

# Demand Simulator

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# Overview

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## Development of spare parts demand simulator

- Simulation framework generates **synthetic spare parts demand** for a population of trucks by employing **survival models** with time-varying usage states and operating conditions.
- **The simple simulator:**
  - Advances in daily steps over one year.
  - Defines **10 trucks** and attaches **100 types of unspecific parts**.
    - Attaches **distinct failure model** for each part. [Exponential, Weibull, Log-Logistic, Gompertz]
    - Each model parameter is constant.
  - operating conditions (usage pattern, terrain, ...) are **not yet considered**.
  - Failures are logged as **demand events** for forecasting and inventory-policy evaluation.

# class diagram

