

# Autonomie Model

(Argonne National Laboratory)

## Objectives

Perform simulations to assess the energy consumption and performance of advanced component and powertrain technologies in a vehicle system context.

## Key Attributes & Strengths

Developed over the past 15 years, Autonomie has been validated using component and vehicle test data, providing confidence in the results. Thus, the tool is widely accepted by the industry and has been licensed to more than 150 organizations worldwide. The model supports the rapid evaluation of new component and powertrain/propulsion technologies through virtual design and analysis in a math-based simulation environment. Autonomie is designed for rapid and easy integration of models with varying levels of detail (low to high fidelity) and abstraction (from sub-systems to systems and entire architectures), as well as processes (e.g., calibration, validation, etc.).

## Platform, Requirements & Availability

MATLAB®-based software environment and framework for automotive control system design, simulation and analysis. Graphical user interfaces support the selection of processes, configuration, and database management for any data type. Links with commercial off-the-shelf software applications for detailed, physically-based models, including GT-Power®, AMESim®, CarSim®, and AVL-DRIVE®.

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