# Vehicle-in-the-loop testing

Vehicle-in-the-loop methodology covers the current gap between simulation and physical tests' methodologies by **integrating a synchronized virtual environment into a real vehicle**, doing testing in a simplified track and guarantying the correlation between physical and virtual vehicle positioning. In response to an ever-increasing complexity in the Automated Driving functions implemented in vehicles, IDIADA's Vehicle-in-the-loop services provide solutions that allow the broadening of the testing coverage matrix as well more complex and dangerous test scenarios achieved through simulation.

DESCRIPTION

Thanks to our expertise with advanced simulation tools, we have designed a **new virtual testing platform** to support the development of **ADAS and Automated Driving**. By applying IDIADA's methodology, virtual sensors information is injected into the ADAS and Automated Driving vehicle's ECU to test the vehicle's behavior when triggering the physical actuators. The geo-localization of the vehicle and the **use of digital maps** allows to **merge virtual and physical worlds** providing immersive scenarios to the driver.

The main applications of ViL are the pre-calibration and evaluation of the ADAS and Automated Driving systems and is also being assessed by **Euro NCAP** to be included into the process of vehicle's safety rating, allowing a wider test matrix coverage. Through specialized simulation software, our engineers can generate a **wider range of complex traffic scenarios** according to existing and future standards guaranteeing the safety of the driver. Our vehicle-in-the-loop testing is a cost-effective solution that allows ADAS and Automated Driving systems development and validation in multiple complex or **dangerous** scenarios, **with less requirements for proving ground (simple tracks, virtual targets) and efforts of logistics** and guaranteeing high **tests** accuracy and repetitiveness.

IDIADA has all the necessary know-how and tools to perform the **vehicle-in-the-loop turnkey programs**. Our versatile and modular virtual platform is a tailored solution that adapts to our clients' requirements.
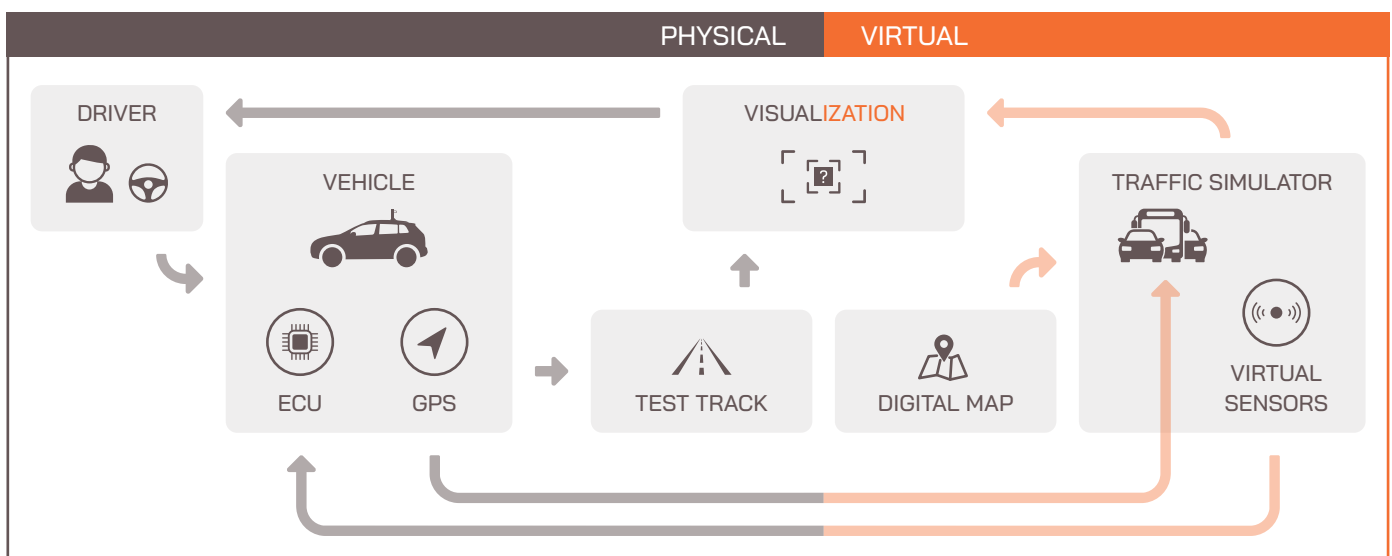
(i) CONTACT INFORMATION

Headquarters & Technical Centre • *L'Albornar - PO Box 20* • *E-43710 Santa Oliva (Tarragona) Spain*

For further details, please contact: ✉ info@idiada.com 📞 T +34 977 189 360

www.idiada.com