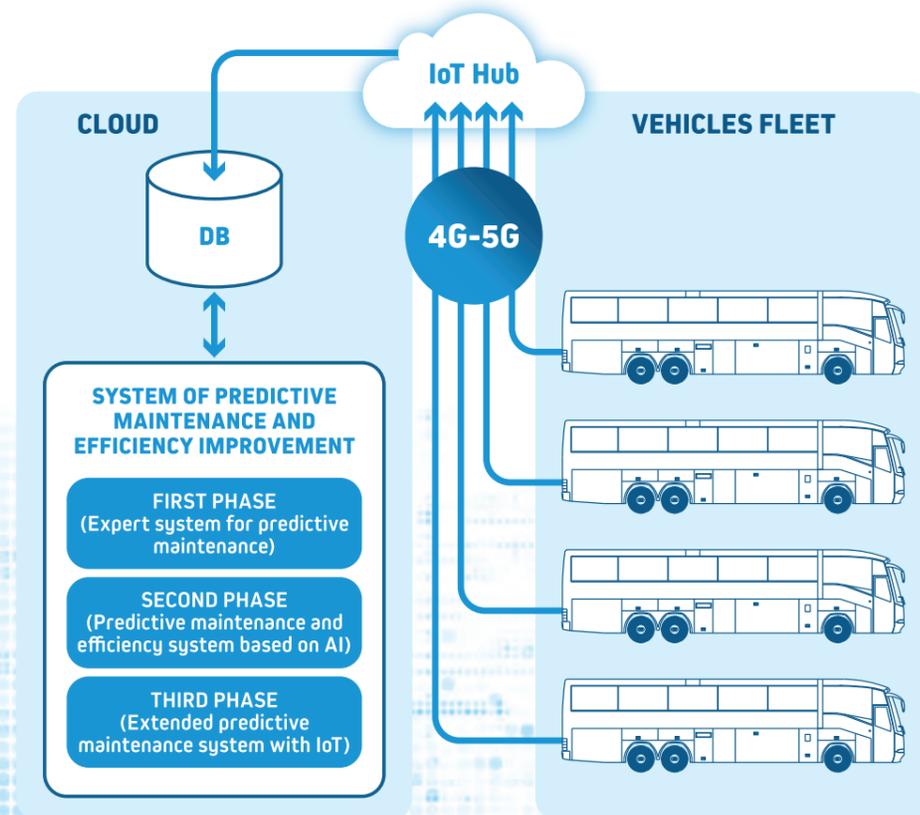
Signum
the brain
of maintenance

Signum

Hispacold's AI-Powered Climate Control Solutions

Hispacold is making strides in developing a predictive maintenance and energy efficiency system driven by Artificial Intelligence (AI). The Signum project is aimed at creating an intelligent system based on two complementary objectives: predictive maintenance and energy optimization for HVAC systems in vehicles.

On one hand, **Signum** focuses on building a predictive maintenance system capable of determining when technical intervention is genuinely needed, predicting issues before they occur. This proactive approach reduces both costs and downtime for vehicles. On the other hand, it seeks to optimize energy usage of climate control systems, thereby lowering operational expenses.



Key Phases of the Signum Project

The project unfolds in several phases, and involves both IoT devices and AI models, which work together to cover a wide range of diagnostic cases.

Phase One: Hispacold developed a rule-based expert system during the first phase. These rules, informed by the company's extensive experience, allow the system to anticipate degradation in HVAC system performance, preventing failures that could lead to vehicle downtime.

Phase Two: The second phase integrates AI models capable of generating new insights and rules through machine learning and deep learning techniques. These advanced models enhance the system's predictive capabilities and further optimize the energy consumption of onboard HVAC systems.

Final Phase: The last phase aims to develop and integrate an electronic device that will collect additional data through IoT sensors. Incorporating these new variables into the AI models will lead to an expanded predictive maintenance system with greater capabilities and reach.

Benefits of the Signum Predictive Maintenance System

The **Signum** system offers a wide range of advantages for vehicle fleet management:

- **Minimized Downtime:** The system will reduce unexpected vehicle breakdowns, guaranteeing greater vehicle availability.
- **Increased Energy Efficiency:** HVAC systems will operate in optimal operating conditions, cutting down on energy consumption and operating costs.
- **Optimized Maintenance Schedules:** Workshops will be able to plan interventions based on real-time data, improving scheduling and minimizing disruption.
- **Reduced Energy Demand:** By optimizing the performance of climate control systems, overall energy demand will be reduced.
- **Enhanced Passenger Comfort:** Improved HVAC performance will lead to a more comfortable travel experience for passengers.
- **Lower Repair Costs:** The system helps avoid sudden, expensive repairs by ensuring timely maintenance, extending the life of vehicle components.

Signum is poised to revolutionize the way Hispacold approaches climate control systems, bringing together AI technologies to deliver smarter, more efficient solutions that benefit both operators, drivers and passengers alike.





HVAC systems
performing in more than
100 countries across
the five continents



more info



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