AVL MODULAR TEST CELL MECHANICS AND CONTROL ROOMS

APPROACH

A prerequisite for smooth test processes is sophisticated testbed mechanics in combination with ergonomically designed control room equipment. Based on long-term experience from all kinds of realized projects, AVL provides systems designed for the customer's specific application – for engine, powertrain, hybrid, racing and component test beds.

AVL's modular concepts allow a high degree of scalability from simple durability testbeds to highly sophisticated and complex powertrain development testbeds.

BENEFITS AT A GLANCE

- Reduced setup times due to mounting of the test specimens on pallet systems
- Quick and easy fixing of the pallets on the testbed
- Wide range of standardized drive shaft systems, with automatic docking function, if required
- Easy adaptation to changing requirements due to modular and ergonomic design of control room equipment
- Shifting test run preparation and evaluation from the test cell to the office by using the PUMA FlexiCart™ as simulator

TASK

The demands for more productivity in modern test facilities are constantly increasing. Besides intelligent measuring technique and automation, the mechanical automation of testbeds can essentially increase productivity by minimizing the setup and testbed down-times and increasing the quality of test results due to an appropri-ate design.

The pursuit of increased productivity also affects the testbed control rooms in the form of constantly changing requirements and work situations. Consequently, highly process-oriented design and functionality is required for control room equipment.

Quick installations and a simple setup of the testbed equipment require drive shaft systems with standardized mounting possibilities.

Unproductive duties like engine commissioning and decommis-sioning, rigging, media conditioning, system checks, calibration, service, maintenance and repair tasks have to be shifted out of the test cell to ensure optimal test cell utilization.

Support of the test facility's processes via Test Lab Management Software capable of planning test execution tasks and resources (test cells, personnel, pallets, sensors, etc.,…) is another area in which demands for increased productivity are on the rise.

Preparation and checking of test runs without utilizing the testbed are also required to improve testbeds availability.

REFERENCES

AVL PALLET SYSTEMS
As a supplier of various testbeds to premium car manufacturers worldwide as well as internal testbeds, AVL has a first hand knowledge of engine and powertrain developers.

AVL DRIVE SHAFT SYSTEMS
Having delivered more than 1000 drive shaft systems, we have acquired extensive experience in shaft dimensioning.

AVL TEST STATION
Process-oriented design, which has been recognized with a famous design award, fulfills ergonomic as well as functional requirements. By combining control room components with office furniture, a flowing transition between test stand operation and the office area is no longer a problem.

AVL FLEXI CART
The functions of the PUMA Open FlexiCart range from use as a simulator in the office to real test operation at an existing testbed with the PUMA Open “Migration” program. A huge number of PUMA 5 test fields have already been migrated to PUMA Open using AVL’s FlexiCart™.

BY USING MODULAR TESTBED MECHANICS, AVL’S TEST FACTORY WAS ABLE TO DOUBLE THE NUMBER OF TESTED PROJECTS PER YEAR (FROM 70 TO 150 UNITS) WITHOUT INCREASING RESOURCES.