



HITACHI
Inspire the Next



OPTIMIZING RAIL OPERATIONS WITH GREENSPEED



ENHANCED CONTROL, INSIGHT, AND FLEXIBILITY ACROSS RAIL SYSTEMS

Driving Sustainable and Cost-Effective Rail Operations

Energy Savings



Significant Energy Reduction

- Typically, 5-10% reduction with S-DAS implementation
- Additional 5-10% reduction often possible with a Connected DAS
- Further reductions achieved via fact-based analysis of the available journey data

Sustainable Operations

- Leverages regenerative braking and eco-driving techniques
- Decreased CO2 emissions aligning with local and global environmental target
- Empowers planners with the best possible data

Operational Efficiency



Enhanced Service Quality

- Facilitates smoother traffic flow and reduce conflicts
- Improves punctuality and ride comfort
- The on-board algorithm adjust for driver behavior

Advanced Operational Control

- Constant exchange between trackside and on-board
- Immediately takes updates from trackside into account
- Enhances network capacity during disruptions

Maintenance Reduction



Reduced Wear and Tear

- Braking wear on pads, wheels and infrastructure
- Accelerations wear on engine, gears and couplers
- Minimizes the frequency of repair and replacement cycles

Cost Efficiency

- Reduce maintenance and service cost
- Reduces planned and unplanned downtime
- Ensures higher return on investment

Battery Management:

Based on our collaboration with Alstom and Hitachi the GreenSpeed solution for Train Builders now includes advanced features for managing battery states, such as dynamic recharge under overhead line equipment and energy use predictions that guide drivers to optimize battery usage and ensure completion of trips even with limited energy reserves.

The system dynamically accounts for battery efficiency improvements and degraded modes, offering predictive adjustments to driving profiles based on real-time battery conditions and train mass. This proactive management ensures optimal energy utilization, enhances the reliability of service under varying operational conditions, and reduce range anxiety for drivers.

Holistic on-board Energy Management:

With the acquisition of Thales GTS by Hitachi Rail Cubris is now part of a leading train building company.

One of several discussions with our new colleagues relates to kind of an on-board Smart Grid where all power consumptions are monitored and considered in real-time.

A use-case could be putting the HVAC into Eco Mode instead of Comfort Mode, allowing the BEMU to maintain speed and arrive on-time.



Thank you

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