HORIBA

RDE+

RDE+ VIRTUAL

This application links a plethora of virtual tools to HORIBA's portfolio of hardware and test automation software.

This model-based approach allows 'front-loading' and more accurate and robust target setting within the early phases of a product development programme. Virtual environments and vehicles can be used to follow a scenario-based development methodology that develops and validates system hardware-in-the-loop (HiL) with virtual-based vehicle systems, environments and RDE scenarios.

Use of virtual vehicles and environments for validation eliminates the need for hardware and expensive environmental road testing, leading to increased confidence in the design. This allows safer and earlier decisions to be made in the vehicle development programme, resulting in huge time and cost savings.

SMART SOLUTIONS
FOR CLEANER AIR

RDE

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RDE+
VIRTUAL

BENEFITS

Time and Cost Savings from Programme Front-Loading

- Early development and optimisation of prototype propulsion and vehicles
- Early data to support advanced design freeze
- Reduction in prototype hardware required

Advantages of Scenario-Based Development

- Early programme running of scenarios for future legislation
- Identification of worst-case RDE scenarios for robust validation

Model-Based Development – Virtual Calibration

- Explore more of the design space, more effectively
- Rapid optimisation based on accurate response measurements
- Rapid optimisation of control systems

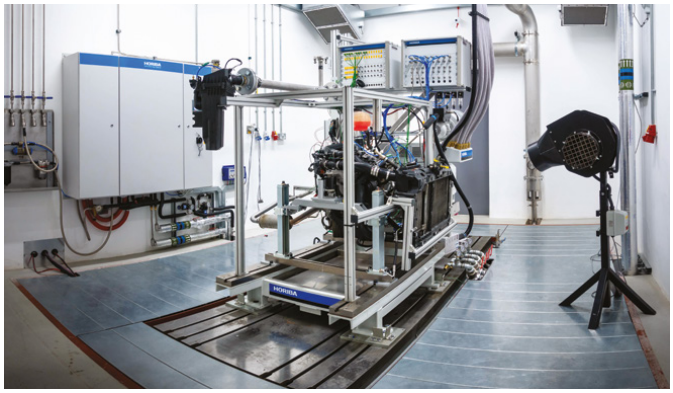
DEVELOPMENT IN THE VIRTUAL WORLD

Creation of the Virtual World

Real or virtually generated RDE tests and scenarios can be modelled, including environment, traffic and driver behaviour.

Digital Twin Vehicle

Ego vehicle model can be driven in the Virtual World to rapidly determine worse-case RDE scenarios and the impact of system optimisation of RDE attributes.



CONNECTING REAL AND VIRTUAL WORLDS

Hardware-in-the-Loop (HiL)

Connecting hardware (engines, powertrain, e-machines) to the virtual domain delivers tangible measurements from simulated scenarios.

Model-in-the-Loop (MiL)

Incorporating accurate attribute response models within the virtual domain enables office-based optimisation of power system attributes and calibrations.

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