

Heavy Vehicle ADAS Testing

A proven ADAS testing solution for trucks,
buses and commercial vehicles



Introducing heavy vehicle testing

Heavy vehicles account for a small fraction of road traffic but a disproportionate share of road fatalities. Regulators and consumer test programmes worldwide are responding with a new generation of ADAS requirements necessitating advanced testing equipment.

AB Dynamics' heavy vehicle ADAS testing solution is trusted worldwide by leading OEMs and test labs with over 2,000 systems in service, including in official Euro NCAP testing.

Driving robots, ADAS platforms, impactable soft targets and integrated software combine in a single proven ecosystem to make truck and bus ADAS testing precise, repeatable and efficient.

Our solution is perfect for:

/ Regulatory testing

Homologation to UN regulations and the EU General Safety Regulation.

/ Consumer testing

Euro NCAP's new Truck Safe crash avoidance protocols.

/ Development testing

From early prototype evaluation through to sign-off.

The challenge:

Demand for safer trucks

According to NHTSA in the United States, more than 5,300 people were killed in crashes involving large trucks in 2024 with 83% of those killed outside the truck; car occupants, pedestrians, cyclists and motorcyclists.

The picture is similar in Europe, where despite representing less than 3% of vehicles on the roads, heavy trucks are involved in almost 15% of road fatalities.

As a result, there is growing demand for better heavy vehicle safety and testing requirements globally:

/ United States

NHTSA is advancing rulemaking to require automatic emergency braking on heavy vehicles, and in June 2026 the IIHS rated commercial vehicles for the first time.

/ Europe

New EU safety regulations and Euro NCAP's expanding Truck Safe programme are raising the bar for heavy vehicle safety.

/ India

Five ADAS systems will become mandatory on heavy vehicles in a phased rollout from 2027, necessitating advanced safety technologies.



Applications

Our solution supports the full breadth of heavy vehicle ADAS testing:

/ AEB testing

HGV-to-car rear stationary, moving and braking scenarios

/ Lane support systems

Lane keep assist and emergency lane keeping

/ Blind spot monitoring

Nearside cyclist detection

/ Turning scenarios

Truck-to-cyclist nearside turn tests

/ Vulnerable road user detection

Pedestrian and cyclist, crossing, longitudinal and moving off

/ Euro NCAP Truck Safe

Including the crash avoidance protocol suite

/ General Safety Regulation validation

UN R131, R151, R159 and related regulations

/ Development testing

Edge cases and scenarios beyond the published protocol

A proven ADAS testing ecosystem

From scenario creation to test execution and results analysis, every element of the AB Dynamics solution works together in a single, integrated workflow.



