



PREMIS Predictive Maintenance System

Complex predictive maintenance system for all types of rail vehicles

Key features

- A complex predictive maintenance solution consisting of a vehicle data gathering unit and data analysis, and reporting cloud applications
- Based on ŠKODA DIGITAL's own HYPEX vehicle platform and renowned industry grade cloud EAM and APM applications
- Applicable to both new vehicles and the customer's current fleet as a retrofit package
- Easily customizable per-project based on the customer's requirements
- Provides unprecedented operational and diagnostic data availability and opportunities for analysis, including anomaly detection, condition-based maintenance and fault prediction for all standard vehicle sub-systems. It includes power supply, traction, brake, door, undercarriage, fire-extinguishing, air-conditioning, lighting, multimedia, passenger information and ATO systems

Description

The PREMIS solution provides an extensive package of functions for the gathering, recording, analysis and especially the visualization of operational and diagnostic data (smart data) from the vehicle and other parts of the entire operation. It also includes a maintenance ecosystem to cover a number of cases related to vehicle operation, maintenance and data processing for further use (RAMS, the optimization of maintenance activities, spare parts purchasing and logistics etc.).

The solution provides the identification of problematic components or areas of vehicle operation based on operational and fault data and machine learning algorithms (e.g. why on this particular line, vehicle doors on the left side have more faults than on any other line?).

The solution covers all parts of maintenance processes including vehicle as-maintained bill of material, operational data gathering and transmitting, a maintenance intervals overview, maintenance tasks planning and execution, fault reporting and analysis.

A complete package of advanced reporting is available and is subject to project customization based on specific customer needs.

Components

- **Vehicle diagnostic unit HYPEX NDS (IoT edge device)**
 - Gathers operational and diagnostic data and provides the data securely to the cloud services using GSM/Wi-Fi connection
 - Please refer to SKODA DIGITAL's „HYPEX platform” product list for more details on all features of the HYPEX NDS unit
- **Cloud EAM solution (Enterprise Asset Management)**
 - Provides as-maintained vehicle BOM, fault reporting and management of maintenance activities and other services
- **Cloud APM solution (Asset Performance Management)**
 - Stores and analyses incoming vehicle and EAM data
 - Provides superior data analysis including anomaly detection and fault prediction
 - Provides advanced reporting functions including customer template-based exports for standardized periodic reporting

Operating conditions

- Please refer to SKODA DIGITAL's „HYPEX.NDS” unit product list for more details on the operating conditions of the HYPEX NDS unit
- No special conditions apply to the cloud components of the PREMIS solution