

# AKKA

PASSION FOR  
TECHNOLOGIES



## PROVEtech:μHiL

### THE FUTURE OF HiL TESTING

The increasing number of electronic control units causes a rising demand of extensive advance function and reliability testing of these complex electronic units. Functional tests of ECUs in the early development stages have positive effects on development time and costs due to early fault identification. Therefore development and test departments have to work closely together with short feedback cycles, both having access to a test system.

In the conventional test systems deployed mainly in the test laboratories, the real-time hardware and the high engineering overhead involved in setting up an individual test system are the primary cost drivers.

#### REUSABILITY AND RECONFIGURABILITY

PROVEtech:μHiL brings real-time hardware-in-the-loop (HiL) testing together with a compact and modular design. Based on pre-configured plug-in solutions, the essential features for a HiL test system like fault simulation, signal conditioning and I/O hardware are integrated. As a result there are more ECU test options in a smaller space – a highly flexible test system for HiL applications not only in the test labs but also directly at the developer's desk.

PROVEtech:μHiL meets the customer demand of low-cost, compact and reusable test systems. Thus AKKA fulfils today's needs in ECU development: shorter time-to-market and a possibility to test the large number of ECU variants with one test system.

### OUR ADDED VALUE

Software configuration guarantees highly flexible test solution

- One test equipment – several ECUs
- Plug-in signal conditioning modules
- Configurable signal conditioning modules
- Connectable with standard PC technology
- All-in-one system (fault simulation, signal conditioning, I/O-hardware)

Test automation and optional for real-time operation

- Test automation through PROVEtech:TA supported
- FPGA technology embedded
- Support of (behavioral) models running in real-time

Low engineering efforts allow new dimension in affordability

- Possible cost reduction of up to 50%
- Project specific number and type of signal conditioning modules (1 to 4 per μHiL system)

Integrated solution sets new standard for compactness

- 'Desktop' test system
- Size: about 30 x 40 x 30 cm<sup>3</sup>



Automotive



Aerospace



Railway



Energy



Life Sciences



Telecoms



Space



Services and Informations Systems



Defence



Oil and Gas



Consulting



## THE FUTURE OF HIL TESTING

Flexible, precise and compact: PROVETech:μHiL combines the advantages of HiL testing with compact and low-cost design:

- Test automation, reproducibility, easy variability, real-time feedback of system reaction
- Early validation of functional safety during the development cycle
- Reduced test equipment costs through standard plug-in components
- Close connection of development and testing of ECUs due to direct location at developers desk

## THE TECHNOLOGICAL VIEW

- Powerful FPGA board for all fast control tasks and for run of realtime (behavioral) models
- Test automation software PROVETech:TA as front-end to control PROVETech:μHiL and to implement and run automated tests
- Software for hardware abstraction PROVETech:RE for communication between PROVETech:TA (PC) and PROVETech:μHiL
- Standard PC bus interface devices for necessary databus connection (CAN, LIN, FlexRay)
- Seamlessly connection and control to common battery simulations

