

Predictive Maintenance in Vehicles



Istognosis Navarchos 3 Fleet Management Platform <https://www.navarchos.com/>

NAVARCHOS 3 provides:

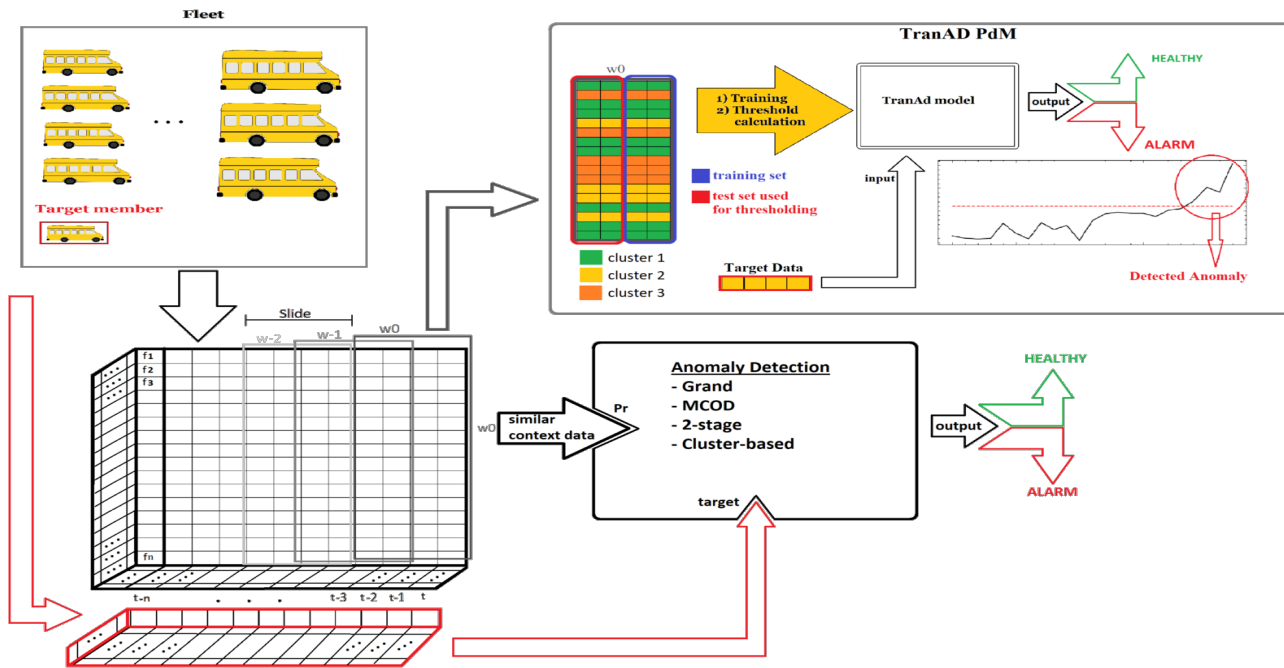
- a holistic view of vehicle management by **integrating a PdM service in a Fleet Management System (FMS)** and
- an extensible interoperability layer for supporting a high number of compatible IoT fleet-oriented devices.
- It aims to
 - **detect failures** based on DTC trouble codes during the operation of vehicles by applying event-based techniques and ML models;
 - alarm the driver whether to **perform an unexpected/necessary service**;
 - notify the vehicle owner to **avoid an unnecessary service**;
 - profile the **driver behavior**.



Techniques:

- Combine DTC codes, OBD-II PID signals and service logs.
- Develop context-aware semi-supervised learning solutions.
- Predict forthcoming problematic DTC codes based on OBD-II PID data.
- Adopt a wisdom-of-the-crowd approach when there are multiple similar vehicles operating under similar conditions.

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Giannoulidis, A., Gounaris, A. A context-aware unsupervised predictive maintenance solution for fleet management. *J Intell Inf Syst* (2022). <https://doi.org/10.1007/s10844-022-00744-2>