INCREASE CALIBRATION EFFICIENY AND QUALITY

Passion. Innovation. Solutions.

INNOVATIVE SOLUTIONS FOR MODEL-BASED CALIBRATION

TOPEXPERT *FEV*

Learn more about the TOPEXPERT tools and inform yourself about the capabilities and advantages of TOPEXPERT on our website:

www.fev.com/topexpert

SOFTWARE SOLUTIONS FOR

MODEL-BASED CALIBRATION

The TOPEXPERT Suite is delivered with calibration guidelines, individual training courses, service and maintenance and can be customized to accommodate your requirements. Utilizing TOPEXPERT allows our customers to benefit from the cutting-edge methodology in order to reduce development time and increase calibration quality.

Your benefits:

> Optimize usage of your test resources
> Standardize your calibration processes
> Transfer calibration work to desktop
> Save up to 80% of calibration time by automated data evaluation and calibration optimization.

Contact

FEV GmbH
Neuenhofstraße 181
52078 Aachen · Germany
phone +49 241 5689-838
fax   +49 241/5689-7-838
www.fev.com

FEV's decades of experience in calibration and especially in the application of a model-based methodology have been incorporated into the TOPEXPERT Suite, FEV's central platform for calibration tools. The usage of TOPEXPERT facilitates the optimal planning of measurement campaigns, enables the automatic execution of test maneuvers in the vehicle or at the test bed, provides numerous routines for an efficient data analysis and offers the possibility of an automated data set optimization. With these tools costly engine and vehicle tests can be minimized and several manual iteration loops can be avoided. Tasks that needed several days of testing, data evaluation and verification in the past can now be accomplished within a few hours.
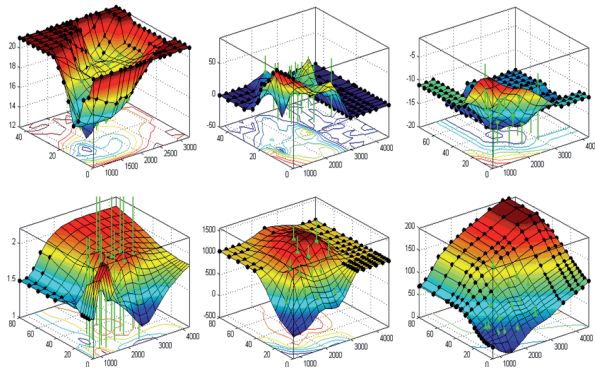
TOPEXPERT

TOPEXPERT **FEVCAL**

>> Virtual powertrain calibration based on Design-Of-Experiments <<

TOPEXPERT **FACE**

>> Automated data processing and guided desktop calibration <<

TOPEXPERT **VTA**

>> High-quality data aquisition by automated in-vehicle testing <<

TOPEXPERT **ASM BOX**

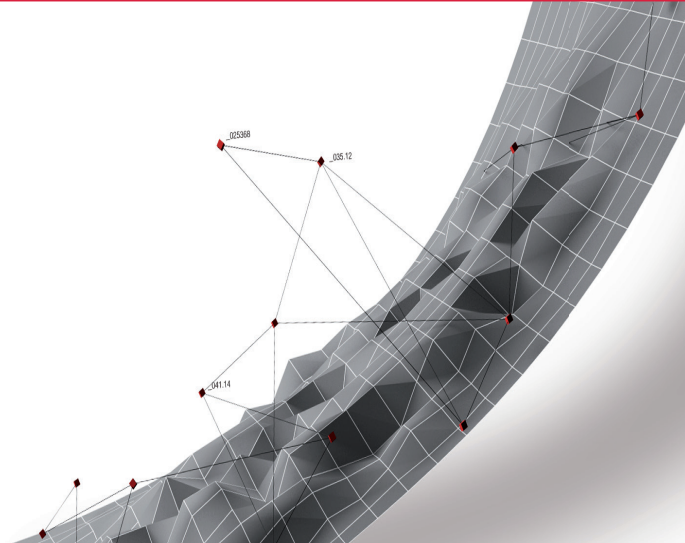>> Simulation of OBD failure pattern for homolagation and calibration <<

TOPEXPERT FEVcal makes the powerful Design-of-Experiments (DoE) technique easily applicable for all calibration engineers. Its advanced modeling algorithms and intuitive design makes even complex engine modeling a straightforward task.

Test plans created by FEVcal guarantee a minimum of measurement effort with a reduction of up to 80% compared to classical test planning. FEVcal simplifies the setup of calibration optimization by different task-specific modules. A simple optimization of one engine operating can be configured and executed within seconds. Extension modules offer the possibility of complex map and cycle optimizations.
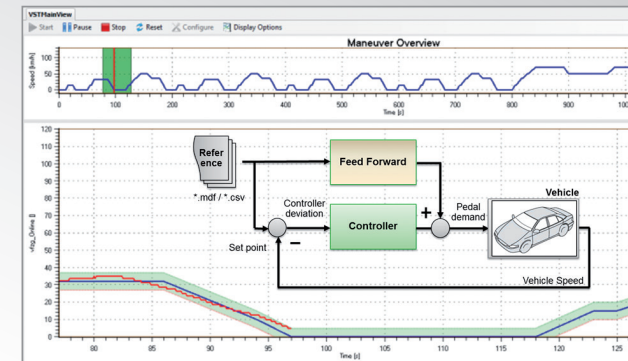
TOPEXPERT FACE is a novel framework for guided data evaluation and desktop calibration. FACE aims at standardizing, accelerating and automating calibration procedures. FACE offers a large library of data analysis, xCU simulation and calibration functionalities. Its data I/O routines and batch functionalities are specifically optimized for efficient RAM and CPU usage and enable fast automatic processing of several hundred data files. To support the standardization of calibration processes, FACE provides a unique workflow-based tool concept. The set of analysis and calibration functionalities can be arbitrarily combined to complex calibration sequences.

To increase vehicle testing and calibration efficiency, FEV has developed TOPEXPERT VTA. It facilitates the calibration engineer to plan test sequences at the desk using a comfortable graphical maneuver editor. The generated test descriptions can be executed in the vehicle, either guiding the engineer through the maneuver or completely taking over vehicle control. By this, testing time is reduced and test reproducibility and data quality is significantly enhanced.

Additional functionalities enable data analysis and calibration optimization online in the vehicle. On this basis the use of model-based calibration approaches like DoE can be successfully expanded to in-vehicle calibration.

FEV's TOPEXPERT ASM Box allows the efficient verification of OBD calibration by electrical manipulation of actuator and sensor signals for generating realistic failure patterns in the engine and exhaust system. The ASM Box can manipulate basic analog and digital as well as PWM signals, H-bridge circuits and CAN, LIN and SENT (J2716) interfaces are available as well. The ASM Box tool chain can be used with MATLAB/Simulink® and provides libraries for setting up arbitrary failure pattern in Simulink® models which can be compiled and downloaded to the box. These models can be parameterized via any calibration tool, e.g. INCA, to change the failure pattern behavior.