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ADAS iiT offers test solutions for virtual test drive, combining sensor test, Sensor Fusion, HIL, V2X communication, GNSS simulation and integrated data management systems.

HIL Simulation

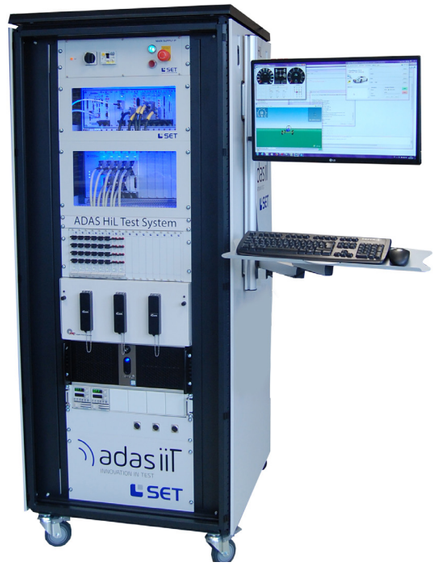
One Stop Test Solution for Autonomous Vehicles

adas iiT
INNOVATION IN TEST

Hardware in the Loop Test Systems

EXPERTISE

- Complete test of fully autonomous vehicles in a virtual environment
- Design, development, implementation, validation & production
- Virtual test drive seamlessly integrated into one system
- Fully automated test process
- Increasing reliability & repeatability
- Lower potential for failure and reduction of the overall risk
- Modular design allows for easy expansion
- Reduction of real testing time on the road
- Reduction of Total Cost of Test (TCoT)
- Fault injection according to ISO 26262



System Example

HiL SIMULATION

- Verification & validation of automotive components (e.g. ECU)
- Real-time model executi on (Vehicle, Road, Traffic, Driver, Environment)
- Standardized & modular HiL test system family: smartTEST L, M, S or XS
- Measurement technology based on NI PXIe & NI CompactRIO
- Control & evaluation of vehicle busses (CAN, LIN, FlexRay, BroadR-Reach)
- Standardized signal conditioning with NI SLSC (Switch, Load & Signal Conditioning)
- Power Distribution Unit (PDU) with safety system, circuit breaker etc.
- Software based on NI LabVIEW, NI TestStand, NI VeriStand & NI DIAdem
- Fault Insertion Units (FIUs) compliant with ISO 26262 – Functional Safety
- Customer-specific applications

Real-Time Simulation and Test

VIRTUAL TEST DRIVES

Real test drives are highly time-consuming, require a lot of test driver resources and cannot be repeated to 100%. Virtual test drives are inevitable to test todays sensors and sensor fusion electronic control units (ECU) for the future autonomous driving. With Hardware in the Loop (HiL), individual parts of an integrated system can be simulated and tested in a virtual environment in real-time.

STANDARDIZED HiL TEST SYSTEMS

The standardized SET HiL test systems allow for an efficient assessment of devices under test (DUT) while reducing testing time and costs but increasing reliability. The fully automated test processes lead to lower potential for failure and reduce the overall risk. We support you in project management – from defining system requirements to implementing and starting up the finished system.

FUNCTIONAL SAFETY

ISO 26262 is the international standard for functional safety of electrical and/or electronic systems in production passenger cars and supports companies in their endeavor to fulfill all safety-critical requirements. To test, characterize and validate the behavior of the device under signal fault conditions SET uses hardware fault insertion units (FIUs) compliant with ISO 26262.