

AVL



AVL VIRTUAL TESTBED™ – CALIBRATE BEYOND THE LIMITS

The AVL Virtual Testbed™ makes the model based development approach easy to access & implement into the development process for the calibration engineer.

THE CHALLENGE

The increasing vehicle diversity, combined with a multitude of worldwide emissions regulations, including the future introduction of RDE (Real Driving Emissions) and the hybridization of vehicles is leading to significantly increased development requirements and efforts. Meeting these stringent demands with conventional methods typically requires the need for additional test facilities: Engine & Vehicle Test Environments, Test & Validation Vehicles.

In particular, calibration under extreme environmental conditions, such as high altitude and extreme environmental temperatures (typically -30 to 40 degrees) requires the utilization of expensive climatic test chambers. To maintain competitive development times and costs despite the increasing complexity and test requirements, new methodologies are needed to ensure an efficient, reliable and flexible approach.

Challenges in Calibration



AVL Virtual Testbed™:
Extension of real testing facilities to
perform virtual calibration development

AVL CRUISE™ M & MOBEO
Advanced semi-physical
powertrain model

AVL SANTORIN HOST™ server
connection, storing simulation results
in same format as real test data

Application
software

AVL PUMA Open™ & AVL CAMEO™
testbed automation delivering
identical interface for the calibration
engineer as on real testbed

Integration of customer specific
models and establish 3rd party
simulation platforms

THE AVL SOLUTION

AVL has developed a virtual calibration solution as an efficient way of responding to the challenges. This approach enables calibration development which is traditionally conducted in the real test environment to be transferred to its digital twin – the AVL Virtual Testbed™. A virtual powertrain with real xCU is running on a virtual test environment.

Model based development easy accessible

The essential components

- Hardware-in-the-Loop-platform (HiL)
- Model
- Calibration tool
- Test automation

are combined in a pre-tested system with a vital supplement for a consistent tool chain.

The AVL Virtual Testbed™ makes the model based development and calibration approach easy to access & implement into the development process for the calibration engineer. The AVL Virtual Testbed™ provides a turnkey solution for virtual calibration with a consistent user experience.

Full test field integration

Test field operation profits through full integration of the AVL Virtual Testbed™ in the existing test field. The AVL Virtual Testbed™ joins existing data management and the measurements are transferred to the server system like any other testbed.

THE ADDED VALUE

- Significant cost and time savings throughout the development process
- Improved calibration quality
- Absolute reproducibility of testing conditions
- Integrated development environment:
lab – testbed – road
- Early issue detection
- Common platform: Same user experience from road to virtual environment

FOR FURTHER INFORMATION PLEASE CONTACT:

AVL List GmbH, Hans-List-Platz 1, 8020 Graz, Austria
Phone: +43 316 787-0, fax: +43 316 787-400, email: info@avl.com, www.avl.com/virtual-testbed