

CALIBRATION TECHNOLOGIES

CAMEO TRANSMISSION

BREAKTHROUGH IN TRANSMISSION CALIBRATION TECHNOLOGY

CAMEO TRANSMISSION is a breakthrough technology, which ensures a quality oriented automated transmission calibration on chassis dynamometers. It copes with the increasing complexity in automated transmission software. The CAMEO TRANSMISSION software is the result of a collaboration with ZF Friedrichshafen, one of the major transmission manufacturers, and merges the best-in-class transmission know-how with AVL's competences in optimization technologies.



Transmission
Data Plugin

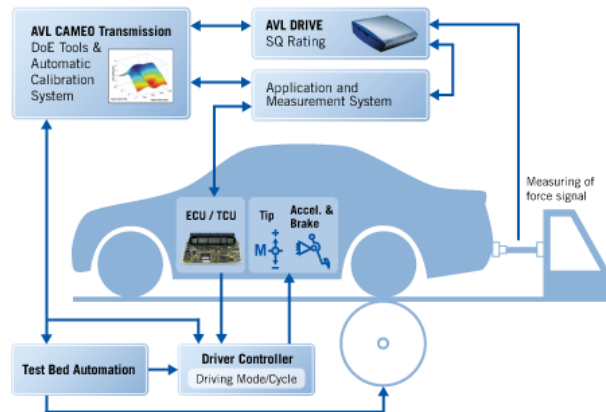
CAMEO TRANSMISSION strongly lighten the TEST PLAN and TEST RUN on chassis dyno system through an embedded VEHICLE MODEL, a TRANSMISSION DoE WIZARD and an intelligent test optimization procedure, which reduces the number of measurements and sorts the planned shifts into a driveable test sequence automatically.

Moreover, the CAMEO Team offers his support for Application and Development of customer specific features.

The transmission calibration fully includes the objective data analysis tool AVL DRIVE™ in the workflow.

System Configuration

CAMEO TRANSMISSION is a part of the AVL solution for an automated transmission calibration on the chassis dynos. The vehicle is connected to a frame via a longitudinal force measurement equipment. CAMEO TRANSMISSION is controlling through the chassis dyno interface a driver simulator to drive desired gear shifts and varying the Transmission Control Unit (TCU) parameters that influence the shift quality. The system also includes AVL-DRIVE for Transmission, which identifies and evaluates gear shift quality. Once the TEST RUN is completed, CAMEO TRANSMISSION optimizes the TCU parameters in order to reach the shift quality requirements (comfort, dynamic, sportiness, etc.).

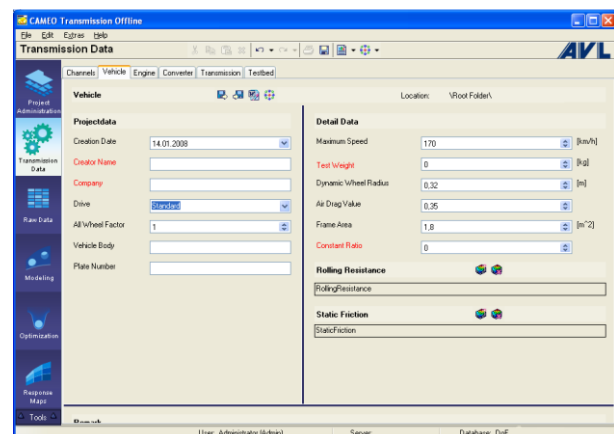


Features

The CAMEO TRANSMISSION supports the whole transmission calibration workflow through transmission dedicated features:

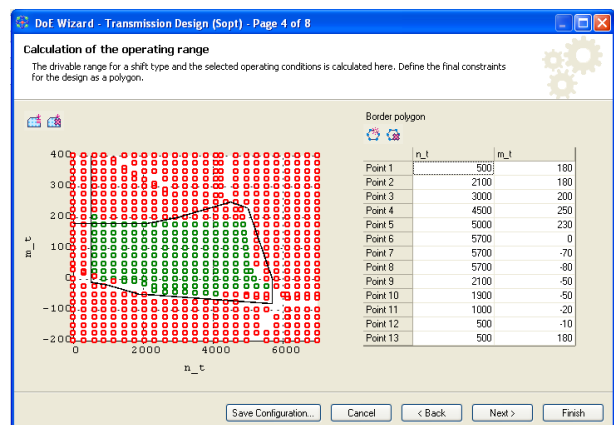
Transmission Data Plugin

The prerequisite for an easy and intelligent test planning is a simplified vehicle model, which can be parametrized in the transmission data plugin.



