

# The Work Algorithm of the Truck Intelligent Predictive Diagnostics System

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## Abstract

© 2020 IEEE. The paper describes the general structure and operation principles of the intelligent predictive diagnostics system for the condition of the main components and aggregates of a truck. The proposed system allows real-time assessment of the current value of the remaining resource of the main components and assemblies of a truck, taking into account the actual operating conditions. Also, it allows to record the transition of vehicle subsystems to the pre-critical state. The actual operating conditions are taken into account and the actual value of the residual resource is calculated by introducing a special raising factor that determines the increased consumption rate of the vehicle subsystems resource. The value of this coefficient at any time is determined by mining data about the current operating conditions of the selected subsystem using fuzzy logic. The article provides a list of the main subsystems of the vehicle and their components, for which it is considered expedient to determine the residual resource using intelligent methods, as well as examples of the construction of calculation algorithms. The use of the proposed intelligent predictive diagnostics system will significantly increase the efficiency of using trucks, reduce the cost of current repairs and maintenance, and significantly increase the reliability of transport and logistics systems.

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## Keywords

algorithm, fuzzy logic, predictive diagnostics system, truck

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