Brockmann & Büchner

Monitoring Railway Vehicles: From Brakes and Bogies to Sanitary System

- *Technology Focus: Condition-Based Monitoring*

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Operator-controlled on-board monitoring systems revolutionize the rail industry

Numerous operators choose on-board systems to monitor the condition of systems and components within their individual rail vehicles or fleets. They have the option to either develop and integrate these condition-based monitoring (CBM) systems in-house, collaborate with experts to co-develop them, or purchase complete plug-and-play solutions specifically tailored to the rail environment. These solutions can be easily retrofitted or are already seamlessly integrated into the car body and its systems.

In the current landscape, particularly in Europe, there is an abundance of innovative companies and startups that specialize in enabling systems to communicate effectively, providing valuable information collected, analyzed, and displayed in an intuitive manner. Leveraging the power of sensors and artificial intelligence, various vehicle systems such as brakes, bogies, drive systems, HVAC, and sanitary systems are capable of monitoring their own health and reporting on wear and tear as well as any potential defects.

This transformative technology marks a significant advancement in the rail industry, empowering operators with valuable real-time insights to ensure the safety, reliability, and optimal performance of their rail vehicles. The collaborative efforts of various stakeholders and the emergence of specialized companies have propelled the rail sector into a new era of data-driven efficiency and informed decision-making.

Essential Rail Components: Safety, Reliability, Efficiency

Several vehicle elements and their related use cases prominently feature in numerous supplier portfolios. Notably, both established and newly launched companies demonstrate a distinct focus on components primarily situated underneath and on top of trains. Wheelsets, axle bearings, bogies, brakes, pantographs, and their associated or supporting systems endure harsh conditions, high speeds, extreme pressures, and diverse weather scenarios. Given their critical role in ensuring passenger safety and the proper functioning of other vehicle systems, these components demand meticulous attention.

Safety is of paramount importance, but maintaining reliability, operational readiness, lifecycle optimization, energy savings, and automation are equally vital considerations. Hence, operators may prioritize investments in solutions for other parts and components, such as sanitary systems or passenger compartment lighting, even though they may not be as directly related to the safe operation of trains. Regardless of the component or use case developers focus on, one key advantage is universally recognized: efficient monitoring of trains or fleets with the right technology enables the adjustment of inspection and maintenance schedules, minimizing the risk of complete failure and costly interruptions to train operations.

Emphasizing this proactive approach, the rail industry strives to enhance the overall safety, performance, and efficiency of its services. By incorporating advanced monitoring solutions, operators can effectively safeguard passengers, optimize maintenance practices, and deliver a seamless and reliable travel experience.

Railnova

Railnova, a young company based in Belgium, offers fleet and maintenance workflow software and telematics solutions for railroad assets such as HVAC, doors, batteries, ERTMS and power units. Its comprehensive and cross-enterprise fleet management system enables operators, lessors, maintainers and manufacturers to securely connect any type of rolling stock or component and transfer data to the IT cloud. Using a secure and non-intrusive approach, the team automates data access to trains and vehicle components, allowing owners and operators to remotely collect diagnostic data and perform real-time analytics.
Railnova's breakthrough technology enables the company to meet the new demands of the changing rail industry.

RAILNOVA

https://www.railnova.eu/

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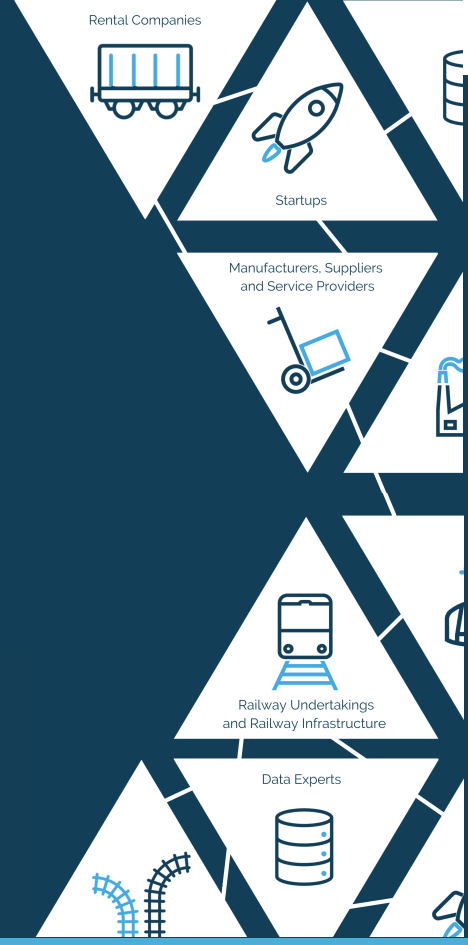

Rail Alliance – Shaping the Future

The concept of a Rail Alliance is a general success factor to exploit the full potential of the rail industry and solve the individual challenges of the market participants.

Triggered by possibilities of digitalization and recent trends, the rail sector is more and more taking on a new shape. The combination of numerous market participants and stakeholders is further increasing complexity.

If this sounds interesting to you - visit us on https://rail-alliance.network/