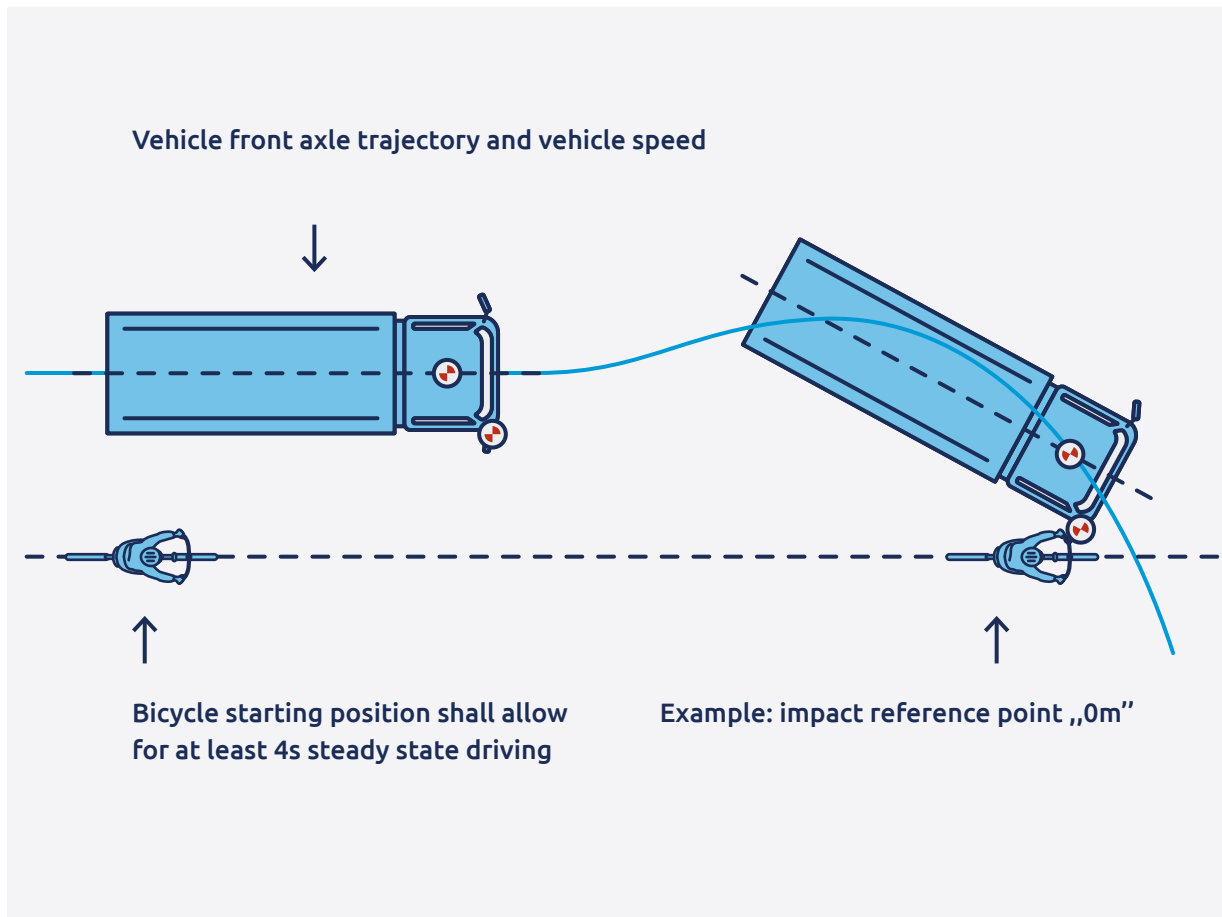
Testing applications example

Euro NCAP testing workflow



Testing applications example

Turning scenarios



The truck-to-cyclist nearside turn is one of the most demanding scenarios in heavy vehicle testing: the truck's path and speed must be synchronised with the cyclist's approach throughout the manoeuvre. Our solution controls both objects to maintain the protocol's reference-point accuracy, with data captured for both the truck and cyclist target throughout the test. Track Applications Suite automates the complex calculations and synchronisation this scenario would otherwise demand.

Key benefits

Improve test repeatability

Driving robots remove human variability. Our systems typically control the vehicle to an accuracy of 2 cm, speed to within 0.5 km/h and steering angle to within 0.5 degrees.

Test object synchronisation

Every test object, including the test vehicle, is controlled and synchronised, ensuring repeatable scenario execution.

Accelerate development programmes

Pre-defined scenario libraries, automated test-point generation and trackside validation cut setup and repeat-run time, so teams cover more scenarios in every session.

Reduce testing complexity

One ecosystem covers planning, vehicle and target control, synchronisation, data capture and reporting, removing the integration burden of mixed-vendor toolchains.

Support regulatory compliance

Equipment and software are ready for Euro NCAP heavy vehicle testing and UN regulatory scenarios, with test runs validated against protocol requirements at the trackside.

Scale testing activities

From a single homologation test to complex multi-object scenarios, the same ecosystem scales with your programme.



Key features



Vehicle agnostic

Compatible with trucks, buses and commercial vehicles; driving robots can be retrofitted to almost any vehicle



Quick and simple installation

A robot system can be operational in under two hours and the Flex-0™ drive-by-wire system in as little as 30 minutes



Proven ADAS ecosystem

Fully integrated hardware and software, developed and refined through years of NCAP testing





Training and support

We develop tailored solutions for your specific needs, and support the planning, delivery and commissioning of your system.

Day-to-day operation doesn't require specialist skills, a typical user can be trained to safely operate the robots in a few days, and further training courses are available throughout the life of the equipment.

Support continues throughout the lifecycle of the equipment, with software updates and remote technical assistance by email, phone and online from our teams in Europe, Asia and the Americas.

About AB Dynamics

We pride ourselves on delivering solutions that enable the development of safer, more enjoyable, efficient and sustainable vehicles.

When you choose a solution engineered by AB Dynamics, you're benefiting from 40 years of industry knowledge and experience.

Our automotive testing and verification solutions are used by the top 25 vehicle manufacturers, Tier 1 suppliers, test facilities and autonomous vehicle developers.

As a key partner to the global automotive industry, we provide proven hardware and software that's backed up by unrivalled service and support.





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