Hitachi Predictive Maintenance for Transportation
Modernize Operations for Industry-Leading Transportation

Operational Insight into Asset Performance

Traditional maintenance models are expensive. They rely on preventive maintenance schedules that are not necessarily related to maintenance needs. They also rely on operators or customers to detect and communicate potential problems. However, this no longer needs to be the case.

For transportation companies, satisfying customers, delivering on-time, and minimizing costs are constant challenges. Maintenance budgets are being stretched as transportation companies maintain aging assets and add more complex and sophisticated assets, that are costly to maintain. To gain the operational insights into asset performance required to reduce costs, they need to modernize their maintenance operations.

Hitachi Predictive Maintenance for Transportation is powered by Google Cloud to provide real-time fleet monitoring, advanced analytics, and predictive maintenance for railcars, buses, airplanes, subway cars, and maritime and trucking fleets. Our solution captures key data such as utilization, location, energy consumption, and environmental measures. It then applies machine-learning algorithms to deliver more intelligent failure prediction and preventive maintenance notifications.

Modernize Transportation Maintenance to Predict and Prevent Failures

Hitachi Predictive Maintenance for transportation uses web-based dashboards to deliver real-time operational visibility into asset status and performance and to predict maintenance failures before they occur. For example, maintenance teams can identify when railcar doors require maintenance before a failure occurs; predict the need for preventive maintenance of heating, ventilation and air conditioning (HVAC) systems; and alert teams of the need for preventive brake maintenance. By helping to predict and failures, the solution can reduce maintenance costs and downtime while improving customer satisfaction and safety.

Why Hitachi and Google Cloud?

HITACHI Inspire the Next

- Rich industrial heritage
- IoT and operational technology leader
- Dedicated IoT data science research lab
- Experience with deploying sensors to gather real-time data from transportation assets and workers

Google Cloud

- Enterprise-scale solutions
- Combines data storage, analytics and ML to track and predict performance
- Uses edge processing for immediate response
- Continuous ML to drive higher accuracy

Together, Hitachi and Google Cloud offer a unique predictive maintenance solution tailored to your requirements.

Reduce Maintenance Costs, Increase Uptime and Extend the Life of Transportation Assets

Hitachi Predictive Maintenance for Transportation on Google Cloud		
Challenge	Solution	Benefit
■ Operational maintenance costs are increasing as transportation assets become more complex. ■ Traditional maintenance models that rely on operators or customers to detect failures can't keep up. ■ Routine scheduled maintenance is sometimes unnecessary and often inefficient. ■ With no insights into the health of transportation assets, unplanned and emergency maintenance is disruptive and costly.	■ Delivers insights into the health of assets to prevent unplanned and emergency maintenance ■ Monitors equipment in real time by ingesting IoT-generated data from transportation assets ■ Uses Machine Learning to create a trainable model to predict potential failures ■ Provides real-time advanced analytics and visualizations with attention alerts ■ Delivers an end-to-end predictive maintenance platform that integrates IoT and big data technologies	■ Reduces reliance on operators and human judgement, and allows maintenance teams to focus on optimizing operations and extending life of assets ■ Provides visibility into asset health to avoid unplanned or emergency maintenance, and lessens downtime through improved asset availability, reliability, and lifetime value ■ Reduces operational and capital costs by prioritizing asset renewal, replacement, and maintenance requirements ■ Provides ability to better manage spares/yard inventory

Built with Google Cloud

Cloud IoT Core   Cloud ML   Dataflow   Kubernetes

Compute Engine   Cloud Pub/Sub   Cloud Datalab

One Team. Delivering Positive Outcomes.

Hitachi Consulting provides consultants, data scientists, engineers, and transportation specialists to work hand in hand with you and to co-create a predictive maintenance solution to solve your specific problems. We contribute our experience, tools, methodologies and development environments, while you provide in-depth knowledge of your transportation business. Using Google Cloud and IoT technology, we bring our transportation know-how to help any global transportation enterprise strive for operational excellence.

Through collaborative creation, we bring thinkers and doers together to innovate for a smarter future.

Contact Hitachi Consulting

Hitachi has deployed sustainable and repeatable predictive maintenance solutions for some of the world's most successful enterprises, and we can do the same for your organization. To learn more about how we can help your organization gain the downstream benefits of predictive maintenance, contact Hitachi Consulting at info@hitachiconsulting.com

About Hitachi Consulting

Hitachi Consulting is the global solutions and professional services organization within Hitachi, Ltd., a global innovation leader in industrial and information technology solutions and an early pioneer of the Internet of Things. Hitachi Consulting is a business integrator for the IoT era and a catalyst for digital transformation. Using our deep domain knowledge, we strategically collaborate with our clients to help them innovate faster, maximize operational efficiency and realize measurable, sustainable business and societal value. As a consulting-led solutions company, we can help you leverage data as a strategic asset to drive competitive differentiation, customer loyalty and growth. To learn more, visit www.hitachiconsulting.com.

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