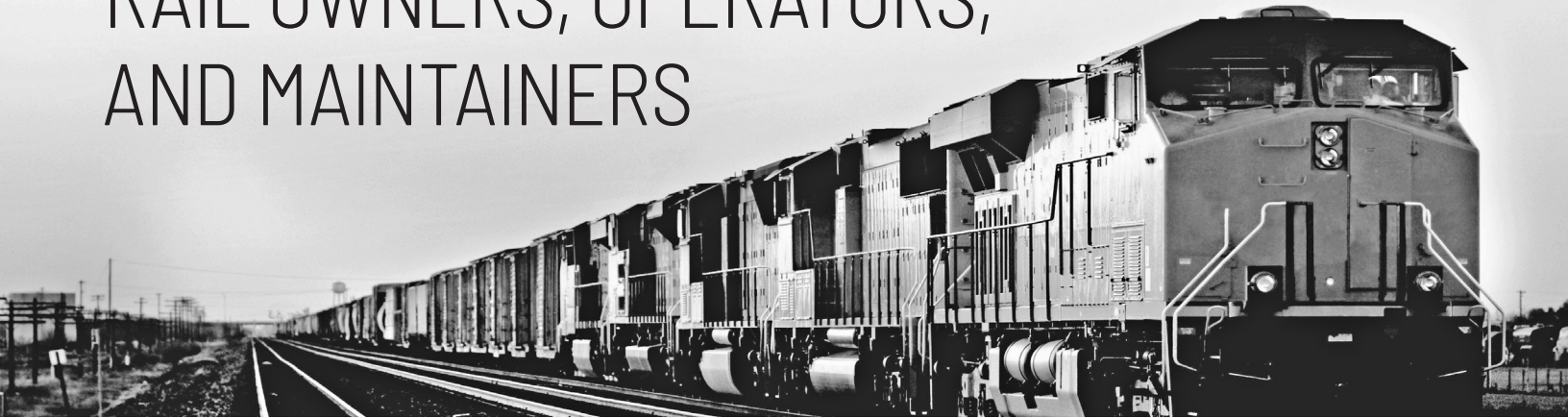


## Enhancing Predictive Maintenance for RAIL OWNERS, OPERATORS, AND MAINTAINERS



Foresight, not hindsight: Unlock data-driven insights from data onboard rail fleet assets.

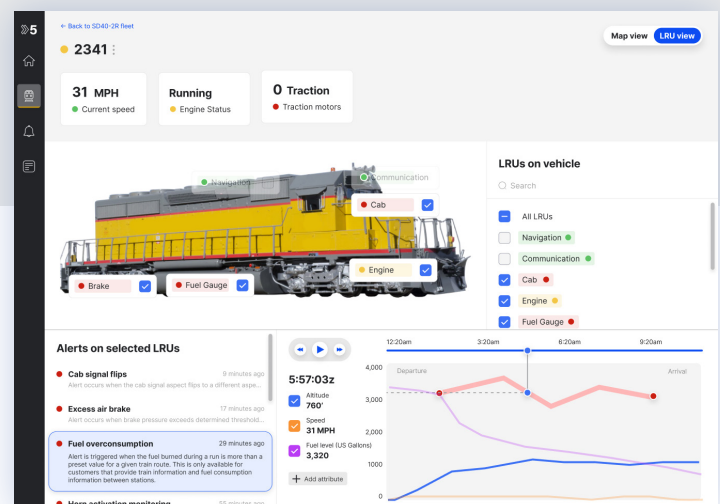
Safe, reliable rail transport is the backbone of our nation's economy, contributing tens of billions of dollars to US gross domestic product (GDP) annually. Optimizing the performance and availability of existing legacy assets and newer, technologically advanced ones is an increasingly complex and costly challenge, though. The components and data buses onboard these locomotives generate enormous volumes of data that can enable faster, more precise maintenance outcomes, but existing solutions can't capture or analyze this valuable data. With complete observability of all onboard data, owners/operators/maintainers get the insights and context they need to make real-time decisions that help improve the safety and reliability of their most critical, expensive, and long-lasting assets.

### The Shift5 Predictive Maintenance Module

Shift5's unique platform is hardware, bus, and protocol agnostic and can perform passive, **full-take data capture from components and data buses onboard locomotives – every frame, every bus, every protocol.**

- Analyze data in real-time to provide operators and maintainers with insights to assist in predicting and scheduling maintenance effectively
- Help avoid critical failures before they happen
- Ensure the safety and reliability of rail transport

Commercial rail leaders expect predictive maintenance to **lower maintenance costs by 22%.\***



\* MeriTalk, in partnership with Shift5, surveyed 300 operations, maintenance, and IT leaders from DoD, commercial air, and commercial rail organizations to explore the state of predictive maintenance and identify critical challenges to expansion. <https://www.meritalk.com/study/enabling-the-full-potential-of-predictive-maintenance/>



# Benefits of the Shift5 Platform

## Observability

- Access, translate, and store onboard operational data and insights currently obscured by complexity or design.
- Monitor asset performance for patterns or trends indicating problems and identify potential maintenance actions.

## Readiness

- Make better decisions – faster. Help to reduce unscheduled maintenance and optimize fleet availability.
- Enable maintenance scheduling at optimal intervals to reduce downtime, improve availability, and optimize resource use.
- Automate early warning indications to mitigate problems before they cause delays and identify resourcing needs earlier.

## Safety

- Automate monitoring of system/component thresholds and help prevent equipment failure.
- Perform scheduled maintenance before equipment failure to help reduce the risk of malfunction.
- Identify and prioritize potential safety hazards which can avoid legal liabilities and fines.

## Cost Savings

- Identify equipment failures and accurately attribute maintenance responsibilities.
- Help ensure assets remain in service longer to prevent costly delays and lost revenue.
- Prioritize maintenance for equipment likely to fail to help reduce costs.
- Find and fix potential safety hazards which can avoid legal liabilities and fines.
- Keep asset components at optimal performance levels to help extend asset life.

## About Shift5

Shift5 is the observability platform for onboard operational technology (OT), enabling smarter, faster decisions through real-time data access, contextual insights, and actionable analytics at the edge for aerospace, rail, and defense. Shift5 unlocks the complete ecosystem of onboard data for operations, maintenance, and cybersecurity teams for the first time, enabling real-time decision intelligence through complete onboard data access and observability from the asset level to fleet scale. Shift5 delivers modern OT solutions to ensure the security, availability, safety, resilience, and reliability of today's fleets and tomorrow's next-gen assets.

For more information, visit [shift5.io](https://shift5.io).