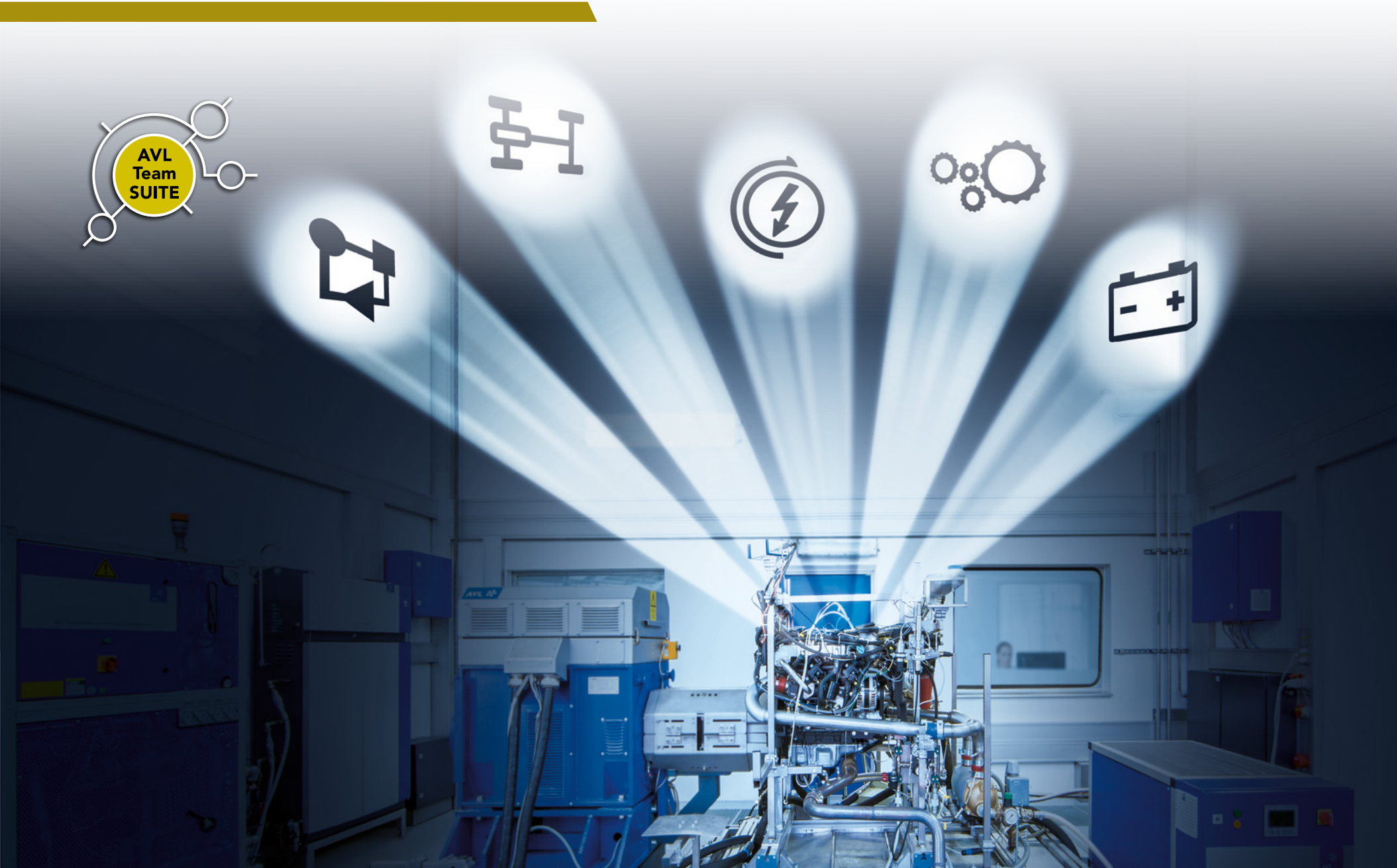
# AVL ARTE.Lab 4™

Enrich your testing




## REAL-TIME MODEL INTEGRATION

### THE ADDED VALUE

- Seamless integration of customers-specific Simulink® models
- Consistent user experience in deployment, parameterization & execution
- Early integration tests enable holistic system evaluation & calibration
- Shortens testbed downtimes by fast & easy model integration
- Guarantees safe and robust operation on the testbed

# AVL ARTE.Lab 4™ - Enrich your testing

## THE CHALLENGE

### Control and automation requirements

Customer applications need to fit to the individual testing task, which means that the testbed operations must guarantee robustness and reliability.

### Consistency throughout the process

Consistency along the existing customer processes is indispensable for achieving comparable results. Furthermore customers need to be able to handle models in a consistent way, online and offline, within the parameterization as well as the execution.

