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Press Release

ETAS ASCMO: The New Tool for the Model-based Calibration of Complex Systems

Today's automotive propulsion systems are powerful, economical, and clean. Electronic controls facilitate optimized vehicle operation across the entire operating range. Needless to say, the control characteristics must be fine-tuned – i.e., calibrated – to suit both power plant and vehicle model. Due to the high degree of system complexity, calibrating modern engine systems on the test bench or in the vehicle is a task that is as demanding as it is costly.

ETAS ASCMO provides extremely accurate mathematical models of complex systems. As part of this process, the tool applies newly developed statistical learning procedures that permit a high level of model accuracy with relative ease. Once the accurate model has been completed, the control of an entire powertrain can be optimized automatically.

With its intuitive operation, ETAS ASCMO interactively guides the user through complex task sequences. Based on measurement data captured from the actual system on the test bench, the tool automatically feeds the mathematical model with parameter values. Statistical DOE (design of experiments) methods are used in measurement planning. It is the task of the tool to select the position and placement of measuring points in such a way that a model of maximum accuracy will be created with a minimum of measuring effort. This approach has ensured a proven reduction of measuring activity in excess of 80 percent in a number of practical applications. The tool's powerful optimization algorithms

not only aid the resolution of calibration target conflicts but also minimize consumption and emissions during a driving cycle. Based on the model, the tool is capable of generating hundreds of thousands of virtual measurement data that effectively replace real-world measurements on the test bench.

ETAS ASCMO is open and flexible. The tool supports all data formats relevant to test bench and calibration functions. It is capable of exporting existing models in a variety of formats. With the aid of the MATLAB® interface integrated in ETAS ASCMO, customer-specific functions and models can be easily integrated and script-based sequences automated. It is also possible to connect a test bench automation system.

ETAS GmbH

ETAS GmbH was founded in 1994 as a subsidiary of Robert Bosch GmbH. We today employ around 650 personnel and are represented in Germany, United States, Japan, Korea, P.R. China, India, France, UK, Sweden, Italy, Brazil, and the Russian Federation.

As a dependable and responsible partner, we offer a comprehensive product portfolio of integrated tools and tool solutions designed to increase quality and efficiency in the development and maintenance of embedded systems. Our tools are widely deployed in automotive and adjacent segments of the embedded industry.

The product portfolio is complemented by engineering services, consulting, training, and first-class customer service. We are an active contributor to standardization committees such as ASAM, OSEK, Nexus, AUTOSAR, AESAS, FlexRay, LIN, and JasPar.

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