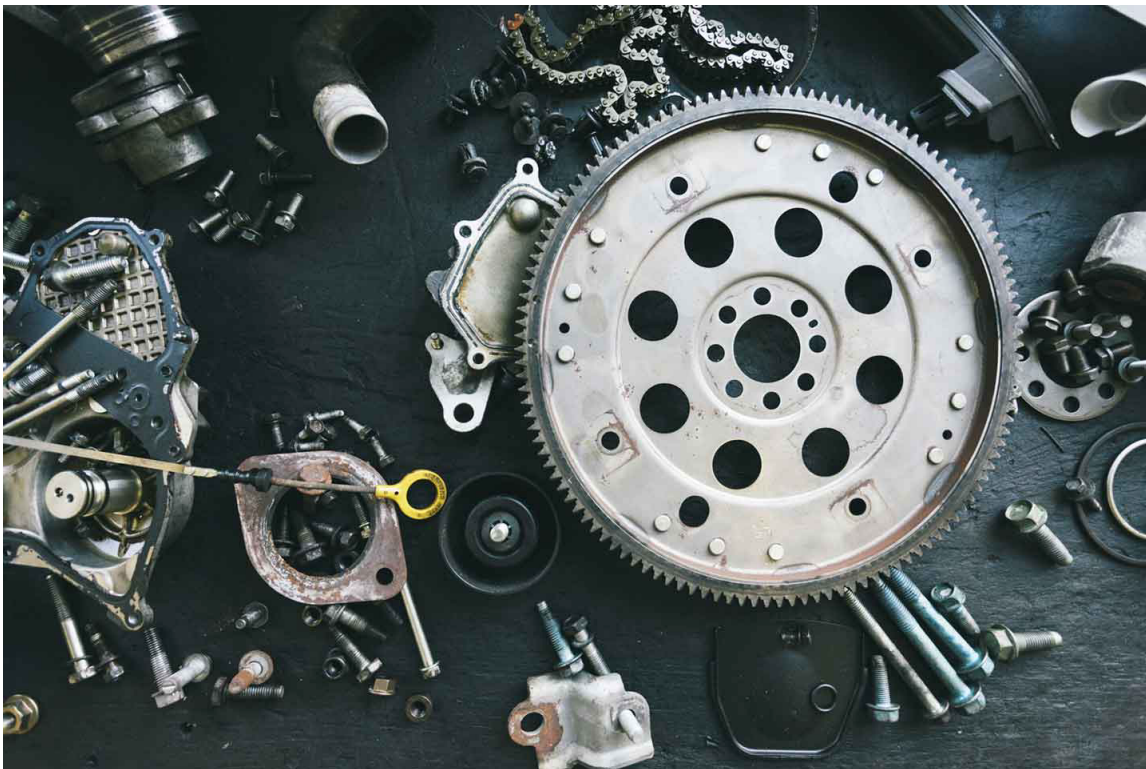


IN-DEPTH ANALYSIS OF ENGINE PERFORMANCE

1D THERMODYNAMIC SIMULATION

The software's modular architecture allows complete engine dynamics and fluid networks to be analyzed, optimized and validated in detail — essential for developing efficient and clean powertrains.



Combustion modelling:

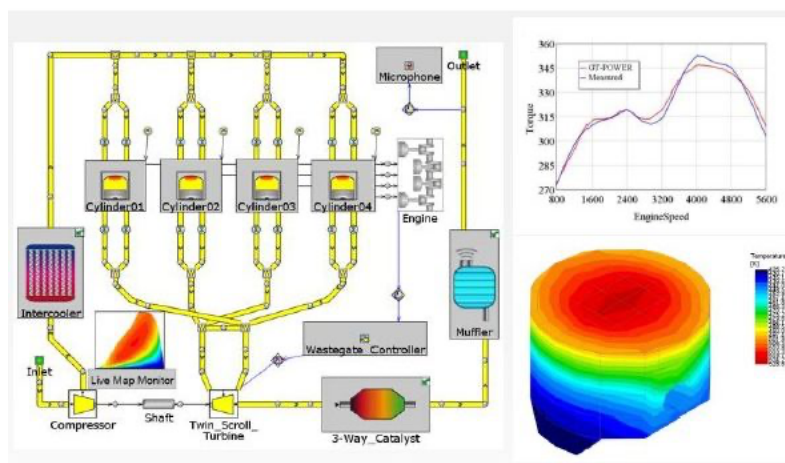
Support for SI, CI, HCCI, PPCI and dual-fuel configurations with detailed cylinder and wall heat transfer models

Emission Prediction:

- Accurate calculation of NO_x, CO, HC and PM based on kinetic models and user-specific calibration

Gas and liquid flow:

- Simulation of intake, exhaust, EGR, turbocharging and aftertreatment with link to 3D CFD or test data



Lubrication system analysis:

- Modeling of oil loss, oil aerosol formation, oil distribution and interaction with blow-by and piston rings

Additive studies:

- Evaluation of the influence of fuel and oil additives on combustion efficiency, emissions and thermal stress

Virtual testbed:

- Integration of real-time simulation for HIL/SIL applications and support for co-simulation with ECU calibration environments