



## AMRITA AUTOMOTIVE RESEARCH AND TECHNOLOGY CENTRE



Automotive Test Systems and Amrita Vishwa Vidhyapeetham jointly established Amrita Automotive Research & Technology Centre (AARTC) in Coimbatore, The AARTC technical center is equipped with different test labs including Vehicle Evaluation Lab, RLDA Lab, and Powertrain with Emission Lab and NVH lab.

### VEHICLE DYNAMICS LAB

VEHICLE  
DYNAMICS  
LAB

POWERTAIN  
LAB

RLDA LAB

NVH LAB

## VEHICLE HANDLING TRIALS

AARTC is capable of doing different handling trials like Close loop handling tests, Open loop handling tests using steering robot as per IS standards. We also do time domain and frequency domain analysis of captured data of different trials. We have high end data loggers , Steering robot, INS and GPS base navigation sensors, Height sensors, IMU based sensors, Slip angle measurement sensors etc. for performing all these trials.



## VEHICLE PERFORMANCE TESTING

AARTC is capable of performing different performance trials like acceleration and brake test, ABS test, CSFC, coast down and FE Duty Cycle, steering effort and returnability test, wheel slip measurement. For performing these tests we are having different high end systems like Optical and GPS based speed sensors, Measuring Steering Wheel, Fuel flow meters, Wheel speed sensors, standard and ABS brake test setup etc.



# COOLING PERFORMANCE & HVAC TRIALS

AARTC is capable of performing different cooling performance trials like engine cooling trials, temperature, pressure & flow measurements, Axle/shaft and torque measurements, AC performance trials and De-aeration and pump cavitation test etc.



## POWERTRAIN LAB

We have following facilities at our AARTC Powertrain Lab:

- Transient Engine Dynamometer
- Eddy Current Dynamometer
- Chassis Dynamometer Test Cell
- Fast Response Heated FID Analyzer
- Thermal Shock Test Rig



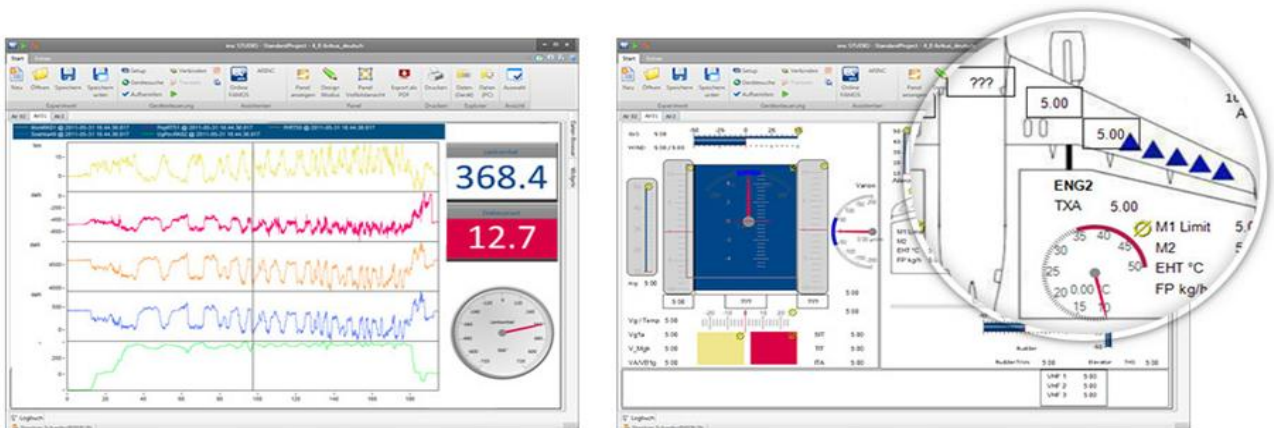
At AARTC facility we are capable of doing different test like In cylinder Residual gas measurement, Catalytic converter efficiency, GDI calibration, Nano particle number and size measurement, Fuel consumption measurement, Engine noise and measurement and HVAC testing etc.

## RLDA LAB

At AARTC our RLDA lab team is specialized in vehicle instrumentation, data collection and data analysis. Road load data measurement is very important to optimize the design of components and system. This can be done on the road or on test rig or on proving ground. Acquired data can be used to do further analysis.



With the imc STUDIO measurement software and imc measurement devices, we have powerful tools at your disposal for vibration analysis. Ready-to-go analysis functions such as FFT, order tracking, octave analysis, acoustics and much more will provide finished results during running measurements. Complete analysis packages also offer less experienced users safe and straightforward operations. In imc STUDIO we can live monitor rainflow curve during measurement.



The acoustical quality of technical products such as automobiles or household devices is getting ever more important. The acoustics of a device or the characteristic sound of an automobile influences the purchase decision of the potential customer. Researching sound emissions are indispensable for improving the acoustical features of vehicles, office equipment, dish washers, air-conditioning and many other technical devices.

In AARTC we are capable of giving various type of engineering services like Pass By noise test, In Cabin noise test, powertrain NVH, frequency analysis, order analysis, octave analysis etc.



### **MODAL ANALYSIS**

**Vibration Shaker**  
**Impact Hammer**  
**ICP Accelerometer**  
**Microphones**



### **Listening Studio & Playback System**

**Square- Listening Studio**  
**Headphone playback equalizer**  
**Multimodal interior noise playback system**  
**High quality playback subwoofer**