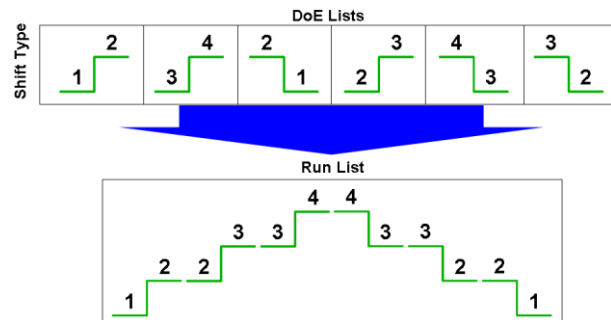
Transmission DoE Wizard

This DoE wizard was designed to fulfil the requirements of the transmission calibration engineers. It enables a DoE List generation through eight easy steps supported by automatic driveable range calculation and variation limits defined also by maps.



Sorting and Merging Test plans

Once a DoE List is generated for each gearshift type, an algorithm sorts and merges the DoE Lists into a driveable test (Run List), optimizing the number of measurements and introducing clutch cooling phases to avoid overheating.



Drive Driver

Drive Driver is a CAMEO interface, which allows filtering of DRIVE events from CAMEO.

Shift Correction

CAMEO TRANSMISSION is monitoring continuously the actual engaged gear. If a wrong gear is engaged, CAMEO TRANSMISSION TEST RUN automatically engages the correct gear and re-approach the correct operating point.

Chassis Dyno Interface

This interface allows the communication between CAMEO TRANSMISSION and non-AVL chassis dyno systems.

Error Monitoring

The diagnosis bit of the transmission control unit (TCU) is continuously monitored. A TCU diagnosis error causes a test run stop and brings the chassis dyno into safe conditions.

Your advantages at a glance

- Automated Calibration of Automatic Transmission
- Various variants calibration with the same dataset allow development cost reduction
- Overnight safe measurements



- It enables a quality oriented transmission development process and simplifies the calibration environment with ONE TOOL
- New features can be developed to create customized solutions
- Triggering and filtering of DRIVE events from CAMEO through the Drive Driver interface

Compatibility

CAMEO Transmission offers interfaces for the communication with external systems and programs:

- ASAP-2 based interface for the import of A2L-description files
- ASAP-3 interface for the exchange of data with an applications system
- CAMEO-DRIVE interface to interact directly with AVL-DRIVE

CAMEO TRANSMISSION / Products

CAMEO TRANSMISSION is offered in two versions: CAMEO Transmission Online, CAMEO Transmission Offline.

The Online Version is designed for your chassis dyno system and therefore with this version you can parameterize and run a test with the Transmission DoE Wizard and all the online features described above.

The Offline Version is offered with all the data analysis functionalities, including the MAP GENERATOR. We also recommend the following additional options:

- Neural Networks Toolbox: to generate models also using neural networks
- Transmission DoE Test Generator: if you want to generate a test offline.

Technical information

In order to guarantee the correct functioning of CAMEO Transmission:

PC to run CAMEO:

- Pentium IV processor 2 GHz /2,5 GHz recommended)
- Minimum 2GB RAM
- Minimum 4,2 GB Harddisk
- DVD drive
- 3D Graphic card (DirectX 9.0c with Managed Extensions): 32 bit, 1024 x 768 px (1280 x 1024 recommended), 65k, 64 MB RAM
- Ethernet LAN Card
- Ports: 2 x RS232 / 1 x LAN
- Operating System: Windows XP 32 Bit SP2 (language: English or German)

Scope of Supply



- CAMEO Data DVD
- CAMEO information folder
- User's Guide
- License file (after notification of the MAC address)

Please also visit us at www.avl.com/cameo_transmission or contact one of our technical offices for further details.