

AVL SCENIUS™

Safe in every sense

THE CHALLENGE

One of the major hurdles in developing vehicles with assisted driving (ADAS) or automated driving (AD) functions is to ensure the safe operation for all kinds of defined conditions and constraints. Consequently, a vast amount of test scenarios need to be managed, prepared, documented as well as executed in simulation, at the test track and road. To handle the huge number and complexity of ADAS/AD test scenarios, validation and testing, engineers require a comprehensive and efficient toolchain for easy scenario management, intelligent test planning and residual risk and test coverage evaluation.

AVL SOLUTION

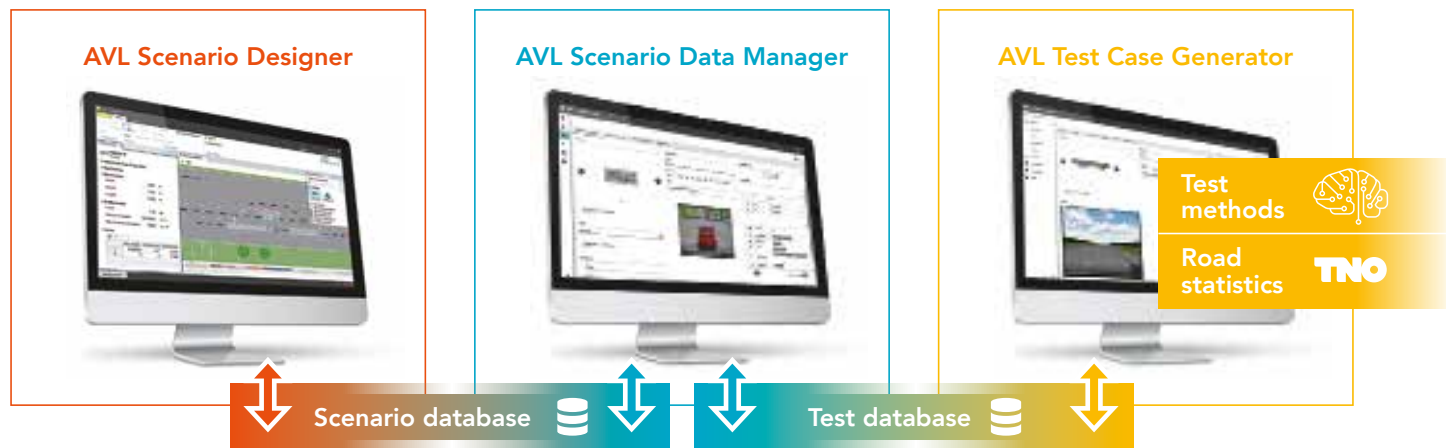
The AVL SCENIUS™ suite is a holistic and groundbreaking solution for scenario-based ADAS/AD verification and validation which supports the complete process from scenario design, scenario management, test case generation, test allocation and result reporting. The inclusion of AVL's multi-domain knowledge leads to increased test performance to release safer products in less time. The smart scenario designer tool is based on latest standard formats and supports developers during creation, parametrization and verification of complex scenarios.

A scalable scenario database together with extensive scenario data management ensure traceability and conformity to the latest test standards and safety regulations. Unique intelligent test planning methods enable various options for identification of relevant scenario parameters and optimization of test cases and coverage. Open interfaces and modular design allow a seamless integration into different test and development environments. Advanced reporting dashboards lead to faster analysis and deeper insights on the test execution results.

THE ADDED VALUE

- Time and cost saving: Guided scenario-based workflow and optimized effort through smart algorithms, road statistics and ontologies
- Efficient: Increased test performance through a smart variety of reliable testing approaches
- Fast integration: Open and standardized interfaces into different test environments and other data sources
- Conformity: Support of latest test standards and regulations
- Traceability: Test progress, coverage and residual risk dashboarding

AVL'S ADAS/AD TEST PREPARATION MODULES



SCENARIO DESIGN

Easy traffic scenario design, editing, parametrization and verification

- Immediate scenario verification with fast playback
- Provision of optimal routes with editing functions
- Open to different data sources (simulation, test data, etc.)
- Executable in virtual and real environments
- Based on OpenSCENARIO standard
- Open to user-defined extensions

SCENARIO MANAGEMENT

Efficient and high-quality scenario handling guided by a standardized workflow

- Central storage and administration of relevant scenario content including digitized roads, traffic and environment parts
- Assists with functional and logical description of scenarios
- Import and export of scenario content packages
- Supports OpenSCENARIO, OpenDRIVE and OpenScenGraph standards
- Easy integration to other development environments or data sources

TEST CASE GENERATION

Optimized test planning with increased test performance and maximized test coverage

- Support of both manual planning and smart test planning approaches
- Test result dashboard with powerful filter and visualization options
- Generation of executable OpenSCENARIO files for virtual and real test environments
- Automatic test execution with AVL's Model.CONNECT
- Easy integration of other data sources

SMART TESTING APPROACHES

REAL-WORLD STATISTICS

TNO's StreetWise is a data-driven methodology that provides parameterized real-world scenarios and statistics for the development and assessment of ADAS/AD systems. Using StreetWise, the test plan can be adjusted according to the statistical occurrence probabilities of different scenarios.

TRUSTWORTHY AND RELIABLE TESTING

AVL offers a variety of testing approaches, including full factorial or combinatorial logic, as well as test planning based on ontology and system property knowledge models. These models fuse the knowledge about the operational design domain or other system properties with combinatorial testing logic and lead to a drastic decrease of test efforts.

FIND OUT MORE

AVL List GmbH
Hans-List-Platz 1, 8020 Graz
Austria

Phone +43 316 787-0
Fax +43 316 787-400
E-mail scenius@avl.com

www.avl.com/-/scenius

July 2021, Classification Public