



AVL HYBRID TESTING SOLUTIONS

AVL HYBRID DEVELOPMENT PLATFORM™

HYBRID DEVELOPMENT PLATFORM

Main Item Description

The AVL Hybrid Development Platform™ offers test bed solutions for the testing and calibration of hybrid powertrains and their associated system components. Based on proven and stable test bed technology including the addition of hybrid extension instrumentation, the AVL Hybrid Development Platform™ is a unique platform that has been designed to meet customer-specific application requirements.

AVL provides a range of innovative high-quality products developed specifically for customers either wishing to introduce a completely new testing solution along with new test beds or for those that require an hybrid upgrade of existing test beds.

The core innovation of the AVL Hybrid Development Platform™ is the Hardware-in-the-Loop (HiL) technology. This technology allows incorporating the tasks of integration, optimization and validation into earlier phases of vehicle development processes, thereby, improving quality and efficiency, whilst reducing development time. The platform supports the optimization of performance, consumption and emission as well as the driveability of hybrid vehicles.

The AVL Hybrid Development Platform™ provides the basic for for RT Movie Animation, modular HEV simulation conditions with models for vehicle, dricer, tire, road, brake, powertrain, transmission and differential (AVL HDP Basic Edition™). Further the interface to different test bed types (engine, powertrain) is integrated on AVL InMotion™ for Route Based Testing (AVL HDP Testbed Integration Package™).

**Function Summary**

- Durability Testing of engine and powertrain under highly reproducible conditions
- Test of electric motors under real and virtual conditions
- NVH measurement as well as emission and consumption measurement in stationary and dynamic conditions
- Route Based Testing and Model Based Testing on the AVL test bed (Start / Stop, Recuperation, Launch, Boost)
- Engine and powertrain application and optimization

Application

- Virtual vehicle test in real-time (RT) on an AVL test bed for development and test of control systems and vehicle components
- Optimization of Start/Stop performance
- Energy Management
- Simulation of energy distribution in the vehicle
- Optimization of Hybrid Concepts
- Launch Control
- Regenerative Braking
- Mode Shift Quality Calibration
- Driveability Calibration
- Vehicle Stability Calibration
- Optimization of State of Charge (SOC)
- Electric Boost
- Component Design Evaluation
- Development and optimization of the Hybrid Control Unit (HCU)
- Development of ESP

Benefits

- A fully integrated AVL Hybrid Development Platform™ on an AVL test bed
- Scalable solutions from one source: single xCU's up to complete testbeds including all vehicle control systems and different simulation models to meet the customer-specific requirements at the best
- Professional solution for virtual test driving with a powerful, stable and proven technology
- Open and flexible model integration platform for integrating customer-specific models (AVL InMotion™)