VECON 2 AND AVL PUMA 2™ VEHICLE

AVL Vehicle Testbed Automation and Control

THE CHALLENGE

The new generation of hybrid, battery electric and hydrogen powertrains and more demanding emission standards are changing the requirements for vehicle testbed automation and control. A consistent and flexible solution is needed to provide the optimal support for the development of vehicles powered by whatever drive concepts, today – and in the future.

THE AVL SOLUTION

VECON 2 is AVL's leading chassis dyno operating and control system, offering the highest testbed quality in terms of legislation, data conformity, control behavior and testbed usability. Designed to work with AVL RoadSim™ chassis dynamometers, it boasts precise measurement of force, speed and time, which enables high-performance control. This facilitates highly realistic vehicle testing, which is fundamental to successfully test electrified vehicles.

Used in combination with our testbed automation system, AVL PUMA 2™, it forms a consistent toolchain that can be adapted to your specific needs. By integrating e-storage systems and battery simulation models, it can accommodate test vehicles with any new propulsion concepts. Furthermore, when used with our emission automation system AVL iGEM 2™ the vehicle testbed becomes a state-of-the-art certification lab.

At AVL we also offer software maintenance contracts to ensure the value and stability of our software throughout the entire product lifecycle.

Consistent tool chain from virtual to reality

AVL's automation system for maximum efficiency of the chassis dyno application

Fast and easy transfer from road to rig

THE ADDED VALUE

- A workflow-oriented user interface guides the operator through the vehicle setup, reducing rigging time
- Automated quality assurance tests increase productivity
- Consistent traceability of results ensures the highest process quality

HIGHLIGHTS

- Excellent axle synchronization* for the testing of various vehicle types, from conventional to electrified
- Exact distance behavior makes the system particularly suitable for research tasks
- Integrated simulation models provide maximum system utilization

AREAS OF APPLICATION

- Emission development and testing
- Mileage accumulation and durability
- Performance and consumption development
- E-Vehicle certification
- NVH (Noise, Vibration, Harshness)
- EMC (Electro Magnetic Compatibility)
- Climatic and environmental testing
- ABS-testing for single wheel
- ADAS

VEHICLE TYPES

- Light duty
- Heavy duty
- ATVs and trikes
- Motorcycles
- Single wheel

TECHNICAL DATA

Key facts	• Windows 10 • Support of all vehicle testbed applications • Support up to three axels
Quality checks	• Automated quality assurance procedures • Scheduler for predefined automated quality assurance tests
Legislation	• Support of global emission standards • Used by several authorities worldwide like CARB (US), KBA (GER), TÜV etc.
Standard software functions	• Continuous measurements with up to five recorders in parallel • Signal flow navigator to understand where values come from and go to • Integrated parameter comparison tool in AVL Navigator • Built-in tool to analyze testbed log files • Parameterization with intelligent auto-complete function, drag and drop capabilities and graphical editors • AVL CONCERTO 5™ for powerful data processing and reporting • Up to 20,000 quantities to manage all types of user variables
Measurement devices and sensors	• Tractive force measurement ±0.05 %* • Supports e-storage and more than 100 different measurement devices • Various power analyzers supported
Control and monitoring	• 1 kHz control cycle • Deterministic real-time behavior • Axle synchronization ±0.02 km/h* • Integrated vehicle control via actuator or e-gas • Temperature related dyno loss compensation • Protection of the unit-under-test with multi-level safety monitoring • A post-mortem recorder automatically captures data in case of events
Simulation	• Integrated driver simulation • Customer specific simulation model integration based on Testbed.CONNECT™
Interfaces	EtherCAT, CAN, CAN FD, CCP, XCP (via CAN), OPC, PROFIBUS, PROFINET, AK, ASAP 3, iLinkRT™…

* With AVL ROADSIM 4"

FIND OUT MORE

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