



Case Study

Flexible adaptation to engine speed and momentary power requirements



**BorgWarner
Turbo Systems**

The Customer

BorgWarner Turbo Systems is one of the most important and innovative manufacturers of turbochargers with annual sales of approximately 6 million turbochargers. Its products range from single-stage and multi-stage controlled engine charging systems to the eBooster concept.

The Challenge

Flexible adaptation to engine speed and momentary power requirements

To develop a robust, flexible and economical rapid prototyping solution to be used for a wide variety of actuators in many different types of vehicles. In this process, to offer visualization of the application's Simulink model that helps the user in calibration.

The Solution

A high-performance ASAM-conformant tool for all tasks

In production operation, the turbocharger application is executed in the engine ECU. To enable flexible testing of different software levels during development, the turbocharger application is swapped out to the rapid prototyping hardware. This hardware consists of evaluation boards with integrated power electronics for driving a wide variety of actuators.

The Advantages

Efficient and quick turbocharger calibration

CANape is based on ASAM standards and supports the user by:

- ▶ Visualization of the Simulink models ⇒ no supplemental documentation is necessary
- ▶ Easy navigation through the model ⇒ efficient access to parameters and measurement variables
- ▶ Calibration of the Engine ECU and evaluation board, flashing of code and access to diagnostic / OBD data ⇒ a tool that is used for everything simplifies user training and tool handling
- ▶ Export of calibration data to the MATLAB environment ⇒ closed development cycle: from application development to calibration and back again

