

# Latest Test Evaluation Methods and Test Rig/Equipment for Transmission

– GETEC Getriebe Technik GmbH –

Sven Steinwascher

## Summary

GETEC Getriebe Technik GmbH is an independent engineering service provider focusing on the powertrain development. GETEC specializes in the development of transmission technology including serial production know how. The objective is to fulfill the customized demands of all transmission related engineering services. GETEC combines transmission knowledge for MT, AMT, AT, DCT, CVT, Hybrid, EV from the scratch, CAE, CAD, software and calibration up to serial production. GETIT™ RLD – GETEC's Road Load Data (RLD) Acquisition and Evaluation Tool - enables engineers to generate a lifetime damage representative CAE duty cycle, test bench test cycle and vehicle test program. GETEC's RLD services includes the following steps:

- RLD Planning (target setting, measurement location & content planning, definition of required measurement signals, driver characteristic planning)
- RLD Preparation (vehicle preparation, sensor installation / CAN decipher, vehicle approval, logistics)
- RLD Conduction (RLD measurements on real road, on test track and in special environment or locations)
- RLD Evaluation (duty cycle, test bench test cycle, vehicle test program and test specification development)

The RLD Evaluation requires a deep understanding of the typical usage profiles and different tests the powertrain, transmission, system or component will “see” during lifetime. GETIT™ RLD will convert the time domain measurements into the duty cycle considering the related failure mechanism, damage transformation method and driver characteristic.

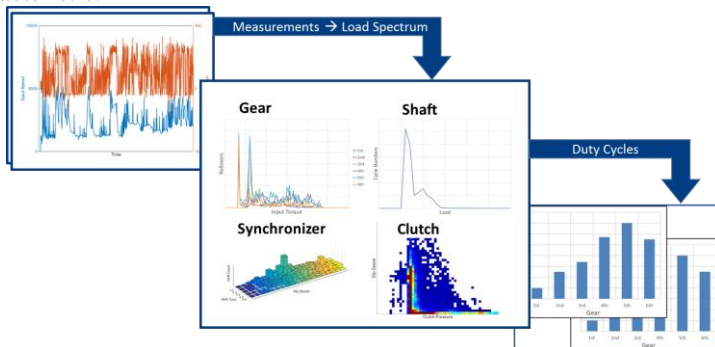


Fig. 2 GETIT™ RLD overview

Based on the duty cycle GETEC can then further define test bench test cycles, vehicle test programs and can develop the related test specifications.

GTSYSTEM GmbH (GETEC's sister company) is a specialist in the supply of testing facilities, especial test benches for Transmission, Powertrain, Hybrid and Electric Drive Unit. Grown from transmission testing GTSYSTEM has substantial experience and knowhow of requirements for testing facilities. Newest developments for test rig and equipment for transmission include:

- Durable test bench design for high speed electro mobility applications up to 20,000 rpm
- In close cooperation with the manufacturers, GTSYSTEM can supply a specific dynamometer design to fulfill future test requirements
- Development of new fast regulation methods and interfaces for converter control
- Engineering and manufacturing of new robot technology for all kinds of actuation demands
- GTSYSTEM has proven knowledge of integrating the complete vehicle model (wheel slip investigations, prediction of fuel consumption and emission behavior)

GTSYSTEM is trendsetter for new test bench technology due to common new developments together with university institutes and R&D departments of suppliers.