Decision Support System for Predictive Wagon Maintenance

Funded by the European Union

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Developed by :

ARS Adriafer Rail Services

Vonnecta systems

Project by :

AUTOSUP

DECISION SUPPORT SYSTEM FOR PREDICTIVE WAGON MAINTENANCE

Rail freight

Digital Twins, AI and predictive technologies

AUTOSUP

Solution description

A predictive, data-driven maintenance ecosystem for rail wagons

Using automation, IoT and AI technologies :

- **Smart Gate with Sensors** at the port scans all incoming/outgoing wagons, collecting real-time data for diagnostics.
- **Predictive Maintenance** detects faults before they occur, minimizing unplanned downtime and increasing reliability.
- **Dual Maintenance Locations**

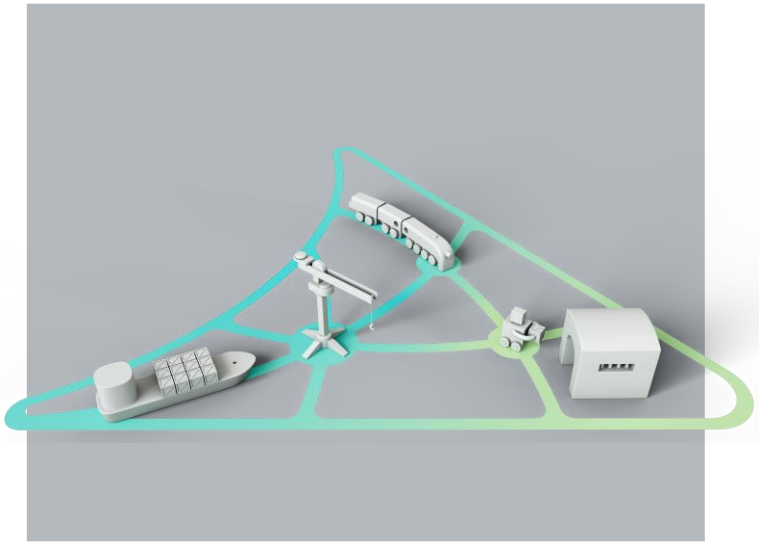
Enabling a shift from reactive to proactive maintenance strategy.

Benefits

- Reduced downtime
- Increased rail freight efficiency
- Optimized asset utilization
- Cost reduction
- Modal Shift towards rail
- Improved service quality
- Data Driven predictive maintenance

Main beneficiary:

Strategic Decision Support for T&L Stakeholders



Technology readiness level : ***5***
Implementation stage : ***Simulation***

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Smart Maintenance for Port-Rail Last-Mile Efficiency in Trieste

Inefficient, mileage-based maintenance leads to costly empty wagon trips and frequent unplanned repairs at the Trieste L-Hub.

This use case addresses these issues by implementing data-driven, condition-based predictive maintenance and establishing local repair facilities in Trieste and Gorizia. The goal is to reduce downtime, minimize empty trips, and improve the reliability and capacity of freight operations

Join our Stakeholder Forum here

Would you like to know more? Take contact :

Ilias Gkotsis
Research Engineer

Inlecom - Athens Office: Tatoiou 11, Kifissia, Athens – GR 14561

ilias.gkotsis@inlecomsystems.com

+ 30 210 80 11 236

https://www.autosup-project.eu/