### Testbed time is money

Time used on a testbed is costly, so it needs to be used wisely. Customers are seeking for reproducible results, a quick adaption to different prototype variants, whilst being productive 24/7.

## THE AVL SOLUTION

### Enhance the capabilities of your testbed

With AVL ARTE.Lab 4™ customers are more accurate by linking simulation with real hardware and by performing component integration as well as confirming robustness, durability and reliability. Furthermore, the integration of applications for automation, control and monitoring tasks on the testbed increases the efficiency for testing.

### The need to simulate what's not there

Customers can use missing prototype components as simulation models and are thus able to support the entire vehicle development process efficiently and consistently. AVL ARTE.Lab 4™ does not only allow early integration tests but also combines virtual and real components.

### Use testbed time wisely

AVL ARTE.Lab 4™ facilitates early integration tests and prevents long waiting times for unavailable prototype parts by supplementing the testbed with virtual components in a flexible, modular manner. It not only provides reusability of existing model libraries but also intuitively supports the proper integration in a secure and safe way.

## APPLICATION TASKS

AVL ARTE.Lab 4™ allows you to fulfill the following application tasks to support the entire vehicle development process in an efficient way.

### HYBRID ENGINE TESTING

AVL ARTE.Lab 4™ enables the integration of controller algorithms and simulated components.

- Simulate vehicle and hybrid drivetrain
- Combine with hybrid controller algorithms
- Evaluate engine start/stop strategies

### COMBUSTION CONTROLLER

AVL ARTE.Lab 4™ guarantees a stable & robust operation, safe and secure.

- Reliable and traceable variation strategy
- Safe engine operation in critical conditions
- Engine test bed operation without pre-calibration of ECU

### SIMULATION OF ADDITIONAL LOAD

AVL ARTE.Lab 4™ helps to increase the realism of testbed tests.

- Continuous and discontinuous loads can be simulated and applied to the UUT
- Enable more realistic fuel consumption test, durability tests, thermal management
- Simulate air condition system, electric steering aid, etc.

### THERMO MANAGEMENT OF COMBUSTION ENGINES

AVL ARTE.Lab 4™ manages controller algorithm parameters together with UUT-parameters.

- Control the engine's operating point according to thermal conditions
- For fuel consumption optimization
- Tune control algorithms online

### STARTER MOTOR SIMULATION

AVL ARTE.Lab 4™ facilitates tests of start strategies with different simulated starter motor variants.

- Start procedure evaluations
- Automated exchange of starter motor parameters

**ENRICH YOUR TESTING HERE:**
www.avl.com/enrichyourtesting

## POWERTRAIN DEVELOPMENT IS A TEAM SPORT

Today´s requirements in powertrain development move forward every second. Complex systems, shorter times to market and a global world of opportunities challenge you to be better, more flexible and faster than your competitors.

Development tasks aren't stand-alone. And it's not (just) about how good single individuals or tools are…

… it's about how well they work together.

# AVL Team SUITE™

**SUCCESS BASED ON INTERPLAY**

www.avl.com/meet-the-team


## COMBINE YOUR STRONG TEAM FLEXIBLY OUT OF COMPATIBLE, COMPLEMENTARY PLAYERS TO MEET YOUR NEEDS.

- AVL PUMA Open 2™
- AVL EMCON 6™
- AVL LYNX 2™
- AVL SANTORIN MX 2™
- AVL TESTLIFE 1™
- AVL CAMEO 3™
- AVL CRETA 4™
- AVL CONCERTO 4™
- AVL-DRIVE 4™
- AVL VSM 4™
- AVL ARTE.Lab 4™
- AVL InMotion 4™
- AVL IndiCom 2™
- AVL iGEM 2™
- AVL TESTGATE 1™
- AVL ISAC 6™

… and more joining soon

**SUCCESS BASED ON INTERPLAY**

## HIGHLIGHTS

### FAST

Increase your efficiency by reducing installation time and providing high quality along the development process.

- Flexibility of introducing model changes in a fast and easy way
- Automatic model parameter change out of the test run
- Simplified model deployment on the testbed

### INTEGRATED

AVL ARTE.Lab 4™ is available as reliable in-system solution together with the automation market leader AVL PUMA Open 2™.

- Common real-time environment for simulation and other real-time tasks
- Direct access to automation system functions

### ONLINE MODEL ACCESS

AVL ARTE.Lab 4™ enables one central access point for testbed parameters, model and model parameters.

- Automatic model and model parameter deployment on testbeds or in testfields
- Model and model parameter versioning
- Storage with parameters of AVL's automation system AVL PUMA Open 2™

## FOR FURTHER INFORMATION PLEASE CONTACT:

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