AVL SMART MOBILE SOLUTIONS

RDE Simulation Package

MORE APPS TO FOLLOW

THE CHALLENGE

The ever-increasing volume of outdoor measurements implies a high demand for process efficiency. The RDE legislation has dramatically increased the need for real-world testing and poses new challenges for front-loading the development of RDE test vehicles and powertrain systems. Each vehicle and powertrain developer needs to distribute the RDE-relevant development efforts across different test environments – from vehicle to chassis and engine testbed – supported by vehicle simulation. Lacking deterministic speed and load conditions in the new legislation criteria, OEMs face the challenge of representing worst-case real-world scenarios which cause critical emissions for their specific engine and vehicle.

These real-world conditions are dependent on route, driver and traffic conditions which cannot be reliably repeated on road tests. This leads to a drastically increased number of road testing, associated with higher development cost and time.

THE AVL SOLUTION

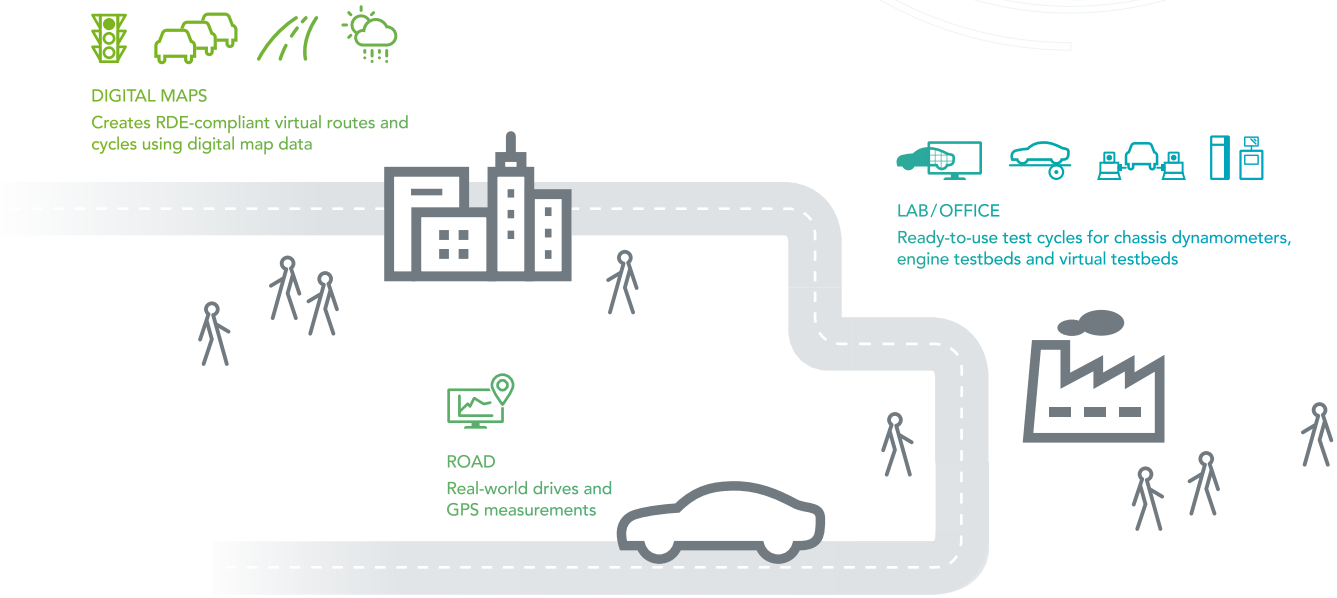
With the SMS RDE Simulation Package, AVL has created an easy way to move tests from the vehicle to the testbed in order to virtually investigate critical scenarios in RDE testing. It is now much easier and efficient to reproduce RDE road measurement on any testbed environment or to generate realistic RDE real-world route and speed profiles to analyze the most relevant testing conditions. The AVL SMS RDE Simulation Package creates a statistically significant number of RDE-compliant test conditions. In a few clicks, these cylces can be adapted further to be used on the testbed or in simulations.

THE ADDED VALUE

- Accurate reproduction of RDE tests on the testbed
- Early availability of RDE drive cycles without the need to go on the road
- Simple adaptation of driver behavior, traffic, vehicle data
- Flexibility to use different input data (PEMS, GPS loggers, calibration tools, etc.)
- Fast and accurate testbed conversions

AVL SMART MOBILE SOLUTIONS – SIMULATION PACKAGE

The RDE Simulation Package combines the benefits of Road-to-Lab and Map-to-Lab processes by combining two powerful software applications. The Road Converter processes and cleans RDE measurements, and converts them into simulation and test-bed-compatible test cycles. Cycle Generator, on the other hand, creates realistic RDE cycles by using digital map services or processing existing GPS data.



CYCLE GENERATOR

RDE Cycle Generator creates RDE-compliant test cycles that can be used on the testbed and in office simulation environments. Using digital map services online, it creates RDE-compatible routes and generates vehicle and road profiles.

- Virtual RDx cycle creation for various driver characteristics, vehicle and powertrain types
- Built-in Digital Map API services by HERE Maps
- Adjusts various RDE parameters such as positive acceleration, duration of stops, and urban, rural and highway sections
- Iterates different conditions to provide a statistical database for further worst-case condition analysis
- Creates RDE-cycle database to investigate the most relevant road and cycle conditions
- Creates exports for the AVL PUMA automation system and office simulations

ROAD CONVERTER

Road Converter overcomes the limitations of traditional test data conversion. It is the ideal tool for analyzing, reporting and reproducing test cycles in the era of digital transformation.

- Fast and accurate data acquisition algorithms fix and clean data flaws and noises
- Facilitates the RDE cycle preparation for testbeds through a unique user experience
- Compensates missing data by using digital map data sources
- Automated data processing workflow for testbed-ready conversions within minutes

Powered by HERE MAPS

FIND OUT MORE:

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