

Digital fleet management for Ambulance Service

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The push for healthcare digitalization is growing, with increasing demands for security, data processing and streamlined applications. In the broader context, the technology can not only be used in a clinical setting, but also in emergency medicine –specifically the emergency vehicle fleet management. The main contribution of the work is to provide a reliable, secure and intelligent platform for the Bucharest-Ilfov Ambulance Service to monitor the vehicle parameters in real time, with input from ambulance drivers. The proposed solution is the development of an application –Ambuparc –for both the driver and fleet manager to report the technical condition of the vehicle, schedule service appointments and more vehicle specific actions. Primarily coded in TypeScript, the driver application contains a predefined set of technical questions that the driver must answer regarding the vehicle’s condition. All responses are collected and viewed by engineers on a web dashboard that can use Artificial Intelligence to predict and prevent any mechanical faults in a certain vehicle type, based on the fleet history and other parameters. The dataset provides information gathered from 8 ambulances and 5 ambulance drivers, from March 2025 up to June 2025. Every emergency protocol begins with the safety of the medical personnel, and it can also be thought of as the technical status of the ambulance itself. As such, the data gathered by Ambuparc plays a crucial role in the safety factor of each shift. The application addresses the emerging standard in a modern emergency medical service fleet management.

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