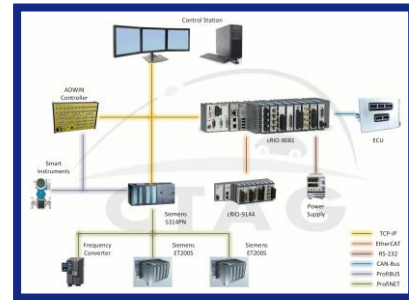


## Engine and engine components tests

- Emissions and power curve analysis
- Durability tests on engine and/or its components
- Fluid dynamic tests
- Engine components validations
- Hot gas testing
- Measurements in customer engine test cells with portable data loggers
- Processing and analysis of data acquired in engine test cells (time signal analysis, frequency analysis, order analysis, fatigue calculation...)
- Design and building of testing equipment in accordance with customer specifications



## Engine testing equipment

### Steady State Dyno

- Maximum power: 190 kW (250 hp)
- Diesel or petrol engines
- Horiba Mexa gas analyser. 5 gases: CO<sub>2</sub>, CO, NO<sub>x</sub>, THC and O<sub>2</sub>
- Data logger room for engine variables such as temperature, pressure, flow, etc.



### Hot gas test rig

#### Operating range

- Power: 400 kW
- Flow range: 40-1500 kg/h
- Maximum pressure: up to 5 barg
- Maximum temperature: 1300 °C

### Portable data loggers

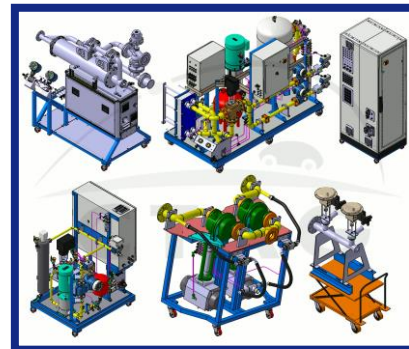
- For measurements in customer test cells and/or on the road. High frequency data loggers for pressure sensors, accelerometers, strain gauges, etc.

### Engine components instrumentation department

- Temperatures, pressures, strain/stress, acceleration...

### Software

- Matlab, Pulse (Bruel&Kjaer) and RPC (MTS). This software can be used for signal processing such as signal filtering, engine order analysis, vibration analysis, fatigue calculation, etc.



## Products

- Engines and components (cars, buses, trucks, etc.)

## Project example

- Conception, design, manufacturing and commissioning of a hot gas test rig with capability to reproduce with high accuracy and repeatability the temperatures, flows and pressures of the coolant and exhaust gases. Communication with ECUs is also integrated



## R&D Projects

- BIODIESEL: Characterization of biodiesel and evaluation of its compatibility in engines under controlled test bench conditions
- New exhaust line catalytic converters: study of diesel exhaust pipe catalytic converter prototype. Formulation, building, calculation and laboratory and engine bench performance

## Linked areas

- Engineering: Calculation and simulation
- Vibration, fatigue and environmental testing

## Associations

- Collaboration on national and regional projects with the following research groups:
  - Research group of carbonaceous materials and equipment of the Department of Inorganic Chemistry (University of Alicante)
  - Synthesis, simulation and spectroscopy research group of the Department of Organic Chemistry (University of Vigo)
  - EQEA research group: Chemical, energy and environmental engineering

