

Structural durability

Applus IDIADA offers complete engineering and testing services to study and validate the structural durability of complete vehicles, systems and components.



Simulation and testing techniques are combined to define and validate the **durability targets**. From a testing point of view, accelerated testing programmes are required by automotive companies in order to reduce the development time of new products.

At Applus IDIADA, we count on state-of-the-art engineering tools, testing facilities and a proving ground complex to give our OEMs and Tier 1 suppliers first-class worldwide support for product development considering durability criteria.

Our experienced engineering and technical teams cover all the development project phases: the **fatigue analysis** based on Finite Element Analysis; the design of accelerated testing programmes either on the proving ground or the road simulator; and the execution of the test itself.

Service breakdown:

- CAE Finite Element Analysis (FEA).

- **Test procedure design and definition:** Based on the analysis and the extrapolation of the information collected directly in the market (**Road Load Data**) in order to design an endurance schedule using the accelerated fatigue surfaces of the proving ground or test benches which will be **correlated** in terms of structural fatigue damage to the vehicle **real market usage** (For further information, see our pdf 'Accelerated test design').

- **Accelerated Structural Durability Test on the proving ground:**
 - Mileage accumulation on the specific durability test track surfaces combined with exhaustive checks, data acquisition, detailed inspections and expert **failure analysis** to obtain the most realistic results.
 - Complete service offered in turn-key basis for all types of vehicles (passenger cars, commercial vehicles, trucks, busses and coaches) including test and data management, failure analysis, countermeasure application and complete reporting.

- **Accelerated Structural Durability Test or road simulator:** Tests done on the **4-poster** road simulator.